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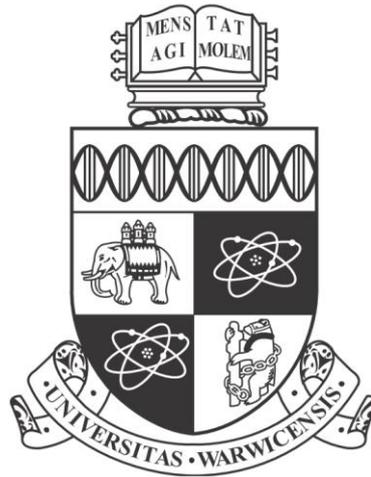
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**“It’s not already laid out for you in a small  
company”: UK graduates’ knowledge and skills  
utilisation in small and large businesses**

by

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A thesis submitted in fulfilment of the requirements for the degree of  
**Doctor of Philosophy in Employment Research**

Institute for Employment Research  
University of Warwick

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**WARWICK**

## Table of Contents

List of Figures .....	viii
List of Tables .....	ix
Abbreviations and definitions .....	xi
Acknowledgements.....	xiii
Declarations .....	xiv
Abstract.....	xv
1 The research project .....	1
1.1 Background to the research.....	1
1.2 Research problem .....	3
1.2.1 Broad research questions .....	4
1.2.2 Summary of the findings.....	5
1.3 Justification for the research .....	7
1.4 The economic context.....	8
1.5 Definitions.....	9
1.6 Scope of the research and key assumptions.....	10
1.7 Outline of the thesis.....	11
2 Research issues .....	14
2.1 Introduction .....	14
2.2 The changing relationship between higher education and the labour market .....	15
2.2.1 HE expansion and its implications .....	15
2.2.2 HE as preparation of graduates for work.....	15
2.2.3 HE as an investment for improved employment prospects .....	17
2.2.4 Changes in HE as rationale for promoting graduate employment in SMEs... ..	18
2.3 Knowledge, skills, and HE in the UK graduate labour market .....	18
2.3.1 The knowledge economy and labour market polarisation .....	19
2.3.2 Changing notions of career development.....	20
2.3.3 Towards a re-evaluation of ‘graduate jobs’? .....	22
2.3.3.1 SOC(HE) 2004 and 2010 .....	22
2.3.3.2 The status of the associate professional occupations .....	24
2.3.4 Are graduates able to use their skills at work? .....	25
2.4 Graduates’ skill utilisation.....	26
2.4.1 Definitions of skill utilisation.....	26
2.4.1.1 HPW-based definitions .....	27

2.4.1.2	Match-based definitions .....	28
2.4.1.3	Opportunity for skill use and development definitions .....	28
2.4.1.4	Critiques of skill utilisation .....	29
2.4.2	Defining graduates' knowledge and skills .....	30
2.4.2.1	Knowledge .....	30
2.4.2.2	Skills .....	31
2.4.3	Evidence of graduates' knowledge and skills utilisation .....	33
2.4.3.1	Graduates' skill underutilisation and associated outcomes .....	34
2.4.3.2	Duration of skill underutilisation .....	36
2.4.3.3	Evidence of graduate job upgrading .....	37
2.4.3.4	Graduates' opportunity for skill use .....	39
2.5	Small businesses as new graduate employers .....	40
2.5.1	Experience of work in small firms – does size matter? .....	41
2.5.2	Graduate careers in small firms – evidence and challenges .....	44
2.5.3	Graduate recruitment to/employment in small firms .....	47
2.5.4	Graduate knowledge and skill utilisation in small firms .....	49
2.6	Issues outstanding from the literature .....	53
3	Methodology .....	56
3.1	Introduction .....	56
3.2	Mixed methods research approach .....	57
3.2.1	Benefits of using mixed methods designs .....	57
3.2.2	Drawbacks to using mixed methods designs .....	58
3.2.3	Justification for selected mixed methods design .....	59
3.2.4	Pilot study .....	61
3.2.5	Summary of research methods adopted .....	62
3.3	Data and definitions .....	63
3.3.1	<i>Futuretrack</i> .....	63
3.3.2	Business size .....	64
3.3.3	Private sector .....	66
3.3.4	Associate professional occupations .....	68
3.3.5	Graduates .....	68
3.3.5.1	Quantitative phase .....	69
3.3.5.2	Qualitative phase .....	70
3.3.6	Skill utilisation .....	72

3.3.7	Career development .....	74
3.4	Consideration of alternative research methods .....	77
3.4.1	Solicited online diary methods .....	77
3.4.2	Structured observation .....	78
3.5	Final research methodology .....	80
3.5.1	Survey data .....	80
3.5.1.1	Advantages and limitations of surveys .....	80
3.5.1.2	Self-assessment in surveys.....	81
3.5.2	Interview data .....	83
3.5.2.1	Structured and unstructured interviews.....	83
3.5.2.2	Semi-structured interviews.....	84
3.5.2.3	Justification for the semi-structured interview method.....	84
3.5.2.4	Justification for telephone interviews .....	86
3.5.3	Quantitative methodology.....	89
3.5.3.1	Hypotheses.....	90
3.5.3.2	Quantitative sample.....	92
3.5.3.3	Exploratory factor analysis.....	96
3.5.3.4	Regression models .....	98
3.5.3.5	Limitations of regression analysis .....	100
3.5.4	Qualitative methodology .....	101
3.5.4.1	Research questions .....	101
3.5.4.2	Interview sample.....	102
3.5.4.3	Data analysis .....	111
3.5.4.4	Limitations of telephone interviews .....	112
3.6	Methodological validity and reliability .....	113
3.6.1	Quantitative – internal validity .....	113
3.6.2	Quantitative – external validity.....	113
3.6.3	Qualitative validity .....	113
3.7	Ethical considerations .....	114
3.8	Summary .....	115
4	Quantitative phase.....	116
5	Graduate employment and business size .....	117
5.1	Introduction .....	117
5.2	Graduate employment and business size .....	117

5.2.1	Employer size .....	117
5.2.2	Occupations .....	119
5.2.3	Industries .....	121
5.2.4	Undergraduate subjects and HEI type .....	123
5.2.5	Personal characteristics .....	125
5.3	Graduates' preferences and business size.....	126
5.3.1	Reasons for taking job.....	126
5.3.2	Personal values .....	128
5.3.3	Current salaries .....	129
5.3.4	Attitudes to risk.....	130
5.3.5	Career development .....	131
5.4	Discussion.....	132
6	Graduates' skill utilisation and business size .....	135
6.1	Introduction .....	135
6.2	Use of degree skills and knowledge .....	136
6.3	Use of specific skills.....	140
6.3.1	Eleven specific skills .....	141
6.3.2	Specific skills – two factors .....	148
6.3.3	Specific skills – four factors .....	153
6.4	Degree requirement and high job appropriateness .....	158
6.5	Did business size affect skill utilisation? .....	162
6.5.1	Hypotheses.....	162
6.5.2	Discussion.....	164
7	Qualitative phase .....	166
8	Use of knowledge and skills at work.....	167
8.1	Introduction .....	167
8.2	Use of degree skills and knowledge at work.....	167
8.2.1	Meanings of degree knowledge.....	168
8.2.1.1	“Background knowledge” / “understanding” .....	168
8.2.1.2	“Develop a rapport with the client” .....	172
8.2.1.3	“Things I have studied” / “actual topics of lectures” .....	175
8.2.1.4	“Technical aspects” .....	176
8.2.2	Meanings of degree skills.....	176
8.2.2.1	“Practical” / “non-subject specific” .....	177

8.2.2.2	“Graduate skills” .....	178
8.2.2.3	“Methodological process” / “approach” .....	179
8.2.3	Using degree knowledge and skills at work .....	180
8.2.3.1	Narrow vs. broad conceptualisations of ‘subject/discipline knowledge’ .....	180
8.2.3.2	Did degree subjects influence conceptualisations of subject knowledge? 181	
8.2.3.3	Differences between Futuretrack survey responses and interviews.....	183
8.3	Using specific skills in work .....	185
8.3.1	Research skills .....	185
8.3.1.1	Picking out what's important .....	185
8.3.1.2	Learning about new things.....	186
8.3.1.3	Research skills and degree skills and knowledge .....	188
8.3.2	Innovative thinking .....	189
8.3.2.1	“Thinking outside the box” .....	189
8.3.2.2	Creative approach to solving problems .....	192
8.3.2.3	Innovative thinking as communication .....	193
8.4	Other graduates in the company .....	194
8.4.1	“I don’t know anybody without a degree” .....	194
8.4.2	“A degree is not a requirement” .....	195
8.4.3	“The admin team were all graduates as well” .....	197
8.4.4	“They're quite elitist in their hiring” .....	198
8.4.5	Degree “as a proxy for hard work” .....	199
8.5	Skills and knowledge graduates did not have the opportunity to use .....	201
8.5.1	“I don’t think so” .....	202
8.5.2	“The intellectual side of things” .....	203
8.6	Discussion.....	205
9	Career development in small and large businesses.....	209
9.1	Introduction .....	209
9.2	Taking on additional responsibilities.....	210
9.2.1	Taking opportunities .....	210
9.2.2	Making opportunities.....	213
9.2.3	Taking and making opportunities .....	217
9.3	...In an organisational context.....	220
9.3.1	Freedom to make suggestions .....	220

9.3.1.1	“Set in its ways” .....	220
9.3.1.2	A lack of slack .....	221
9.3.1.3	Employment relations .....	224
9.3.2	Expectations of work .....	226
9.3.2.1	“[E]veryone has to do everything” .....	227
9.3.2.2	“I kind of do different bits and bobs” .....	227
9.3.3	Organisational change .....	229
9.3.3.1	Employer growth .....	229
9.3.3.2	Change ‘from above’ .....	232
9.3.4	Too little support? .....	234
9.4	Career development .....	238
9.4.1	Limited opportunity for career progression .....	240
9.4.1.1	Limited further promotion .....	240
9.4.1.2	Outgrowing the company .....	241
9.4.2	Moving around .....	242
9.4.3	Staying with the employer .....	243
9.5	Does small business experience lead to better career progression? .....	246
9.5.1	New job at ‘higher’ level .....	246
9.5.2	New job at ‘lower’ level .....	247
9.6	Discussion .....	252
10	Conclusions and implications .....	255
10.1	Introduction .....	255
10.2	Main findings .....	256
10.2.1	Graduate knowledge and skill utilisation in small and large businesses .....	256
10.2.1.1	Degree skills and subject knowledge .....	256
10.2.1.2	Specific skills and the importance of knowledge .....	257
10.2.1.3	Degree requirement .....	260
10.2.1.4	Job appropriateness .....	261
10.2.2	Graduates' experiences of career development .....	261
10.2.2.1	Taking and making opportunities .....	262
10.2.2.2	Changing employer as a response to career plateaus .....	263
10.3	Contributions .....	265
10.3.1	Contribution to knowledge and theory .....	265
10.3.1.1	Business size .....	265

10.3.2	Contribution to methodology .....	266
10.3.2.1	Skill utilisation concept .....	266
10.3.2.2	Mixed-methods research .....	268
10.3.3	Contribution to empirical evidence .....	269
10.4	Implications for practice and policy .....	272
10.4.1	For current students and recent graduates .....	272
10.4.2	For small business employers .....	273
10.4.3	For university careers services .....	275
10.4.4	For policymakers .....	276
10.5	Limitations and directions for further research.....	278
10.5.1	Limitations.....	278
10.5.2	Directions for future research.....	280
10.6	Concluding statement.....	282
11	References .....	283
	Appendix A: Additional tables.....	307
	Appendix B: Selecting interview participants .....	320
	Appendix C: Qualitative research materials .....	322
	Appendix D: Anonymised interview transcript (abridged) .....	331

## List of Figures

Figure 1.1: Unemployment rates for recent graduates and those graduating longer ago, 1992-2011 (ONS, 2012).....	9
Figure 2.1: Literature review strands.....	14
Figure 3.1: Sequential two-stage research design outline.....	61
Figure 3.2: Screenshot of master interview file.....	112
Figure 3.3: Screenshot of Excel coding file.....	112
Figure 5.1: Proportion of graduates by employer size.....	118
Figure 5.2: Share of employment by business size (BIS, 2011).....	118
Figure 5.3: Business size of main current employer by major occupational group.....	121
Figure 5.4: Business size of main current employer by SOC(HE) 2010.....	121
Figure 5.5: Proportion of graduates in businesses by size and major industry group.....	122
Figure 5.6: Employment by business size and industry sectors (BIS, 2011).....	123
Figure 5.7: Undergraduate subject studied and employer size.....	124
Figure 5.8: HEI type and employer size.....	125
Figure 5.9: Graduates' salary distributions by employer size.....	129
Figure 5.10: Graduates' attitudes to risk by business size.....	130
Figure 6.1: Reported use of degree skills and knowledge in current job by business size..	137
Figure 6.2: Use of specific skills 'a lot' by employer size.....	141
Figure 6.3: Skills developed on the undergraduate course and used at work 'a lot'.....	143
Figure 6.4: Mean factor index scores by business size – two factors.....	151
Figure 6.5: Mean rescaled factor scores (indices) by business size – four factors.....	155
Figure 6.6: Degree qualification and high job appropriateness by employer size.....	159
Figure A.1: Scree plot after IPF(2) and parallel analysis.....	315
Figure A.2: Factor loadings and score plot, IPF(2).....	316
Figure A.3: Scree plot after IPF(4) and parallel analysis.....	317
Figure A.4: Factor loadings and score plot, IPF(4).....	318
Figure C.1: Letter to Chamber of Commerce representative (anonymised).....	322
Figure C.2: Letter to Futuretrack respondents to participate in the interviews.....	323
Figure C.3: Question guide emailed to interview participants.....	324
Figure C.4: Researcher interview schedule.....	325
Figure C.5: Example of annotated interview schedule (Alex).....	328
Figure C.6: Extract of early theme codes from fieldwork notebook.....	329
Figure C.7: Thesis project website screenshot.....	330

## List of Tables

Table 3.1: Sampling frame and resulting responses for graduates' interviews sample selection .....	71
Table 3.2: Comparison of thesis sample graduates' and all <i>Futuretrack</i> first-degree UK-domiciled graduates' personal characteristics .....	93
Table 3.3: Comparison of thesis sample graduates' and all <i>Futuretrack</i> first-degree UK-domiciled graduates' HE background .....	95
Table 3.4: SOC 2010 unit groups of <i>Futuretrack</i> interview participants.....	103
Table 3.5: Graduates' HE background – interview sample .....	106
Table 3.6: Graduates' employment at the time of the <i>Futuretrack</i> survey – interview sample .....	107
Table 3.7: Graduates' use of skills and knowledge at the time of the <i>Futuretrack</i> survey – interview sample.....	108
Table 3.8: Graduates' careers since the <i>Futuretrack</i> survey – interview sample.....	109
Table 5.1: Standard Occupational Classification (SOC) 2010, major occupational groups..	119
Table 5.2: Reasons for selecting current main job by employer size .....	127
Table 5.3: Graduates' personal values by employer size.....	128
Table 5.4: Graduates' perceptions of career development by size of employer .....	132
Table 6.1: Likelihood of using degree skills and knowledge (odds ratios).....	139
Table 6.2: Extent of using skills 'a lot' by occupation .....	142
Table 6.3: Likelihood of reporting being required to use 11 specific skills 'a lot' of the time (odds ratios) .....	146
Table 6.4: Rotated factor loadings and unique variances (IPF(2) FA promax rotation) .....	150
Table 6.5: Summary statistics for raw and rescaled factor scores, two factors .....	151
Table 6.6: Business size effects on factor scores, two factors (OLS coefficients).....	152
Table 6.7: Rotated factor loadings and unique variances (IPF(4) FA promax rotation) .....	154
Table 6.8: Summary statistics for raw and rescaled factor scores, four factors.....	155
Table 6.9: Business size effects on skill factor scores, four factors (OLS coefficients) .....	157
Table 6.10: Whether job required a degree and whether job was appropriate (odds ratios) .....	161
Table 9.1: Whether the graduates changed employers since the <i>Futuretrack</i> survey.....	239
Table A.1: Descriptive statistics of graduates' skill utilisation variables.....	307
Table A.2: Descriptive statistics of graduates' skill utilisation variables by employer size..	308
Table A.3: Descriptive statistics of regressors .....	309
Table A.4: Mean self-reported frequency of using specific skills at work, by employer size .....	311
Table A.5: Likelihood of reporting being required to use 11 specific skills at work, ordered logit (odds ratios) .....	312
Table A.6: Descriptive statistics of self-reported frequency of use of eleven skills .....	313
Table A.7: Descriptive statistics of self-reported frequency of use of eleven skills, standardized .....	313
Table A.8: Polychoric correlation matrix of the self-reported frequency of use of eleven skills.....	314

Table A.9: Whether job required a specific /general degree rel. to no degree (odds ratios)	319
Table B.1: Graduates willing to be contacted for follow-up research, by occupation and business size	320
Table B.2: Graduates willing to be contacted for follow-up research by major industry group and business size	320
Table B.3: Graduates employed in SOC 2010 group 35, by detailed 4-digit group and employer size	321

## Abbreviations and definitions

ACGAS	Association of Graduate Careers Advisory Services
AGR	Association of Graduate Recruiters
BIS	Department for Business, Innovation and Skills
CRAC	Careers Research and Advisory Centre
DfES	Department for Education and Skills
DIUS	Department for Universities, Innovation and Skills
DLHE	Destinations of Leavers from Higher Education
EFA	Exploratory Factor Analysis
EREBUS	Engaging REsearch for BUSiness
ESRC	Economic and Social Research Council
EU	European Union
FA	Factor Analysis
FSB	Federation of Small Businesses
FT	Futuretrack
JDR	Job Demands – Resources model
HE	Higher Education
HECSU	Higher Education Careers Service Unit
HEI	Higher Education Institution
HESA	Higher Education Statistics Agency
HR	Human Resources
HRM	Human Resource Management
ICT	Information and Communication Technology
IER	Institute for Employment Research
IPF	Iterated Principal Factor
LFS	Labour Force Survey
MMR	Mixed Methods Research
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares regression
ONS	Office for National Statistics
PIAAC	Programme for the International Assessment of Adult Competencies
REFLEX	Research into Employment and professional FLEXibility
SCELI	Social Change and Economic Life Initiative
SME	Small and medium-sized enterprises
SOC	Standard Occupational Classification
SOC(HE)	Classification of graduate jobs (2004, 2010)
STEM	Science, Technology, Engineering and Mathematics
STEP	Shell Technology Enterprise Programme
UCAS	Universities and Colleges Admissions Service
WBS	Warwick Business School
WERS	Workplace Employment Relations Survey
UK	United Kingdom
<i>Skills</i>	
Writ	Written communication
Spk	Spoken communication
Num	Numerical analysis
Crit	Critical evaluation
Res	Research skills
Pres	Presentation skills

Innv	Innovative thinking
Entr	Entrepreneurial skills
Team	Ability to work in teams
Ind	Ability to work individually
Time	Ability to manage my time effectively

*Business size*

Micro	Fewer than 10 employees	} SMEs
Small	10-49 employees	
Medium	50-249 employees	
Large	250 or more employees	

*SOC 2010 Classifications (major groups; ONS, 2010)*

1	Managers, directors and senior officials
2	Professional occupations
3	Associate professional and technical occupations
4	Administrative and secretarial occupations
5	Skilled trades occupations
6	Caring, leisure and other service occupations
7	Sales and customer service occupations
8	Process, plant and machine operatives
9	Elementary occupations

*SOC(HE) 2010 (Purcell and Elias, 2015)*

Expert	Require the use of specialist HE knowledge and high-level skills (e.g. chemical scientists, chartered surveyors)
Orchestrator	Require the gathering and use of knowledge and experience in the occupation to evaluate information and make decisions (e.g. managers and directors, officers in the armed forces)
Communicator	Require interpersonal, creative or high-level knowledge and skills, to manipulate and communicating information (e.g. journalists, marketing associate professionals)
Non-graduate	Jobs that neither require nor use the knowledge and skills graduates developed in higher education

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## Declarations

This thesis is submitted to the University of Warwick in support of my application for the degree of Doctor of Philosophy. It has been composed by myself and has not been submitted in any previous application for any degree.

The work presented (including data generated and data analysis) was carried out by the author except for the *Futuretrack* dataset, access to which was kindly provided by the Warwick Institute for Employment Research.

Parts of this thesis have been published by the author:

- Luchinskaya, D. (2014). Do graduates use the skills and knowledge gained from their degrees? *Graduate Market Trends*, (winter): 10-13.
- Luchinskaya, D. (2013). Does Size Matter? Graduates' Skills and Knowledge Use in Small and Large Businesses. In B. Clegg, J. Scully and J. Bryson (Eds.), *ESRC Research Capacity Building Clusters Conference Proceedings* (pp. 133-140). Aston: Aston Business School.
- Luchinskaya, D. (2012). What do graduates do in small businesses? *Graduate Market Trends*, (spring): 15-18.

Parts of this thesis have been taken from unpublished material prepared by the author as part of the PhD course of study:

- Luchinskaya, D. (2012, April). *Philosophy of social science research assignment*. Warwick: Institute for Employment Research.
- Luchinskaya, D. (2011, September). *Graduates in UK small businesses: What is the extent of graduate skill utilisation?* [Upgrade paper] Warwick: Institute for Employment Research.
- Luchinskaya, D. (2011, April). *Qualitative research assignment*. Warwick: Institute for Employment Research.

## Abstract

Small firms have been highlighted by the UK government as potential graduate employers, in the context of an expanding higher education system and slow growth in 'traditional' graduate jobs. But it is unclear whether graduates working in small firms would have similar opportunities to use their knowledge and skills and develop their careers as would graduates working in large companies. This thesis investigated this issue using a mixed-methods approach informed by small business and career theories. A targeted statistical analysis of a national longitudinal dataset of UK graduates currently in their early careers (*Futuretrack*) was followed up with interviews with a strategically selected sub-sample of 20 graduates employed in business and public service associate professional occupations.

Little association was found between employer size and graduates' use of the knowledge and skills developed during their university degrees. However, some evidence suggested that the ways in which graduates were taking on additional responsibilities differed by employer size: larger companies were more likely to have formal career development programs in place and graduates were able to *take* opportunities, while small companies tended to have less formal arrangements, so that graduates had to be more self-reliant and *make* opportunities to develop their jobs. However, graduates in small businesses tended to reach a career plateau relatively quickly, which compelled them to change employers. Most of these graduates, however, thought that their experience in small businesses had helped them go on to get better jobs.

The main contribution of this thesis is the finding that, even in a narrowly defined occupation and industry group, business size has a partial and qualified effect on graduates' experience of work and career development. The findings also have significant implications for policy, recommending that graduates' career development opportunities be taken into account when encouraging graduates to work in small firms.

## 1 The research project

Small and medium sized enterprises, and small firms in particular, have been recently highlighted by the UK government as potential graduate employers, in the context of an expanding higher education system and slow growth in ‘traditional’ graduate jobs typically offered by large employers. However, it is far from clear what effects business size has on graduates’ experience of work, ability to use their skills and knowledge, and early career development. This thesis investigated how UK graduates employed in small companies made use of their skills and knowledge and developed their early careers compared to graduates employed in large businesses.

### 1.1 Background to the research

Small and medium-sized businesses (SMEs) make a substantial contribution to the UK economy as they comprise the majority of all private sector businesses in the UK, and are responsible for about half of employment and turnover (51% and 45% respectively, excluding businesses with no employees (BIS, 2012)). Small firms (10-49 employees) form a substantial proportion of SME economic contributions, constituting 14% of all employers, and providing 17% of employment and 16% of turnover ((BIS, 2012). Over the last thirty years, SMEs have been frequently proposed as potential employers for university graduates by the UK government in the context of an ongoing expansion in higher education (HE) participation (Sear et al., 2012; Holden et al., 2007; Williams and Owen, 1997) and limited growth of vacancies with ‘traditional’ graduate employers, usually large firms (AGR, 1995). The policy rationale is both to provide graduates with the opportunity to use and develop their skills, and to provide small firms with the skills needed to improve competitiveness (Sear et al., 2012).

At the same time, there has been considerable concern about the perceived problem of *underutilisation* of graduates’ knowledge and skills, where graduates possess more skills and knowledge than that required by their job (Alpin et al, 1998), both across the labour market as a whole and in small businesses in particular. Underutilisation of skills can pose a problem for both employees and employers. Research on *skill utilisation* at work – a multi-dimensional construct with research areas in labour economics, occupational psychology, and management science – has found that skill underutilisation is associated with lower pay (Green and Zhu, 2010), as well as lower job satisfaction (e.g. Green and Zhu, 2010; O’Brien, 1983), employee engagement (e.g. Truss et al., 2006 in: Truss et al., 2013), and

well-being (e.g. Warr, 1994; 1990; 1987) than effective skill utilisation.<sup>1</sup> Employers whose employees are not using their skills at work could improve business performance by enabling their employees to make the most of their skills (e.g. CFE, 2008). Small businesses in particular may face difficulties in identifying the skills and capabilities of their workforce, mostly owing to a lack of formal, systematic processes to do so (e.g. Vickerstaff, 1992).

However, research on graduates' skill utilisation paints only a partial picture of skill use at work. Whether graduates use the knowledge that they develop at university is rarely investigated, and the focus of research tends to be on skill use, which excludes the capacity for further skill development. Crucially, almost no research has systematically examined whether knowledge and skill utilisation differs for graduates employed in small and in large businesses, controlling for the type of occupation and industry sector.

This question is important, because it is far from clear whether and how the size of the firm affects graduates' opportunities for using their skills and knowledge and developing their careers (e.g. Holden et al., 2007). Whether business size affects the experience of work at all has been widely debated (e.g. Curran and Stanworth, 1981). The evidence to date suggests that firm size does have a limited role in affecting employees' perceptions of their experience of work, possibly associated with informal practices fostering pleasant employment relations, and that the business context is also important (see Section 2.5.1 for discussion). It is also generally accepted and asserted that small firms are likely to have more varied and flexible work roles because of less formalised division of labour (e.g. Tsai et al., 2007), and that graduates may be able to use this flexibility to their advantage to take opportunities to use and develop their knowledge and skills (Arnold et al., 2002), or even 'grow' their jobs (Harvey et al., 1997). However, this premise of work role flexibility and its implications for graduates' career development in small firms has seldom been empirically investigated – in fact it has been argued that too much flexibility together with vague job specifications can result in role ambiguity and stress (Johnson, 1991).

A substantial part of the existing research on graduates in SMEs has focused on graduate *recruitment* to SMEs (Sear et al., 2012; Hart and Barratt, 2009; Branine, 2008; Pittaway and

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<sup>1</sup> These problems are particularly acute in the UK's policy of *cost-sharing* in higher education (HE) (Johnstone, 2004), where students and/or their parents pay more towards the costs of HE, which has substantially increased the amount of student debt accrued over the course of a university education.

Thedham, 2005), and has generally found that SMEs, apart from those in specific professional services, tend to hire graduates on an occasional or accidental basis. Research on graduate *employment* in SMEs has reported mixed findings. Some research has pointed out that graduates in SMEs were typically more able to take on high levels of responsibility early on (e.g. Arnold et al., 2002) and to report lower levels of skill underutilisation (e.g. Nove et al., 1997) than those employed in large businesses, but these studies have not examined whether the findings still hold when controlling for occupation, industry sector, and graduates' characteristics. Other research has highlighted that graduates are more likely to face lower wages and other benefits in SMEs than in large companies (e.g. Belfield, 1999) and that smaller firms had more difficulty providing formal and dedicated aspects of human resources, such as training, to employees because of resource constraints (e.g. Cardon and Stevens, 2004). However, very few studies have focused on whether business size itself affects graduates' skill utilisation and career development within similar occupations.

A further difficulty relates to the ability to generalise about graduate employment in SMEs because the SME 'sector' is extremely heterogeneous. Ownership type, industry, size, age of the firm, and growth perspectives are all likely to influence whether or not SMEs will be more or less likely to hire graduates and invest in their development. Related to this issue is that research often conflates 'SMEs' and 'small' business, or otherwise uses a wide range of numbers of employees to define a 'small' business, e.g. fewer than 100 or fewer than 200 workers. Thus, there is a clear need for systematic, mixed-methods research to increase understanding about the multi-dimensional construct of the utilisation of knowledge and skills by graduates at work in *small* businesses and whether this differs from *large* businesses, when controlling for occupation, industry sector, and graduates' personal characteristics, and using clear definitions of 'small' and 'large' businesses.

## 1.2 Research problem

The research gap identified in Section 1.1 raises the following research problem: Does graduates' use of knowledge and skills differ between similar kinds of work in small and in large businesses, and does business size have different implications for graduates' early career development, given that evidence relating to the effects of business size on the experience of work has been mixed?

To address this problem, this thesis used the *Futuretrack* Stage 4 Survey<sup>2</sup> as the main source of data (see Section 3.3.1) and employed a mixed-methods research approach, discussed in more detail in Chapter 3, section 3.5. Briefly, statistical analysis (including cross-tabulations, chi-squared tests of independence, factor analysis, logistic regression, and ordinary least squares (OLS) regressions) was used to analyse the survey data. To investigate these quantitative findings in more detail and to go beyond the *Futuretrack* survey to investigate graduates' career development, telephone interviews were conducted with a subsample of 20 graduates employed in a narrowly defined occupation and industry group (associate professional occupations in business services, 13 in small businesses and seven in large businesses), which were then transcribed, analysed and coded into themes.

This thesis argues that although the statistical analysis revealed little difference between skill utilisation and business size across the labour market, the interview data and analysis within a narrowly defined occupation and industry sector (associate professional occupations in business services) showed important qualitative differences in the ways in which graduates took on additional responsibility and developed their early careers. These findings therefore make three types of contributions to knowledge: (1) theoretical, in terms of identifying a nuanced size effect on graduates' skill utilisation and career development; (2) methodological, in terms of highlighting the importance of treating skill utilisation as a multidimensional construct and the application of mixed methods; and (3) empirical, in terms of generating more information on graduates' employment in small businesses. The focus on the associate professional occupations in business services is especially timely given the currently contested status of such occupations, the evidence of labour market segmentation both within the occupational major group and even within occupations at the unit group level, and the emergence of new jobs that have not been captured in previous occupational classifications.

### **1.2.1 Broad research questions**

To address the research problem set out above, this thesis investigated the following research questions (see also section 2.6 for how these research questions emerge from the

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<sup>2</sup> Survey questionnaire available at: [go.warwick.ac.uk/Futuretrack/what/final\\_Futuretrack\\_2006\\_wave\\_4\\_generic\\_questionnaire.pdf](http://go.warwick.ac.uk/Futuretrack/what/final_Futuretrack_2006_wave_4_generic_questionnaire.pdf)

gaps in the literature; for operationalisation of these research questions, see section 3.5.3.1 for the hypotheses, and section 3.5.4.1 for more specific research questions).

- How, if at all, does graduates' skill and knowledge utilisation differ between those graduates who worked in small businesses and those who worked in large businesses?
- What were graduates' experiences of knowledge and skill use in different sized businesses? What kinds of themes emerged? What were the similarities and differences?
- What were graduates' experiences of career development in small and in large businesses? What kinds of themes emerged? What were the similarities and differences?

### 1.2.2 Summary of the findings

This research project has produced three main findings relating to graduates' knowledge and skill utilisation, experience of work, and career development, summarised below and discussed more fully in Chapter 10. First, that the quantitative analysis showed limited significant difference between graduates' perceptions of using skills and knowledge in small and large businesses. Most of the variation in skill and knowledge utilisation was explained by the different occupations and industries in which the graduates worked and to a lesser extent by the graduates' educational history and personal background. Limited differences in being less likely to perceive using specific skills in small businesses were found, but these differences were small.

Second, the qualitative analysis found that while all interviewed graduates took on additional responsibilities in their jobs, they did so in different ways: by *taking* and *making* opportunities to do so. The interviews, together with research literature, suggested that the presence of formal practices, such as professional development schemes, provide opportunities for graduates to *take*, whereas small businesses are more likely to lack such schemes, and graduates may be required to *make* their own opportunities. Moreover, although all interviewed graduates had 'vague' job descriptions and that most were doing work beyond the job description, graduates employed in large companies tended to have more discretion over what tasks they did, whereas graduates employed in small companies tended to report having to 'do everything' in their jobs because it was expected of them.

Third, the interviews showed a clear pattern between business size and opportunities for career development. Graduates employed in small companies tended to think that although they initially progressed quickly and took on a lot of responsibility, they had since faced difficulties with further promotions and skills development in their company, which may be viewed as reaching a *career plateau*. Some of the graduates in these situations had changed, or were in the process of, changing jobs. Graduates in large companies tended to think that they had opportunities for further skill development with their employer, and did not feel compelled to look for another job. However, most of the graduates who were initially employed in small firms who had changed or were changing employers thought that their experience of work in the small company was helpful in looking for and securing subsequent employment.

Thus, this research as a whole showed a multidimensional approach was important for analysing skill utilisation and career development. The quantitative part of the study did not, in general, find a relationship between skill and knowledge use and business size when controlling for occupation, industry, and individual characteristics (although some relationships were demonstrated). However, the qualitative part of the study enabled a targeted exploration of a specific area of the labour market and identified a qualified and partial size effect using the interview data, which was the main contribution to knowledge and theory of this research project. This argument could only have been made using this specific combination of quantitative and qualitative analysis. The quantitative and qualitative methods both supported each other and provided a more complete picture of graduates' early careers than a monomethod study would have done.

The main policy implications are that, given the finding that graduates in small firms were more likely to encounter a career plateau sooner than those in large firms, which had limitations for their subsequent career development with the small employer, graduates should have an 'exit route' strategy in mind. Exit routes could include finding a job with another employer, going into self-employment or entrepreneurship, or into training or education. Policymakers should therefore assist small firms and their graduate employees to make use of graduates' skills and knowledge, and should consider graduates' long term employment outcomes while encouraging graduate employment in small firms, by facilitating these exit routes from career plateau situations (see Section 10.4.4).

### 1.3 Justification for the research

The research problem outlined in Section 1.2 is a pressing issue in light of the increase in graduate supply and recent government policies calling for small businesses to employ graduates. For example, the Federation of Small Businesses (FSB) proposed a graduate internship scheme to offer work experience to the graduate and to help businesses innovate (FSB, 2009). The UK government has recently commissioned a literature review of graduate recruitment in SMEs (Sear et al., 2012), and has announced an Apprenticeship Grant for Employers to support small businesses in the creation of apprenticeship schemes, and outlined measures to support graduate and postgraduate apprenticeships in the 2014 UK Budget Statement (BIS, 2014). However, academic research has not typically compared graduates' use of skills and experience of work in small and large businesses within similar jobs (see Chapter 2 for a discussion of the key research issues). This is an important omission which should be addressed.

It is important to investigate whether graduates' knowledge and skill utilisation and opportunities for career development differs between small and large employers when controlling for contextual factors and individual graduates' differences. If it were the case that graduates were less likely to use and develop their skills with small employers compared to large ones, and if opportunities for career development were more limited, such a finding would raise questions about current government policy encouraging more graduates to work in small firms and more small firms becoming graduate employers. It has been demonstrated that some aspects of the *entrapment* hypothesis – where initial unsuccessful labour market entry leads to persistent negative consequences for subsequent employment trajectory at the individual level – hold in the UK labour market (Scherer, 2004). This, together with evidence that skill underutilisation leads to cognitive decline (De Grip et al., 2008; Keep and Mayhew, 1996) and persists in the labour market, rather than being a purely temporary phenomenon (Dolton and Vignoles, 2000), implies that should skill underutilisation be found to exist disproportionately among small employers, the UK government should reconsider its policy regarding graduate employment in SMEs in its current form. For example, the government could assist small firms in making use of and developing graduates' skills, and/or bring 'exit routes' from unfulfilling jobs in small employers to the attention of graduate employees (see also Section 10.4).

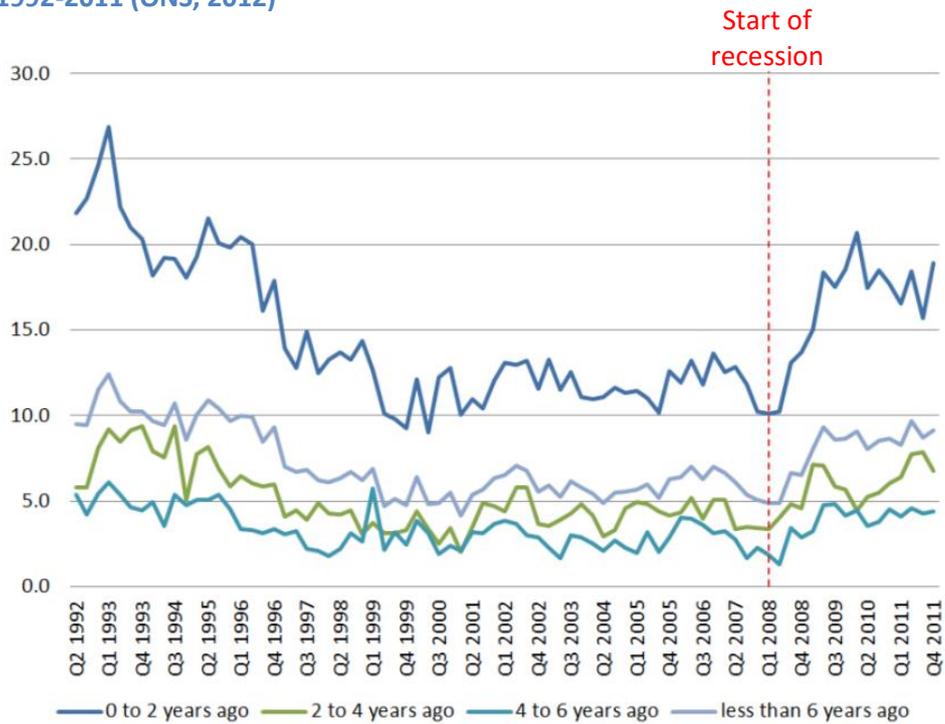
This thesis contributes to knowledge by exploring whether small businesses really do differ from large businesses in terms of the opportunities of using graduates' knowledge and skills. The focus on associate professional and technical occupations in the qualitative phase of the research provides a timely analysis of one of the fastest growing areas of graduate employment of debatable 'graduate job' status – existing research has highlighted the segmentation of jobs within occupational major groups at the major group level and even at the unit group level, as well as across the labour market as a whole (Elias and Purcell, 2015; Okay-Somerville and Scholarios, 2013; Anderson, 2009; Rogers and Waters, 2001). Moreover, many new jobs have emerged within the associate professional and technical occupations, and would not have been investigated in earlier graduate skill utilisation research (see Elias and Purcell, 2004b), which further justifies research on this occupational group.

#### 1.4 The economic context

The graduates in this thesis study graduated in the midst of the UK recession, the so-called 'generation crunch' (Kewin et al., 2010). The 2008 economic recession has had a particularly depressing impact on graduate employment for recent graduates (see Figure 1.1), prompting discussions about the value of a degree and the supply of graduates. While a full exposition of the economic situation cannot be given here, a summary of graduate employment after 2008 provides a useful context for the *Futuretrack* Stage 4 survey responses.

The majority of graduates in the *Futuretrack* survey finished university at the time that unemployment levels were highest and demand for employees was lowest. ONS (2014a) data showed that economic output fell by more than 6% by the first quarter of 2009 and had only just recovered to 2008 levels in the first quarter of 2014. New labour market entrants tend to face worse unemployment rates than incumbents in recessions, and so the *Futuretrack* graduates who were looking for work faced higher unemployment rates than those who graduated longer ago, as shown in Figure 1.1.

**Figure 1.1: Unemployment rates for recent graduates and those graduating longer ago, 1992-2011 (ONS, 2012)**



Notes: 1. Everyone who has graduated within the six years of the survey date for those aged 21 to 64; 2. People who are no longer in education; 3. The unemployment rate is the number of unemployed people divided by the economically active population in that category. The economically active population is defined as those in employment plus those who are unemployed. Source: Reproduced from *Graduates in the labour market – 2012* (ONS, 2012).

By 2013 unemployment rates for graduates and for non-graduates were still above pre-recession levels. Recent graduates, those who graduated within five years of the 2012 Labour Force Survey (LFS), had a much higher unemployment rate than those who graduated longer ago (9% compared to 3%; ONS, 2013a). Non-graduates aged 21-30 (comparable in age to the recent graduate cohort) were the worst affected with an unemployment rate at just over 14% by 2013 (ONS, 2013a). This economic situation should be borne in mind when looking at the research findings presented in this thesis.

## 1.5 Definitions

The following main definitions are used in this thesis (see Section 3.3 for more detail). A **graduate** is usually a first-degree university graduate unless otherwise specified. Graduates who went on to get postgraduate qualifications at the time of the *Futuretrack* survey were excluded from the analysis. This restriction helped to focus on the effects of undergraduate education on labour market outcomes.

**SMEs** or **small and medium-sized businesses** were defined in line with UK and EU definitions as businesses employing fewer than 250 employees, to facilitate comparisons with other studies and SME statistics. Additional considerations of turnover or profit were not used here, primarily because the *Futuretrack* dataset does not contain data on business turnover or other financial indicators. Within SMEs, the following business size classification is used, in line with UK and EU definitions:

- **Micro businesses** are those employing fewer than ten employees.
- **Small businesses** are those employing between ten and 49 employees.
- **Medium-sized businesses** are those employing between 50 and 249 employees.
- **Large businesses** are those with more than 250 employees.

This classification is used to avoid grouping SMEs together into a homogeneous category, as micro and small businesses will have very different priorities and workplace dynamics compared to those with more employees, and medium-sized businesses tend to approximate large companies in terms of the division of labour.

This thesis in particular compares the experiences of graduates in small businesses with those in large businesses to see whether working in a small business makes a difference to graduates' use of knowledge and skills and their career development. The large business category is used as a reference group, but it is also a catch-all category and contains a wide range of businesses from those with several hundred employees to multinational corporations with over several thousand. As this research focused on SMEs, the large business category was left undifferentiated. A detailed investigation of graduate employment within the 'large' business group remains an issue for further research.

The terms business, company, firm, and employer are used interchangeably in this thesis to refer to a business.

## 1.6 Scope of the research and key assumptions

The data used in the analysis focuses on first-degree, UK-national graduates who, at the time of the survey, reported that they were employed in the private sector and that they were not self-employed. Furthermore, those who studied in overseas universities (17 people when the sample was restricted as above) were excluded to minimise the differences between different education systems. When the sample was restricted in this way, the number of

eligible respondents was 4,572. These restrictions were applied in order to avoid mixing together graduate and postgraduate qualifications, and employment in different economic sectors. Further details and justifications for the delimitation of the sample are discussed in Section 3.3.5.1. In the qualitative sample, graduates were selected from the sample as defined above, from the business and public service associate professional occupations (see Section 3.3.5.2).

Areas of inquiry related to, but beyond the scope of the thesis include issues of graduate recruitment by SMEs, graduates' decisions to work in SMEs, graduate entrepreneurship, salary information, and managerial perspectives on the employment of graduates in SMEs. Graduate recruitment by SMEs has been investigated at length in other research, and the *Futuretrack* data focused only on graduates. Graduates' decisions about wanting to work in SMEs specifically were not asked in the *Futuretrack* survey and were not asked in interviews as standard, although in some interviews graduates spontaneously explained why they wanted to work in small businesses in particular. Graduate entrepreneurship has also been investigated at length in other research, and although SMEs are an important area of entrepreneurial activity, this thread was not pursued here. Few *Futuretrack* graduates were self-employed, but interview accounts sometimes revealed that some had entrepreneurial aspirations. Whether experience of work in small business affects entrepreneurial aspirations could be investigated in further research. Graduates' salaries in relation to employer size were only briefly addressed in this thesis (Section 5.3.3), partly because there has been a lot of detailed research conducted on salaries in SMEs, and partly to focus on graduates' knowledge and skill use; however, the thesis findings can be used as a basis for further research incorporating salary information. Managerial perspectives have not been included in this thesis owing to the detailed focus on graduates. SME and large company managers could be consulted in future research, using the findings from this thesis as a basis for discussion (see Section 10.5).

## 1.7 Outline of the thesis

This thesis is organised as follows. Chapter 2 presents how this PhD research project is situated in the context of the post-Second World War expansion in higher education (Section 2.2) and the shift towards increasingly service-based 'post-industrial' economies and the related concept of the 'knowledge economy,' particularly characterised by the use of ICT and the resurgence of smaller businesses (Section 2.3). Associated with these shifts,

increased individual responsibility for career management, new types of 'graduate jobs' (Purcell and Elias, 2015) have implications for current graduate employment. Existing studies of graduates' knowledge and skill utilisation are reviewed (Section 2.4), and the potential of SMEs as 'new graduate employers' is reviewed in Section 2.5, including literature on knowledge and skill utilisation in small businesses. The main gaps in the literature are identified in Section 2.6.

Chapter 3 describes the research methodology in more detail, setting out the rationale for adopting a mixed-methods research approach (Section 3.2), explaining the data and definitions (Section 3.3), and discussing alternative approaches considered but not used (Section 3.4). The final sequential quantitative → qualitative research methodology is presented in detail in Section 3.5, including the advantages and disadvantages of using survey and interview data and the quantitative and qualitative methods. Ethical considerations are discussed in Section 3.7.

Chapter 4 leads into the quantitative phase of the research. An overview of graduate employment by employer size is presented in Chapter 5, including an analysis of the occupations, industries, undergraduate subjects studied and graduates' personal characteristics (Section 5.2). An analysis of whether graduates' values and preferences were related to employer size is presented in Section 5.3. The results are largely consistent with existing research in this area. Chapter 6 presents the results of whether employer size was associated with graduates' perceived use of skill utilisation, measured by the use of knowledge and skills developed on their undergraduate subject (Section 6.2), specific skills (Section 6.3), and job fit measured by qualifications required and perceived job 'appropriateness' (Section 6.4).

Chapter 7 leads into the qualitative phase of the research. Chapter 8 directly builds on the findings in Chapter 6, and presents complementary interview analysis focusing on graduates' perceptions of using knowledge and skills at work (Sections 8.2 and 8.3), whether other graduates were doing their type of work in the company (Section 8.4) and whether there were any knowledge or skills that the graduates thought that they did not have the opportunity to use (Section 8.5). Chapter 9 presents the interview findings of graduates' experiences of early career development, in terms of *taking* and *making* opportunities to take on additional responsibilities to develop their jobs (Section 9.2), the

organisational contexts that facilitated or impeded taking on these responsibilities (Section 9.3), and experiences of early career development (Section 9.4). Some graduates, most of whom were employed in small businesses at the time of the *Futuretrack* survey, had changed, or were about to change employer at the time of the interview. Whether these graduates thought that employment in a small company contributed to their skills and experience is discussed in Section 9.5.

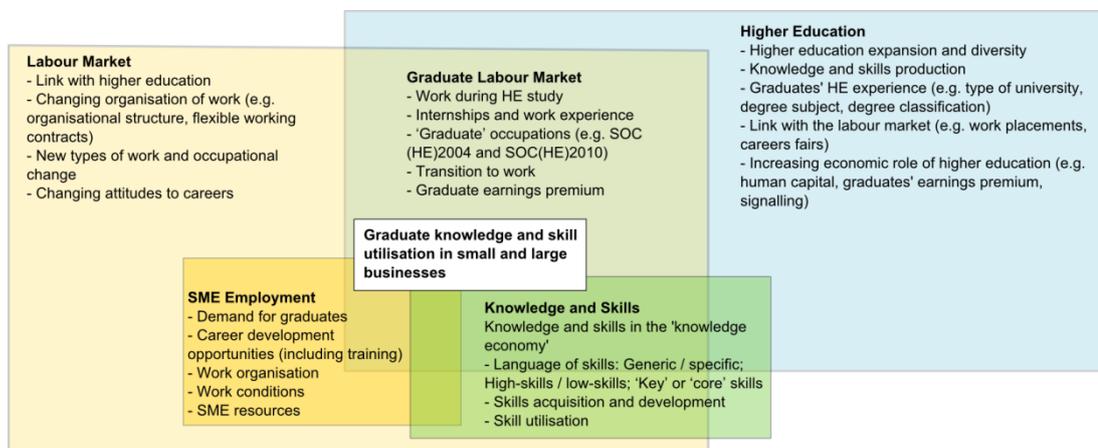
Chapter 10 draws together the main findings (Section 10.2), sets out the main contributions to knowledge, methodology, and empirical evidence (Section 10.3), and the implications for students and graduates, small business owners, university careers services, and policymakers (Section 10.4). The limitations and directions for further research are discussed in Section 10.5. The concluding statement is presented in Section 10.6.

## 2 Research issues

### 2.1 Introduction

This chapter outlines the main areas of research relevant to the investigation of graduates' use of knowledge and skills and their opportunities for career development in small and large businesses. This research problem is situated in the interaction of small firm research literature, specifically whether business size affects experience of work, and higher education and labour market literature, with a specific focus on skill use and career development (Figure 2.1).

Figure 2.1: Literature review strands



Note: The diagram represents the overlapping fields of research which fit into SMEs as graduate employers, in the context of the wider labour market, higher education and skills-related literature. Source: Created by the author.

The key strands of literature are summarised below: (1) *the changes in higher education*, which includes the expansion of higher education in the UK and globally, (2) *the graduate labour market*, especially the increasing proportion of graduates working outside areas of traditional graduate employment, as well as the changing nature of occupations; (3) the changes in *career development* (career theory), towards a more individually-driven construct rather than a monolithic organisational career; (4) *skill utilisation* from the economic and occupational psychological literature, which also includes graduate employment and *mismatch* (under-employment or over-employment); and (5) *small businesses* as new graduate employers, particularly paying attention to the long-running debate of whether business size affects the experience of work.

Specifically concerning graduates' early careers research, while some literature has focused on graduates' attitudes to employment in SMEs compared to large companies, there is very

little research comparing graduates' experience of work in small and in large businesses in *similar* kinds of jobs. It is this gap that this thesis set out to address, focusing on knowledge, skills, and opportunities for career development.

## 2.2 The changing relationship between higher education and the labour market

### 2.2.1 HE expansion and its implications

The mass expansion of the higher education (HE) system is the underlying force behind policy issues such as graduate employment in small businesses and graduate skill utilisation, and is a point for departure for this literature review. The role of universities underpins the issue of graduate employment in the context of an expanding HE system and is briefly addressed below. The UK HE sector, like those of other 'advanced industrial' and 'post-industrial societies,' underwent a large expansion after the Second World War, moving from an elite to a mass HE system and increasing the emphasis on specialist education (see Trow, 1973).<sup>3</sup> Trow's (1973) account echoes Weber's conceptualisation of the tension between the old educational ideal of the "cultivated man" and the new ideal of the "specialist" in the context of expanding bureaucratization in the public and private sectors (Weber, 1946, p. 243). The tension between knowledge production and education for its own sake on the one hand and generation of skilled employees for the labour market and contribution to the economy on the other is still present in current discourses about the role of higher education today (R. Anderson, 2010).

### 2.2.2 HE as preparation of graduates for work

The conflict between the roles of HE of creation of knowledge, cultivation of citizens, and preparing students for the world of work through developing their skills has intensified in recent years. The main roles of universities may be summarised as "preparing students for life as active citizens in a democratic society; preparing students for their future careers

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<sup>3</sup> Trow (1973) conceptualised three different Weberian 'ideal types' of HE systems – *elite*, *mass*, and *universal* – and discussed their main characteristics, including their social functions, summarised here. An elite HE system has a participation rate of 0-15% and functions to shape the "mind and character of [the] ruling class" and to prepare participants for elite roles in society, especially in government and in the learned professions (1973, p. 7). A mass HE system has a participation rate of 16-50% and functions to prepare participants for a wider variety of elite roles, including economic and technical ones, and to transmit the necessary skills for specific technical roles. (p. 8). A universal HE system has a participation rate of over 50% and functions as a vehicle to adapt the "whole population" to life in an "advanced industrial society" characterised by rapid social and technological change (p. 8).

and enabling their personal development; creating and maintaining a broad, advanced knowledge base; and stimulating research and innovation” (London Communiqué, 2007, pp. 1-2). However, while the Communiqué highlighted citizenship and knowledge, the main functions of universities that are currently dominating policy discourse in the UK are those of preparing students for work and engaging in research and development.<sup>4</sup> It is this relationship between higher education and the labour market that is the context for this thesis’s research question of graduate employment and skill utilisation.

The UK HE sector has grown from less than half a million students in HE in the 1960s,<sup>a</sup> to over one million in 1990/91,<sup>b</sup> to over two million in 2000/01,<sup>b</sup> and to two and a half million in 2010/11.<sup>c5</sup> As part of this growth, new HE institutions (HEIs) were established, and the HE sector also became more varied and more vocational.<sup>6</sup> The current UK HE system may be viewed as situated between Trow’s (1973) mass and universal HE systems, with over 45% participation,<sup>7</sup> and an emphasis on developing technical skills and building a better civil society. The UK HE sector is a diverse field comprising the pre-mass-expansion universities and the ‘new’ universities.<sup>8</sup> In addition, the HE sector has started to offer increasing provision of part-time and distance learning courses. As part of the vocational emphasis in higher education, universities are providing sandwich courses and other

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<sup>4</sup> A quick analysis of the titles of BIS Research and analysis, policy papers and independent reports between 2010 and 2014 showed that citizenship did not feature, skills and research excellence were mentioned more than once, and just one paper focused on student learning.

<sup>5</sup> Sources: a – Blanden and Machin (2004, p. 230); b – Elias and Purcell (2004, p. 60); c – HESA (2013b).

<sup>6</sup> Following the Robbins report (1963) and Crosland’s (1965) Binary Policy in Higher Education, Binary Policy was abolished following the 1992 Further and Higher Education Act, after which the Polytechnics converted to university status. See also Williams (1985).

<sup>7</sup> According to the Higher Education Initial Participation Rate (HEIPR), (BIS, 2013). The HEIPR “roughly equates to the probability that a seventeen year-old will participate in higher education by age thirty given the age specific participation rates. [...] The HEIPR counts English-domiciled 17-30 year old higher education students. [...] if they participate for at least six months on a course expected to last for at least six months, except that students are not counted if they have participated in Higher Education previously for at least six months.” (BIS, 2013, p. 9, para. 13 and 15).

<sup>8</sup> Pre-expansion: the ‘ancient’ (pre-1800) universities, the 19<sup>th</sup> Century universities, and the pre-Second World War ‘Red Brick Universities’; post-expansion: the post-Robbins ‘Plate Glass’ universities, the Open University, the post-1992 universities and a number of private universities (the ‘Independent Universities Group’). Interestingly, the Robbins Report sought to protect the elite aspects of university education, focusing on promoting the “general powers of the mind” and producing “not mere specialists, but rather cultivated men and women” (p.6, para. 26). However, following further expansion in the 1980s and 1990s this vision became increasingly difficult to sustain financially (R. Anderson, 2010).

project placements, employability skills training, and dedicated careers services centres.<sup>9</sup> This is the environment which today's graduates and employers must navigate in order to receive a higher education and employ the 'best' person for the job respectively. The variety of HE provision has made it more difficult for employers to navigate the increasingly diversifying pool of graduates for recruitment (Purcell et al., 2002), and is discussed further in Section 2.3. For graduates, as well as the increasing diversity of HE providers, changes in HE funding also affect their educational and employment decisions, as discussed in the next section.

### 2.2.3 HE as an investment for improved employment prospects

Another major consequence of the UK shift to a mass HE system has been the change in HE financing, which has further affected the relationship between HE and graduate employment. The effects of HE financing reforms have been more fully discussed elsewhere (e.g. Hillman, 2013; Wyness, 2010) and are only summarised here. As the HE sector expanded, state-backed HE funding came under increasing pressure, and *cost-sharing* measures – where a part of the cost of HE is borne by the students, or their parents/guardians (see Johnstone, 2004) – were introduced.

One rationale that has been used to support the student contribution to the cost of HE was that graduates were more likely to acquire higher earnings over their working lives than non-graduates (the *graduate earnings premium*), which has its basis in the human capital framework.<sup>10</sup> Private returns to higher education are usually measured in terms of the difference in the lifetime earnings of those with and those without higher education (e.g. Psacharopoulos and Patrinos, 2004), but this approach often omits non-pecuniary private benefits to HE as well as the monetary and non-monetary social benefits to HE: although the human capital framework can provide a basis for accounting for these wider benefits,

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<sup>9</sup> The origin of the modern university careers service centre may be traced back to the Heyworth Report (1964), which recommended transforming university appointments boards to careers services to increase the quality of careers advice to students (Watts, 1997).

<sup>10</sup> This rationale developed in the context of the 'individualisation' discourse of HE – underpinned by theoretical insights such as the *human capital* framework (Becker, 1964), especially its narrow application: measuring individual returns to HE in terms of wages only; taking an incomplete consideration of social returns (see Bloom et al., 2006); ignoring fundamental asymmetries such as class in education and the labour market (Bowles and Gintis, 1975 (note that a similar critique has been made of the 'employability' discourse, see Section 9.3.4)), and the *sorting* (signalling / screening) hypothesis (Stiglitz, 1975; Arrow, 1973; Spence, 1973) which makes a simplifying assumption that education has no intrinsic value (the authors also point out that signalling/screening is not the only purpose of education).

they are often difficult to measure.<sup>11</sup> In the UK, the consequences of introducing student contributions to HE following the Dearing report (1997) were that students entering HE in 1998 had to pay tuition fees of £1,000, which increased to £3,000 in 2006/07, and, following the Browne report (2010) to £9,000 in 2012.<sup>12</sup>

#### 2.2.4 Changes in HE as rationale for promoting graduate employment in SMEs

While it has been noted that public expenditure on HE is justified by the numerous public and social benefits associated with HE, private benefits continue to top policy discourse and to rationalise the cost-sharing approach. The UK government presents university education as a valuable investment for prospective students through highlighting the skills that the students will acquire and the employability outcomes (earnings prospects) of the courses they will study (e.g. Browne, 2010, p. 31). However, as discussed in the next few sections, the increasing competition for ‘traditional’ graduate jobs and the differences in the disaggregated earnings premium (by degree subject and university type; see, for example, Purcell et al., 2013) increase the pressure on graduates to find appropriate employment after completing university. This forms part of the underlying rationale for government to encourage graduate employment in SMEs. In addition, the labour market facing today’s graduates is characterised by particular demands for skills and knowledge, as discussed below.

### 2.3 Knowledge, skills, and HE in the UK graduate labour market

The government policy and media emphasis on graduates’ knowledge and skills (but mostly skills) needs to be situated in the broader UK preoccupation with skilled labour. This preoccupation is related to the long-standing concern with low economic competitiveness and the view that Britain was “trapped in a low skill equilibrium” (Finegold and Soskice, 1988, p. 22) in the context of the increasing importance of skills, knowledge and

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<sup>11</sup> Psacharopoulos has measured the ‘social’ returns to HE in his work, defining them “on the basis of private benefits but total (private plus external) costs” (Psacharopoulos and Patrinos, 2004, p. 112). Using this definition he found that private returns to HE were higher than social returns, “because of the public subsidization of education and the fact that typical social rate of return estimates are not able to include social benefits” (2004, p. 112) – the authors later argued that studies attempting to measure ‘true’ social benefits of HE tend to give wide-ranging estimates because these benefits are difficult to identify and measure (p. 117).

<sup>12</sup> Although student contributions are means-tested so that a proportion of students from low-income households are exempt, debt is only repayable after a certain salary threshold is met (£15,000 p.a. for those graduating between 2005 and 2012), and any outstanding debt 25 years after repayment is cancelled, student debt accumulating from the £3,000 fee level was been found to affect graduates’ decisions to undertake further study, with the effect being more pronounced for mature graduates aged 26 and over at the time of starting university (Purcell et al., 2013).

information in the economy and society (Leitch Review, 2006).<sup>13</sup> The economies of most advanced industrial societies have experienced a post-Second World War shift from mass manufacturing to service activities. In the view of some scholars, this shift, together with the growth in information and communication technologies (ICT), led to the rise of the ‘knowledge economy’ (Bell, 1977; Drucker, 1969; Machlup, 1962)<sup>14</sup> which increased demand for workers’ knowledge and skills (although the extent to which this has occurred has been debated – see below). Whether the knowledge economy is qualitatively different form of social organisation or merely the ‘informatisation’ of existing social relations is a debated issue which has been explored elsewhere (e.g. Webster, 2006).<sup>15</sup> For the purposes of this thesis, the term ‘knowledge economy’ is used in an heuristic way to describe the current UK labour market. The following section summarises the main ways in which knowledge and skills in the labour market have been reassessed in the context of the knowledge economy, and draws out the main implications for graduate employment.

### 2.3.1 The knowledge economy and labour market polarisation

The knowledge economy is usually thought of the production of high-value knowledge-intensive goods and services. For example, the OECD defined *knowledge-based economies* as those “directly based on the production, distribution and use of knowledge and information” (OECD, 1996, p. 7).<sup>16</sup> However, it is far from evident that the economic shift to service activities has produced a substantial knowledge economy sector involving high-skilled work. Several conceptualisations of knowledge work have found that the proportion of high-level skilled work involving a large proportion of knowledge tasks accounts for a minority of jobs. Estimates have ranged from 20% in the US in 1990 (Reich’s (1992)

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<sup>13</sup> It has been well-documented that UK employer demand for, and to some extent, supply of, skills, has been low compared to other industrialised countries (e.g. Mason, 2004; Keep and Mayhew, 1999; Prais, 1995; Finegold and Soskice, 1988).

<sup>14</sup> The terms *knowledge economy* and *information society* have been used in related and interchangeable ways; however, the former term refers to the economic use of and production of knowledge and the latter on the codification of knowledge and its transmission through ICT.

<sup>15</sup> Webster was more sympathetic towards the ‘continuities’ approach rather than to radical difference. Webster also argued that theoretical knowledge (“abstract, generalisable and codified,” (2006, p. 29)) had become a “defining feature of contemporary life” (p. 31), supporting Thompson et al.’s (2001) point about the primacy of explicit knowledge in knowledge work.

<sup>16</sup> Knowledge economy has also included a focus on the role of theoretical knowledge in innovation; whether new jobs and new organisation of work are knowledge-intensive; and factors affecting within-firm learning and innovation (Powell and Snellman, 2004).

*symbolic analysts*) to 30% in the UK in 2009 (Brinkley et al.'s (2009) jobs requiring *high knowledge content*).<sup>17</sup>

While there are pockets of high-skill activity in the UK at sub-regional levels (e.g. Froy, 2013; Green, 2012), and some high-skill industry sectors (such as advanced manufacturing, aerospace and automotive sectors (e.g. Feloy et al., 2013)), the majority of employment growth has been in low-level service work where employees may work with knowledge or use computers, but perform routine tasks and require little training (Thompson et al., 2001). This, together with mid-skill level jobs being replaced by a small proportion of high skill level jobs at the top end (SOC major groups 3 and above) and a large number of low or unskilled jobs at the bottom end of the labour market (SOC major groups 7 and below) has been referred to as labour market *polarisation* or *segmentation* (e.g. Eurofound, 2013; Brown et al., 2001; Gallie, 1994). Research has also highlighted fragmentation *within*, as well as between, occupations, which should also be taken into account (Anderson, 2009, see also section 2.3.3.2 regarding the associate professional occupations in particular). Thus, the labour market facing today's graduates is very different from that facing those graduates who completed their degrees prior to the mass expansion of HE and prior to pronounced occupational segmentation. Partly as a consequence of the graduate supply expanding faster than 'traditional' areas of graduate employment, graduates' employment destinations have broadened such that some worked in 'traditional' jobs, others found employment in 'emerging' graduate occupations, and others still in non-graduate jobs (Okay-Somerville and Scholarios, 2013; Brown et al., 2011; HECSU, 2010).

### 2.3.2 Changing notions of career development

Together with the labour market changes discussed above, the concept of the organisational career has changed too. Career development can be loosely understood as the dynamic process by which individuals and organisations manage progression in learning and work (Watts, 2004). Although career development is often viewed as a joint responsibility between the individual and the organisation, the emphasis on which party is more significant has changed over time (Baruch, 2006). Organisations tended to be regarded as more important in the 'traditional' career development route, taking place in

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<sup>17</sup> See also Brown et al.'s (2011, pp. 80-81) classification of knowledge workers into *developers* (creating / extending knowledge), *demonstrators* (work with existing knowledge with a focus on interpersonal skills), and *drones* (monotonous work such as data entry or call centre jobs), which are roughly analogous to the high- moderate- and low-knowledge content jobs.

one or two hierarchical organisation in a linear progression over a working life (e.g. Whyte's (1956) "organization man"). In contrast, alongside the post-Second World War economic restructuring away from manufacturing and towards services, organisations became flatter and leaner, and careers have been reconceptualised as *protean* (Hall, 1976 in: Hall, 2004) or *boundaryless* (Arthur and Rousseau, 1996), with an emphasis on the plurality of career pathways and individual responsibility for career development. Hall defined protean careers as: "self-determined, driven by personal values rather than organizational rewards, and serving the whole person, family, and 'life purpose'" (2004: 2), while Arthur and Rousseau (1996) conceptualised boundaryless careers in contrast to traditional career development routes associated with stable employment in a single setting, focusing instead on dynamic employment in the context of industrial restructuring.

While some scholars have differentiated between career development, management, and advancement (Lent and Brown, 2012), in this thesis career development is used broadly. Lent and Brown (2012) distinguished between *career advancement* (a process in which individuals progressively improve their career over time), and *career management* (a process in which individuals actively direct their own career, adjusting to new opportunities and being proactive (note that this definition of career management is similar to that of career adaptability (e.g. Bimrose et al., 2011; Savickas, 1997)), while defining *career development* as a "continuous stream of career-relevant events" that are not necessarily positive or a result of individual agency (Lent and Brown, 2012, p. 10). However, career advancement and management can be viewed as aspects of career development, and thus career development is the broad term used in this thesis.

It has been argued that graduates in particular faced less clear promotion and career development pathways in flatter organisations and needed to be flexible and self-reliant (possessing skills such as confidence, self-awareness, negotiation, action-planning, and networking) to accommodate this change (Edwards and Wajcman, 2005; Mayrhofer et al., 2005; King, 2004; Harvey et al., 1997; Hawkins and Winter, 1996). For graduates employed in SMEs, self-reliance is especially important because SMEs are perceived to be less likely than large companies to have formal career advancement pathways and internal labour markets to facilitate promotion (Belfield, 1999; see also Section 2.5.2).

Despite the emphasis on individuals' responsibilities to manage their own careers, the role of organisations in helping employees develop their careers should not be understated – organisations can enable employees to take charge of their career development by providing them with a supportive environment and investing in their skills (Baruch, 2006). This point will be returned to in Chapter 9 regarding graduates' experiences of career development in small and in large businesses.

### 2.3.3 Towards a re-evaluation of 'graduate jobs'?

Some research has suggested that the increase in the proportion of graduates working outside traditional areas of graduate employment, changes in technology and the labour market, and the shift in the definitions of skill towards encompassing interpersonal abilities, have *redefined* the concept of 'graduate' jobs (Purcell and Elias, 2015; Elias and Purcell, 2004a; 2004b) although the degree to which graduate jobs have been redefined has been questioned (see, for example, Okay-Somerville and Scholarios, 2013; Chillas, 2010). Elias and Purcell's analyses have attempted to categorise jobs into different types of graduate work (and non-graduate work) taking into account the increase in the proportion of graduates and the different kinds of skills and knowledge used. Two new classifications of graduate jobs were developed, the first based on SOC 2000 (SOC(HE) 2004, (Elias and Purcell, 2004a; 2004b) and the second based on SOC 2010 (SOC(HE) 2010, Purcell and Elias, 2015), using a more HE-skills and knowledge-based research approach. These classifications are important to consider, because they can be used as a basis for evaluating whether graduates employed in SMEs make use of their skills and knowledge. The classifications of graduate jobs and the implications for associate professional occupations are discussed in more detail below.

#### 2.3.3.1 SOC(HE) 2004 and 2010

The SOC(HE) 2004 graduate job typology of *traditional, modern, new, and niche* graduate jobs (Elias and Purcell, 2004a; 2004b),<sup>18</sup> based on the proportions of graduate employees, has been widely used in research and policy, but was found to be flawed and ultimately

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<sup>18</sup> *Traditional* and *modern* graduate occupations consist of the established (pre-Robbins expansion) and the newer (post-expansion) professions respectively, such as solicitors and biochemists for the former and software professionals, journalists and investment bankers for the latter. The *modern* graduate occupations are modelled on the traditional occupations in terms of job, and the vast majority of traditional and modern occupations are located in SOC 2000 major group 2. *New* graduate occupations primarily involve those where the route into the job has recently become through an undergraduate degree, such as marketing managers and housing officers. Finally, *niche* graduate occupations are specialist occupations which exist in a predominantly non-graduate area but require HE knowledge and skills, e.g. recruitment consultants.

rejected by the authors in favour of a better, more useful, and well-founded successor – the SOC(HE) 2010 (Purcell and Elias, 2015). The conceptual basis of SOC(HE) 2010 is rooted in the development of knowledge in higher education, and its application in the labour market, which makes it especially useful in application to jobs in the knowledge economy. SOC(HE) 2010 classifies graduate jobs into three types: *expert*, *orchestrator*, and *communicator* graduate jobs, based on the extent of using three main ‘clusters of competence’ (*expertise*, *strategic skills* and *interactive skills*). The new classification used insights derived from interviews conducted in 2002 with the 1995 cohort of graduates (*Seven Years On*, (Purcell and Elias, 2004)) about the respondents’ jobs, including their main tasks, responsibilities, employment relations, and “the knowledge and skills required in order to carry out their jobs effectively” (Purcell and Elias, 2015, p. 7 in manuscript).

These SOC(HE) 2010 classification categories are similar to Brown et al.’s (2011) *developers* (particularly *experts*) and *demonstrators* (particularly *communicators*), and to Reich’s (1992) *symbolic analysts*, but, in contrast to these classifications, Purcell and Elias (2015) emphasise the role of HE in the development of knowledge and skills. With reference to the classification of knowledge workers in Section 2.3.1, *expert* occupations are knowledge-intensive, and require the use of specialist HE knowledge and high-level skills (e.g. chemical scientists, chartered surveyors) – graduates are typically recruited to these occupations on the basis of possessing these specialist knowledge and skills; *orchestrator* occupations require the gathering and use of knowledge and typically possessing experience in the occupation to evaluate information and make decisions (e.g. managers and directors, officers in the armed forces);<sup>19</sup> and *communicator* occupations use interpersonal, creative or high-level knowledge and skills, predominantly focusing on manipulating information and communicating it to different groups of people (e.g. journalists, marketing associate professionals).

However, despite this new classifications of graduate jobs, it is not clear to what extent, if at all, the content of the jobs has changed. For example, the associate professional occupations formed the second-largest group of jobs graduates were doing, after the professional occupations (Purcell et al., 2013). The proportion of graduates compared to all

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<sup>19</sup> Purcell and Elias (2015) found that, despite *orchestrator* roles being unlikely destinations for recent graduates because of the emphasis on experience in the job, some recent graduates were able to access these positions because of the strength of their knowledge and skills and their HE qualifications.

employees has increased substantially in most associate professional occupations using both SOC(HE) 2004 and SOC(HE) 2010, but the extent to which the jobs have changed to make use of graduates' skills has been questioned (Okay-Somerville and Scholarios, 2013; Rogers and Waters, 2001). This issue is discussed further in the section below.

### 2.3.3.2 *The status of the associate professional occupations*

Whether the associate professional occupations can be called 'graduate-level' is a hotly debated issue (Okay-Somerville and Scholarios, 2013). These occupations are among some of the fastest-growing occupational groups (sub-group differences notwithstanding, Wilson et al., 2014). While Rogers and Waters (2001) found that graduates were increasingly being recruited into these occupations, they also noted that a degree was rarely specified as a requirement (but this varied between different sub-minor occupational groups). In contrast, *Futuretrack* (2013) data showed that 70% of first-degree graduates employed in the associate professional occupations reported that their job required either a specific or a general degree. This suggests that employers in the associate professional occupations may be more likely to require a degree now than they were in the past.<sup>20</sup>

Different employers may ask for degrees as a qualification requirement for different reasons. For example, Purcell et al. (2002) found that employers who recruited for specialist professional and technical occupations tended to explicitly recruit graduates for their specialist knowledge and expertise, whereas employers recruiting for more general occupations tended to use the degree as a proxy for employee potential, and tended to emphasise competences rather than qualifications in their recruitment strategies.

Other within-occupation differences have also been found. For example in terms of wages, 'good' jobs have become polarised between the highest earners (the 'best') and the 'rest,' which have become more like mid-level jobs (Holmes and Mayhew, 2012). Even within narrowly defined occupations, for example within business and public service associate professional occupations, distinct occupation clusters have been identified (*traditional*, *transitional*, and *generic*), which had different implications for skill utilisation (Rogers and Waters, 2001). All three clusters required high levels of generic skills and personal

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<sup>20</sup> The statistics are not strictly comparable: Rogers and Waters (2001) looked at whether employers demanded a degree for the job, whereas the *Futuretrack* data looked at whether the graduate respondents reported that their job required a degree ("Were any of the following qualifications required for this job?").

attributes, but the levels of technical skills varied: high for traditional, medium-level for transitional, and low-level for generic associate professionals. For the last two groups, generic skills and personal attributes were more important than technical skills. Examples of occupations for traditional, transitional, and generic associate professionals included market researchers, recruitment consultants, and estate agents respectively (Rogers and Waters, 2001), which are also classed as communicator, expert, and non-graduate occupations using SOC(HE) 2010.

Evidence of fragmentation of jobs has also been found for occupations at the unit group level, for example for joiners, physiotherapists, and policing occupations (P. Anderson, 2010). Among physiotherapists, a group of occupations which is viewed as professionalising, which has recently adopted degrees as an entry route, and which is defined by Purcell and Elias (2015) as an *expert* type of graduate job, fragmentation of jobs into few elite and many generic physiotherapist jobs has been observed in practice with the latter being associated with deskilling (P. Anderson, 2010). Further evidence suggests that, despite the upgrading of the physiotherapist occupations from associate professional to professional between SOC 2000 and SOC 2010, the workplace skills have not changed significantly (Anderson, 2009 in: James et al., 2013).

Thus, graduates face an increasingly segmented labour market, and may find themselves in jobs which do not make use of their knowledge and skills. These graduate employment outcomes may be viewed either as *mismatching* (that graduates in non-graduate jobs are overqualified), or as different *degrees of fit*, reflecting the variety in the supply of and demand for graduates, not all of which is high-skilled, high-quality or high-salary (Chillas, 2010). The associate professional occupations are currently a ‘battle ground’ for determining whether jobs have changed to become ‘graduate-level’, which makes it an important area for analysis in this thesis.

#### **2.3.4 Are graduates able to use their skills at work?**

The previous sections highlighted the implications of the changing labour market and the emergence of the knowledge economy, graduates taking more individual responsibility for their careers, and graduates increasingly being employed in ‘non-traditional’ jobs, for recent graduates. In this context, small firms have been identified as potential graduate employers given the limited growth of ‘traditional’ graduate occupations. The SOC(HE) 2010 classification of graduate jobs suggests that some non-traditional occupations have

become or are becoming ‘graduatised’ – employing a higher proportion of graduates *and* making use of graduates’ skills, although in different ways from traditional graduate jobs. The central question is: given the increase in the proportion of graduates working in non-traditional (non-professional) occupations, are graduates able to use their skills in their work or are they underemployed in their jobs, and does this differ between small and large businesses? The ways in which skill use is conceptualised and measured can be loosely termed as *skill utilisation*, and is discussed in Section 2.4. Graduate employment and skill utilisation in SMEs and in small businesses in particular is discussed in Section 2.5.

## 2.4 Graduates’ skill utilisation

This section discusses the definitions of skill utilisation, definitions of knowledge and skills possessed by graduates, and the evidence for graduates’ skill utilisation in the labour market. As will be discussed, the main issues surrounding existing research are that skill underutilisation has been shown to be negatively associated with job satisfaction and pay, and it does not appear to be merely a transient issue resulting from labour market adjustment (see Section 2.4.3). However, most research has focused on measuring skill utilisation using skill matching-based definitions, ignoring the role of the utilisation of knowledge and the capacity to develop skills at work further. Furthermore, and of central importance to this research, almost no thorough systematic analysis has been carried out which investigates whether graduates have different opportunities for skill utilisation in small businesses and in large businesses when employed in a similar type of occupation and industry sector.

### 2.4.1 Definitions of skill utilisation

Skill utilisation is a multi-dimensional context which can be viewed as a way of capturing whether people are able to use their skills at work. Skill *underutilisation* is related to the concepts of *underemployment*, *overeducation* and *overqualification* which typically focus on matching in the labour market (i.e. whether the employee possesses a higher qualification or level of education than is formally required for the job, see McKee-Ryan and Harvey (2011) for a review). This thesis uses the term *underemployment* to refer to overeducation and overqualification for consistency.<sup>21</sup> However, qualification-matching measures often do not examine the skills that workers use in their jobs and can omit the

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<sup>21</sup> Underemployment as used here does not refer to the Bell and Blanchflower (2011) definition of workers supplying fewer hours of work than they would like.

skill changes taking place within occupations (Chevalier, 2003). Skill utilisation, however, specifically focuses on the extent to which employees are able to make use of their skills and is typically defined in relation to high-performance work, the match between skills possessed by the employee and required for the job, and the opportunity to use and develop skills, as discussed below.

#### 2.4.1.1 HPW-based definitions

Although no one established definition of skill utilisation exists (Scottish Government, 2008), it has been defined and operationalised in different ways in different studies. The first type of definition is related to the concept of high performance working (HPW): businesses making use of skills in the most effective way possible to maximise business performance (e.g. Payne, 2013; SQW Consulting, 2010). The implications of this definition are that in workplaces where HPW practices are adopted, skill utilisation will be high.<sup>22</sup>

However, using HPW as the central concept for the definition and measurement of effective skill utilisation is problematic, first, because of definitional and measurement issues relating to aspects of HPW, and second, because of HPW's emphasis on business performance rather than on employees (Payne, 2013). For these reasons, the HPW-based definition will not be adopted in this thesis. However, the framework for the contexts in which skill utilisation occurs, such as the *critical success factors* (including leadership, culture, communication, and good HR practices), and the factors *triggering, delivering, and enabling* effective skill utilisation (Skills Australia, 2012), is useful to consider when looking at the interaction between the organisational environment and graduates' opportunities to use their knowledge and skills.

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<sup>22</sup> HPW systems are theoretically grounded in human resources management (HRM) literature regarding strategic management of human capital resources to yield competitive advantage (see also Section 2.3.1). HPW systems play a "strategic role; first as a resource to support the development of core competencies, and second as an essential ingredient for effective strategy implementation" (Becker and Huselid, 1998, p. 57). In policy terms, HPW has been defined as "a *general approach* to managing organisations that aims to stimulate more effective employee involvement and commitment to achieve high levels of performance" (Belt and Giles, 2009, p. 17, [emphasis in original]). This definition includes aspects of HRM, work organisation, employment relations, management and leadership, and organisational development. The HPW practices adopted in workplaces will be context-specific.

#### 2.4.1.2 Match-based definitions

The second type of skill utilisation definition is employee-focused, and is based on the (mis)match between the skills employees have and the skills they are required to possess for their jobs (e.g. Warhurst and Findlay, 2012). The implications are that where employees lack the skills to do their jobs they are *overemployed* and need to develop their skills through education or training (i.e. ‘use of better skills’). Conversely, where employees have more skills than are required for their jobs, they will be *underemployed* unless their skills can somehow be put to use (i.e. ‘better use of skills,’ Warhurst and Findlay, 2012). Where employees’ skills are matched with the job requirements, there is effective skill utilisation. In a similar vein, Payne (2013) outlined ways in which skill utilisation could be measured and evaluated, for example through looking at the proportions of workers who have the opportunity to deploy their skills and capabilities in jobs; whether the skill set they have is appropriate for the job; qualifications required for the job; opportunities for training; discretion over tasks, standards and pace of work, and other associated measures of job autonomy; and learning-intensive jobs and the nature of the organisation of work.

Match-based definitions of skill utilisation have the advantage over HPW-based definitions because they focus directly on employees’ skills (usually measured through self-reported proficiencies in certain skills or through qualification / years of education / duration of training). The main limitations of the match-based definitions are that, if effective skill utilisation is a desirable outcome in itself, then in jobs where employees’ skills are matched there is no incentive to develop skills further built into the basic definition. Moreover, match-based definitions omit the dynamic and interactive dimensions of skill utilisation: what is it that makes some people able to use their skills in some environments but not in others?

#### 2.4.1.3 Opportunity for skill use and development definitions

A related concept, *opportunity for skill use*, has been explored in organisational psychology literature (Warr, 1994; 1990; 1987). The main difference between this concept and skill utilisation as defined above is that opportunity for skill use includes the potential to develop new skills as well as the opportunity to make use of existing ones (Warr, 1987, p. 4). For this reason, opportunity for skill use is a more useful concept to adopt when investigating graduate employment in small businesses because it includes the possibility for analysing career prospects and adds another dimension to graduates’ experiences of using skills. In this way, Payne’s (2013) dimension of the learning-intensive job as an aspect

of skill utilisation is similar to Warr’s construct, however, opportunity for skill use places more emphasis on the employee’s potential to develop skills rather than on the nature of job design. The way in which these concepts have been operationalised with respect to graduate employment is discussed in more detail in Section 2.4.3, Section 2.5, and in the Methodology chapter, Section 3.3.6.

#### **2.4.1.4 Critiques of skill utilisation**

Several critiques have been applied to the skill utilisation construct: how jobs might be changed to make more use of skills, how to distinguish between employees’ general skills and the skills used at work, and accounting for the use and development of knowledge and skills. These critiques are briefly discussed below.

It has been well-documented that UK employer demand for, and to some extent, supply of, skills, has been low compared to other industrialised countries, and there has been evidence of labour market segmentation (see Section 2.3.1). Increasing educational attainment, such as raising the compulsory schooling age to 18, and increasing participation in higher education may have addressed some of the issues relating to skill supply, although there is still a substantial proportion of the working-age population with no formal qualifications (15% in 2011, UK Census, (ONS, 2014b)). In this context, there is little promise that there will be any change in jobs where employees are underemployed to make better use of employees’ skills.

A more fundamental critique of both HPW and matching definitions of skill utilisation is that they do not make the distinction between employees’ skills in general and the skills they use at work (Warhurst and Findlay, 2012). One argument against treating education solely in an instrumentalist way as the means of developing skills for the labour market is that people value their education in itself.<sup>23</sup> It can be very difficult, if not impossible, to separate skill development from skill use at work: it may be that skills required for the job is just a subset of a broader set of skills which individuals possess and develop, but which cannot be obtained in isolation.

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<sup>23</sup> Some of the graduates I spoke to in interviews mentioned that they had certain skills that that they did not want to use at work, but rather deployed in other contexts (see Section 8.5.1).

There is also limited information about the processes through which effective knowledge and skill utilisation occurs, and the effect on employees' careers. Scottish and Australian skill utilisation government frameworks listed practices through which skill utilisation can be delivered. These practices included employee engagement and job design, workplace learning and other aspects of organisational culture. However, the frameworks did not fully explain how these practices affect skill utilisation, and the Australian Government framework cautioned that the links between skill utilisation and outcomes such as improved job satisfaction may not always be positive (Skills Australia, 2011).

Although skill utilisation has been defined in numerous ways, this thesis focuses on graduates' experiences of skill use in a work-specific context looking at self-reported skill and knowledge use, frequency of skill use, and job matching scores.<sup>24</sup> The opportunity for developing skills is also captured through interview questions relating to career development, which were not included in the *Futuretrack* survey. It is important to note that graduates' skill utilisation is not particularly insightful in itself: for example a recent graduate employed in a company with effective skill utilisation (in terms of matching) but with no opportunity for career development is not necessarily in a positive situation. Therefore, it is useful to consider the potential to develop knowledge and skills that will positively contribute to graduates' career prospects (Arnold, 1994, p. 367). The link with career prospects is also useful in providing additional information to the nebulous concept of 'skills' discussed below.

## 2.4.2 Defining graduates' knowledge and skills

The concepts of skills and knowledge have been used extensively in the literature reviewed in this Chapter, particularly in SOC(HE) 2004 and SOC(HE) 2010 graduate job classifications described in Section 2.3.3.1 and as the underlying constructs in skill utilisation. This Section summarises the main approaches to defining and measuring knowledge and skills, and the problems associated with these approaches.

### 2.4.2.1 Knowledge

Knowledge as a concept is difficult to define without a context. A distinction is often made between *tacit* knowledge ('we can know more than what we can tell,' Polanyi, 1966a, p. 4),

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<sup>24</sup> *Futuretrack* data about the work context is only available as reported by graduates rather than reported by the organisation.

and *explicit* knowledge – to extend the quotation, when we can tell what we know. Tacit knowledge is arguably the foundation of all human knowledge:

*While tacit knowledge can be possessed by itself, explicit knowledge must rely on being tacitly understood and applied. Hence all knowledge is either tacit or rooted in tacit knowledge. A wholly explicit knowledge is unthinkable.* (Polanyi, 1966b, p. 7, [emphases in original])<sup>25</sup>

Tacit and explicit knowledge in organisations have often been interpreted as intangible resources or as core competences which are difficult to transfer or to imitate, which improve the competitive advantage of the company that possesses them (e.g. Hall, 1992; Prahalad and Hamel, 1990). However, the role of tacit knowledge in knowledge work is often overlooked in favour of more theoretical, technical and explicit knowledge (Thompson et al., 2001) – possibly because these kinds of knowledge are easier to identify, quantify, and measure.

Relating to HE, knowledge has been defined as the “theoretical or practical understanding and possession of information” (Elias and Purcell, 2015, p. 8 in manuscript). Graduates’ knowledge can be conceptualised as consisting of the explicit knowledge developed in their various courses of their university degree study and other explicit knowledge gained through formal ways, and the tacit knowledge of their experiences in university, work placements, and other spheres of life.

#### 2.4.2.2 Skills

Skills, in both general and academic terms, cover many meanings which vary across time and social contexts (see for example, Clarke and Winch, 2006; Grugulis et al., 2004; Attewell, 1990). Some definitions of skill conceptualise it as a type of knowledge, for example Polanyi (1966b, p. 4) compared tacit knowledge to possessing a skill. Other definitions make a distinction between knowledge and skills and focus on outcome-based

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<sup>25</sup> Further distinctions between the types of tacit knowledge can be made. Collins (2010, p. 2) differentiated between *relational tacit knowledge* (“a matter of how particular people relate to each other,” p. 86), *somatic tacit knowledge* (knowledge in the physical human body and brain) and *collective tacit knowledge* (knowledge “embodied” in society). Collins argued that some tacit knowledge could be made explicit through elaboration, transformation, mechanization (mimicking human action), and explanation (scientific explanation), and that the concepts of tacit and explicit knowledge were mutually self-reinforcing.

measures, for example Jessup (1991, p. 121) distinguished between skills, which can be demonstrated through their application in practice, and knowledge (as cognitive structures such as concepts and theories), which underpins “competent performance,” but can only be elicited through more abstract means.

However, Jessup emphasised that the distinction between knowledge and skills is not necessarily so clear-cut, particularly in the case of ‘cognitive’ skills (1991, p. 121). Similarly, Keep and Mayhew (1999) have pointed out that over the 1990s the UK experienced a shift in the conceptualisation of skills from the technical to the interpersonal, which further merges skills with knowledge. In current employment research literature, frequently adopted definitions of skill include “expertise, ability, or competence” (Brown et al., 2001, p. 23) or “personal qualities” (Green, 2013) grounded in the context of undertaking of specific activities or productive work, connected with training and development.

Graduates’ skills are usually measured by ratings, either by self or by others, of skills developed at university and/or skills required by employers, usually from a list compiled by researchers (e.g. Schomburg and Teichler, 2006; Nabi and Bagley, 1999), but there are several problems associated with this approach. In light of the expansion of HE and a greater association of HE with the labour market, certain groups of skills have started to feature prominently in research and policy. High-level skills that are often viewed as being developed at university include “problem-solving, critical assessment of evidence, logical thinking, theoretical development and creativity” (Purcell and Elias, 2015, p. 9 in manuscript),<sup>26</sup> but these skills could also be developed through other means – they are not exclusively limited to the domain of HE. Research that differentiates between the analytical skills acquired at university (‘graduate skills’), and the skills acquired in other situations (‘the skills of graduates’), could help clarify the origin of these skills, for example through mixed-methods research and case study approaches (James et al., 2013), but capturing this distinction can be difficult to achieve in practice. Graduates themselves may develop the same skill in different contexts, for example ‘problem-solving’ through writing essays and through participating in extra-curricular activities. In addition, skills such as creativity have been identified as central to problem solving in organisations (Mumford et al., 1997).

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<sup>26</sup> The link between ‘high-level’ or ‘higher-order’ skills and knowledge has been pointed out in other research, e.g. “critical thinking is not a skill. There is not a set of critical thinking skills that can be acquired and deployed regardless of context [...] domain knowledge and practice” (Willingham, 2007, p. 17).

Moreover, a skill with the same name (e.g. ‘problem solving’) can lend itself to completely different interpretations in different contexts (see Hyland and Johnson (1998) for a critique of ‘core skills’, and Holmes (2000) for a further critique of skills lists).<sup>27</sup>

As discussed above, the conceptual difference between knowledge and skills is not strictly defined. The difference between skills and knowledge appears to be one of emphasis, related to the research question being investigated. The main research questions in this thesis are related to graduates’ skill and knowledge use at work. The definition of skills and knowledge used in this thesis is similar to that used by Purcell and Elias (2015), which linked the high-level and basic skills developed in HE to creating, evaluating, using and communicating knowledge – the possession and understanding of theoretical and practical information – and defined these skills as the “proficiency, facility or dexterity that is acquired or developed through training or experience” (p. 9 in manuscript).

### 2.4.3 Evidence of graduates’ knowledge and skills utilisation

A large area of research has looked at the extent of graduates’ skill utilisation in the labour market, using both the skills match and the opportunity for skill use concepts of skill utilisation. In the skills match research, some of the studies take a labour-market-wide approach (e.g. Chevalier and Lindley, 2009; Green and McIntosh, 2007; Green et al., 2002; Battu et al., 2000; Dolton and Vignoles, 2000; Nove et al., 1997; Gallie, 1994), while others focus on specific industry sectors (e.g. Mason, 2002, 1996, 1995). The main findings of these studies are that evidence for skill underutilisation exists for some groups of graduates – particularly for those from newer universities, and is associated with lower pay and job satisfaction. The opportunity for skill use studies (Nabi, 2003) have also found some similar results (Nabi, 2003) although the link to psychological wellbeing has been questioned (Arnold, 1994). It is not conclusive what effects skill underutilisation has on subsequent career development, although the evidence suggests that there is some degree of underutilisation persistence (e.g. Dolton and Vignoles, 2000). But, these studies, particularly ones from the labour economic skill match tradition, typically exclude the

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<sup>27</sup> Related to the above difficulties regarding ‘skills,’ Holmes (2000) argued that employers do not usually articulate their demand for employees in the language of skills and that they appear to do so now is “more an artificial vocabulary of analysis, superimposed on discussions about the education-employment relationship” rather than an expression of the kinds of employees that they would like to recruit (p. 204). Holmes’s critique implies that research into employment which uses ready-made lists of skills may only reflect current policy language rather than reveal processes taking place in the labour market, and may not consider on the different ways in which skills are used by different people in different contexts.

utilisation of knowledge from analysis, do not tend to identify which skills are underused, and do not look at how skills are used (or not used), and why that might be the case. While graduate labour market studies such as *Class of '99* (Purcell et al., 2005) and *Seven Years On* (Purcell and Elias, 2004), as well as the *Futuretrack Stage 4* report (Purcell et al., 2013) explored graduates' experience of work and use of skills in their early careers in detail, they did not directly compare graduates' experience in small businesses to that in large businesses. In general, with a few exceptions discussed in Section 2.5.4, the research does not tend to look at whether skill utilisation differs by business size.

#### 2.4.3.1 *Graduates' skill underutilisation and associated outcomes*

Skill underutilisation is particularly related to the concept of *real/genuine* underemployment, where employees have a higher qualification than is formally required for the job and are also not making use of their skills, in contrast to *formal/apparent* underemployment, where employees also have a higher qualification than is required but are nonetheless making use of their skills (Green and Zhu, 2010; Chevalier and Lindley, 2009, 2007; Green and McIntosh, 2007). The research shows that real underemployment poses a bigger problem in terms of effects on wages and job satisfaction than formal underemployment. For example, while studies found the proportion of graduates in real underemployment to be quite low, between 10 and 15%, they also found it to be more detrimental to earnings and job satisfaction (Green and Zhu, 2010; Chevalier and Lindley (2009, 2007)<sup>28</sup> than being employed in jobs that were formally overqualified (Chevalier and Lindley (2009, 2007).<sup>29</sup>

Which graduates are more likely to find themselves in jobs where they underutilise their skills is another question. There is some relatively robust evidence that degree subject is an important variable affecting the likelihood of experiencing skill underutilisation (e.g. particular subjects such as business and management studies (Green and McIntosh, 2007). Some evidence suggests that university type matters for formal underemployment, but not for real underemployment (Chevalier and Lindley, 2009, 2007; Green and McIntosh, 2007). Evidence relating to graduates' gender is inconclusive, with some findings suggesting that

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<sup>28</sup> Green and Zhu (2010) used the 2006 Skills Survey data to look at graduates' self-reported job fit.

<sup>29</sup> Chevalier and Lindley used the *Seven Years On* Class of '95 graduates' data and two measures for skill utilisation: a job-satisfaction-based measure (2007) and a perceived job-appropriateness-based measure (2009). The *Futuretrack* survey asked respondents to consider how appropriate their job was for someone with their qualification and skills (see Section 3.3.6), which is similar to the instrument used in Chevalier and Lindley (2009).

female graduates are more at risk of underemployment (Groot et al., 2000), and others finding that sex does not affect the probability of skill underutilisation (Chevalier and Lindley, 2009; Green and McIntosh, 2007). There is also some limited evidence that graduates more likely to experience skill underutilisation include those employed in part-time and shift jobs and in jobs in small *workplaces* (Green and McIntosh, 2007).

However, despite their contribution to understanding skill utilisation, these studies have some limitations. The way in which graduates' skills were used was not considered. The studies used graduate cohorts graduating over twenty years ago (Chevalier and Lindley, 2009, 2007; Dolton and Vignoles, 2000), or include all graduates of working age (Green and Zhu, 2010), rather than focusing on recent graduate cohorts. As has been established in Section 2.3, recent graduates are entering a more fragmented and competitive labour market than those who graduated and entered the labour market longer ago, which may have specific implications for their skill utilisation.<sup>30</sup> In addition, these studies have not typically looked at how business size affects skill utilisation. Dolton and Vignoles (2000) is one exception, as it found that underemployment was high in small firms (fewer than 20 employees) and that the rate of underemployment did not decrease with firm size in a linear way, but in their wage regressions only the small firm dummy variable was presented and other categories of business size were not provided. Green and McIntosh (2007) included workplace size, but not firm size, and there is substantial evidence that suggests that small *workplaces* can have different effects depending on whether they are owned by small or large firms (e.g. Storey et al., 2010; Wilkinson, 1999).

Another visible gap in the literature is that very few studies have focused on the utilisation of *knowledge*. The REFLEX study (Allen and van der Velden, 2011) is one such exception. The REFLEX project looked at the employment and skill and knowledge use of university leavers graduating in 1999/2000 five years after graduation in 16 countries. Among the findings was the tendency to use degree knowledge at work in 'classical professional' and 'semi-professional' occupations (these may be viewed as similar to professional and associate professional occupations (SOC 2010), or to expert and communicator jobs (SOC(HE)2010) compared to other occupations. However, the survey did not investigate what graduates meant by degree knowledge, nor how it was used at work.

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<sup>30</sup> The HE initial participation rate (HEIPR) was 15% in 1988 and 30% in 1992 (Chevalier and Lindley, 2007), while for 2009-cohort graduates HEIPR was 42% in 2005/06 (DIUS, 2008). See also Section 2.3 for an overview of change in the labour market.

### 2.4.3.2 Duration of skill underutilisation

Studies investigating the whether the skills mismatch between graduates' skills possessed and their job requirements have provided conflicting evidence. One perspective has supported the argument that expansion of HE has created an excess supply of graduate-level skills and qualifications, leading to a misallocation of skills in the labour market (e.g. Brown and Hesketh, 2004; Keep and Mayhew, 2004), while others have argued that mismatch was not a problem of excess supply, but rather of short-term shortages, which would be alleviated with further HE expansion (Machin and McNally, 2007). On the whole, the evidence suggests that a degree of permanence is present (Green et al., 2002; Battu et al., 2000; Dolton and Vignoles, 2000), and that opportunities for job upgrading are limited.

For example, Dolton and Vignoles (2000) found that 38% of graduates were underemployed in their first job after graduation, and 30% – in their last job six years later. Using a different method, Battu et al. (2000) tested whether underemployed graduates' job tasks would converge to their education levels and found no evidence to support this. Furthermore, some evidence suggests that underemployment in a first job has persistent effects on subsequent jobs (Scherer, 2004). Meanwhile, evidence from more recent graduate cohorts suggested that there has been a slightly higher incidence of graduates employed in non-graduate jobs than before (Purcell et al., 2013). However, the *Futuretrack* graduates surveyed were at comparatively earlier stages of their careers than other graduate cohorts used in other studies, and had also graduated at the peak of the economic recession in the UK, and so cannot be directly compared to the studies mentioned above.<sup>31</sup>

Some research has found that graduates may 'grow' low-skilled jobs into graduate jobs over time (Purcell et al., 2005, p. 8; Harvey et al., 1997); or that *job upgrading*, defined as the extent to which the growing substitution of graduates for non-graduates in certain

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<sup>31</sup> The economic context should not be underestimated. ONS (2012) analysis of UK LFS data showed that for the most 'recent' graduates, those who graduated less than two years before the LFS survey took place, the unemployment rate was consistently 5-7 percentage points higher compared to those who graduated longer ago over the 1998-2008 period. However, economic recessions in the early 1990s and in 2008 disproportionately affected the most recent graduates who were just entering the labour market. By late 2011 the gap had diverged, so that those who graduated 4-6 years ago (in 2005-2007) had an unemployment rate of just under 5%, whereas those who graduated in 2009 had an unemployment rate of about 18% (ONS, 2012).

occupations has been accompanied by an expansion of the tasks and responsibilities associated with those occupations, may occur (Chevalier and Lindley, 2009; Mason, 2002). However, such studies provide only a few examples of upgrading in certain types of occupations and/or industries, and do not provide a picture of job upgrading across the labour market. The speculation that employers would upgrade jobs to make use of graduates' skills (Chevalier and Lindley, 2009) has been questioned by in-depth qualitative research that suggested that employer-led upgrading was limited in nature, and that most (still limited) occasions of job upgrading were employee led (Mason, 2002, see Section 2.4.3.3 for more details).

#### **2.4.3.3 Evidence of graduate job upgrading**

Evidence about graduate job upgrading in the labour market has reported mixed findings. Some of the optimistic results were largely due to Harvey et al.'s (1997) report, which suggested that, in an environment characterised by diverse graduate employment and extensive organisational change (*downsizing* (redundancies and natural wastage), *delaying* (becoming leaner, removing unnecessary managerial levels), and *flexible contractual arrangements* (contracted employees, part-time staff and outsourcing work)), graduates were desired by employers (see also Harvey, 2000). The authors argued that employers wanted employees who can be adaptive (bring in skills and knowledge), adaptable (be able to learn and to use skills and knowledge in the face of change) and transformative (use 'high level' skills to facilitate innovative teamwork to take the organisation forward), and able to deal with change, and that employers usually used graduate status as a proxy for employees possessing the three traits above. Moreover, since an increasing proportion of graduates was employed outside of 'traditional' areas of graduate employment, the authors found evidence of graduates wanting to and being able to 'grow' a low-level job to one that provided 'more challenging work more suited to their interests and expectations (see this thesis, footnote 175, p. 217 for an example). However, the methodology used in the report prevents an analysis of which factors were associated with graduates' abilities to 'grow' their jobs.<sup>32</sup>

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<sup>32</sup> The report was based on interview data carried out in over 90 organisations of varying size in England and Scotland across a mix of sectors and industries. The semi-structured, in-depth interviews were carried out with a sample of 84 strategic managers, 84 college graduates, and 35 non-graduate employees.

In contrast, Battu et al. (2000) found that there was no evidence that underemployed graduates<sup>33</sup> were able to upgrade their jobs. Upgrading was measured by the extent of overqualified graduates' earnings, job satisfaction, managerial duties, and promotion prospects becoming similar to those of matched graduates over time. Battu et al. (2000) found no evidence that the overqualified graduates approached matched graduates' measures. The authors suggested that these findings may lend support to the argument that the skills of overeducated workers may decay over time (De Grip et al., 2008; Keep and Mayhew, 1996), which would preserve any initial difference in status.

However, other, case-study based approaches, have found partial evidence of limited job upgrading. Mason's (1995) NIESR report, summarised in Mason (1996), looked at recent graduates employed in steel manufacturing and financial services, and found that in some cases, graduates were able to upgrade their jobs, or that managers were able to make use of the graduates and make the jobs more complex, particularly in the steel manufacturing sector. Mason defined underutilisation by three factors: (1) that graduates enter jobs for which university degrees have not been usually or traditionally required, and that (2a) these jobs have not been substantially modified to make use of the graduates' skills and knowledge, and (2b) there was no salary premium for graduates compared to non-graduates in these same jobs (1995, p. 15). However, there was evidence of labour market polarisation for graduates, where, particularly in the financial services, graduates were employed in "poorly-paid clerical-grade and similar jobs" with little prospects for upgrading (Mason, 1996, p. 99).

Mason (2002) examined graduates' job upgrading in the service sector, and found that over the last decade there were examples of (1) one-off permanent upgrading of clerical and administrative jobs in departments such as customer services and marketing through changes in work organisation; and (2) temporary job upgrading as individual graduates in lower level jobs took on additional tasks and responsibilities to progress up the career

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<sup>33</sup> Battu et al. (2000) conducted a postal survey of 1985 and 1990 graduate cohorts (N=11,735) and measured overqualification in three ways: (1) whether a degree was required for the job (graduates' responses); (2) respondents' educational level compared to the average level for that occupation for a similar age group using LFS data; and (3) dissatisfaction with the match between the respondents' work and qualifications (note that the use of 'dissatisfaction' may have framed the question). The correlation coefficient between these three measures was low but positive, between 0.2 and 0.3 (higher for women). All three measures were negatively related to earnings and to job satisfaction: matched graduates were associated with higher earnings and higher overall job satisfaction (lower overall dissatisfaction) relative to overqualified graduates.

ladder either in the internal labour market or with other employers. Both types of upgrading were found to have occurred only to a limited extent, and that the examples of individual upgrading that graduates gave “tended to be small-scale in nature and often amounted to improvements in job performance rather than taking on higher-level responsibilities” (Mason, 2002, p. 444). The main finding was that, despite some trends in employer demand to make use of graduate skills, the proportion of graduates regarded as “over-educated and/or under-utilised appears to have increased in some large service industries since the expansion of UK higher education” (2002, p. 453).

Thus, the limited research on job upgrading provides a fragmented evidence base for whether the labour market (and employers in particular) is able to make use of graduates’ skills. It is therefore important to continue to investigate knowledge and skill utilisation and potential channels for improving it in cases where underutilisation occurs.

#### **2.4.3.4 Graduates’ opportunity for skill use**

Several studies have used Warr’s (1987) opportunity for skill use construct (the extent to which a job enables a person to use their existing skills and to acquire new skills, see section 2.4.1.3) when analysing graduates’ careers (e.g. Nabi, 2003; Arnold, 1994). The main findings suggest that a lack of the opportunity to use skills is associated with lower job satisfaction, similar to the studies described in Section 2.4.3.1.

Nabi looked at the extent of the difference between *underemployed* and *appropriately employed* graduates, the former defined as those who reported that a degree was required for their jobs and the latter – who did not, with respect to (1) opportunity for skill use (operationalised as individually-possessed and job-required skills); (2) the congruence between them; and (3) intrinsic (job, career and life satisfaction) and extrinsic (salary and promotions) career success (2003, p. 374), using a sample of 206 business graduates in full-time employment, who graduated on average 3.4 years prior to the survey. The study found that underemployed graduates reported lower opportunity for some skill use, lower intrinsic career success and lower extrinsic career success in terms of salary compared to those who were appropriately employed, but that congruence between the skills possessed and required was not significantly different between appropriately employed and underemployed graduates. However, the study did not control for the occupations in which the graduates were employed, and focused on graduates from one degree subject only.

Arnold (1994) investigated the association between opportunity for skill use and psychological well-being. However, contrary to expectations, the results suggested that there was ‘little association’ between psychological well-being and the skills required for the job, as well as for the congruence between perceived skills and the skills required for the job (Arnold, 1994:366). These results may be partly explained by the way in which the opportunity for skill use concept was operationalised: Arnold suggested that the opportunity to use skills and knowledge may have been relatively unimportant in itself, but more important if it was linked with enhancing graduates’ future careers (see also Arnold and Mackenzie Davey, 1994).

Moreover, none of the studies discussed above directly investigated whether business size affected graduates skill utilisation. The literature on business size and experience of work is discussed in the section below, and the few studies which have considered skill utilisation and business size are discussed in Section 2.5.4.

## 2.5 Small businesses as new graduate employers

Graduate employment in SMEs is not a new policy issue: research in the 1990s examined graduate recruitment and skill utilisation by SMEs, and made general recommendations to create better linkages between SMEs and universities and to increase SMEs’ awareness of the benefits of recruiting graduates (e.g. Williams and Owen, 1997; Hawkins and Winter, 1995). Despite this earlier research, graduate employment and skill use in SMEs remains a pressing concern as HE participation has continued to increase and the problems related to graduate labour supply and limited ‘traditional’ graduate jobs have become more accentuated. SMEs (excluding sole proprietors) provide about 40% of UK employment (BIS, 2010), but continue to employ disproportionately fewer graduates than large companies. For example in 2007, 20% of employees in SMEs had a degree-level or higher qualification compared to over 30% in large companies (FSB, 2008). In light of these recent pressures, the UK government has again identified SMEs, and especially smaller firms, as alternative graduate employers (e.g. Lammy, 2010). A question that needs to be addressed, however, is whether business size affects graduates’ opportunities for skill utilisation when controlling for occupation, industry, and personal characteristics – something which has not yet been comprehensively addressed in existing studies.

The most important thing to note about SMEs is that they are not a unified group: the Bolton report stated, “[t]he small firm sector is extremely large and remarkably heterogeneous. [...] Their diversity is even more striking than their number” (1971, p. xv, para. 3). SMEs differ by ownership type, industry, age of the business, type of product produced, and other factors. It is relatively well-reported in the literature that SMEs in general tend to have lower levels of pay, fewer non-pecuniary ‘perks’ (including health insurance, bonuses, etc.), as well as less formal training (e.g. Abbott, 1993) and generally less formal working arrangements (e.g. Storey et al., 2010), although there is variation between different types of SMEs and across different industries. The extent to which firm size affects the experience of work is a long-standing debate in the literature, and is discussed below.

### 2.5.1 Experience of work in small firms – does size matter?

The idea that small enterprises might be associated with employment relations is not a new one – Ingham (1970, p. 15) cites Durkheim as one of several early sources of the idea that a lower degree of division of labour is related to ‘harmonious’ employment relations. The focus of this section, however, starts at the ‘revival’ of small firm research in the UK, frequently attributed to the time of the Bolton report (1971). Some of the research on small firms and employment relations has tended to cluster around two camps: (1) the ‘small is beautiful’ scenario, where small firms were seen to provide higher job satisfaction and better employment relations than their large firm counterparts (e.g. Schumacher, 1973; Bolton, 1971; Ingham, 1970), and (2) the ‘Bleak house’ perspective of sweatshop-style exploitative owner-managers (see Bacon et al., 1996 for a review of the literature; Sisson, 1993; Rainnie, 1989).

However, these polarised conceptions have been critiqued by more nuanced analyses which showed that, in practice, elements of both scenarios could be true simultaneously, and that small firm employment relations were complex and context-dependent. For instance, employers may adopt different employment relations control strategies depending on the extent of their economic dependence on their employees and on the ability of employees to resist their employers (Goss, 1991). Moreover, even in small, low-wage firms where workers might be expected to be vulnerable, and management – autocratic, employment relations have been described as dynamic and interdependent – a

‘negotiated order’, where workers are able to exert some resistance over certain aspects of work organisation (Edwards et al., 2006; Moule, 1998; Ram, 1994).

Whether small firm context matters more or less than firm size for employees’ experience of work is a widely debated issue. In the early 1980s, Curran and Stanworth (1981) published an influential article that challenged the then prevailing ‘small is beautiful’ view.<sup>34</sup> Their findings suggested that differences in worker-perceived job satisfaction were predominantly explained by differences in worker populations in small and large firms, and by differences in work organisation between the two industries. This led the authors to conclude that firm size as such should not be treated as a *main* determinant of job satisfaction, unless specifically related to worker and industry characteristics (Curran and Stanworth, 1981), i.e. that context matters as much as, if not more than firm size.

While other later studies had identified a link between firm size and experience of work in terms of high job satisfaction or higher levels of autonomy controlling for other relevant variables (e.g. Forth et al., 2006; Kalleberg and Van Buren, 1996; Idson, 1990), these studies did not decisively conclude whether the size effect was *pure*, or whether size was a proxy for other unobserved variables. A pure size effect may be defined as one which exists even when controlling for contextual variables and correlates of size. Although both Idson (1990) and Kalleberg and Van Buren (1996) showed that firm size was related to the variable of interest (job satisfaction or autonomy), their analysis controlled for occupation only to a limited extent.<sup>35</sup> More recent evidence has, however, lent further support to these findings, which further substantiates the case for a pure size effect.

Several studies have found evidence in favour of a size effect, related to informal practices intrinsic to small firms and their effect on employees’ perceived experiences of work (see in particular Storey et al., 2010; Tsai et al., 2007). ‘Informality’ in the context of employment relations has been defined in a wide variety of ways in the literature. One general definition is that informality is a dynamic, context-specific process ‘based mainly on unwritten

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<sup>34</sup> The authors carried out a survey of employees and managers in two industries (printing and electronics), in small and large firms. In their sample, Curran and Stanworth found that workers in small firms were more likely to be younger and less likely to be married than those in large firms.

<sup>35</sup> Idson (1990) used only one control dummy variable for a ‘blue collar’ occupation, which still encompasses a variety of occupational groups. Kalleberg and Van Buren (1996) too, did not directly control for the type of occupation, despite controlling for occupational prestige, training time, worker output, and whether respondents supervised others.

customs and the tacit understandings that arise out of the interaction of the parties at work' (Ram et al., 2001, p. 846). This process may include practices such as 'haphazard' systems and practices of career management, (King, 2003, p. 20, citing Nicholson (1996) and Storey (1994)), or staff's 'word-of-mouth' suggestions for potential employees in contrast to formal practices such as job advertisements and use of employment agencies (Holden and Jameson, 2002; Carroll et al., 1999; Williams and Owen, 1997). Thus, 'formality' can be operationalised as a composite measure of the presence of formal processes, plans, and accreditations at the workplace (e.g. Storey et al., 2010; Tsai et al., 2007).

Tsai et al. (2007) showed that business size had two types of effect on employees' experience of work: a *pure* size effect and an *indirect* effect, however, it should be borne in mind that the sample of firms was limited to small firms only. The pure size effect was defined as one where associations between business size and the experience of work held across different industry sectors, unaffected neither by firms' market strength nor by the size difference between the small firms in the study. Employees in small firms irrespective of sector were more likely to report having good relations with managers, which was explained through the informal working practices and close working relationships typically found in such firms. Limited evidence for an indirect size effect, defined as one where correlates of size such as formality and market strength affected the experience of work, was also found. As will be discussed below, formality and market strength tend to increase with firm size. Sectoral effects were observed as well, for example the extent of job autonomy varied between food manufacturing, creative and media, and ICT sectors, which lent partial support to the Curran and Stanworth (1981) argument. Overall, however, the findings suggested that the Curran and Stanworth (1981) conclusion that sectoral influence was more important than size did not hold for certain aspects of the experience of work. However, two qualifications were made: that good employment relations did not necessarily guarantee employee commitment to the firm, and that, in certain circumstances, close working relationships could aggravate employment relations.<sup>36</sup>

While informality can occur in firms regardless of size, it is also more likely that small firms will have less formal divisions of labour (Storey et al., 2010; see Bluedorn (1993) for a

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<sup>36</sup> E.g. when managers were autocratic and/or the business faced external pressures. See Goss (1991) on 'sweating' employer control strategies.

review), and thus that there may be “more of a pure size effect here, or at least that formality and size are hard to separate” (Tsai et al., 2007, p. 1783). However, even when controlling for formality, evidence for a pure size effect has been found (Storey et al., 2010). Storey et al.’s analysis showed that *self-reported job quality*<sup>37</sup> decreased as firm size increased, while formality increased with firm size up to 100 employees, after which the size effect levelled off. Rising levels of formality were also found to have a negative effect on job quality. Regression analysis showed that firm size continued to be significantly related to job quality even after controlling for formality and other variables, which implied that both a pure size effect as well as the formality-mediated size effect were present. This finding further supports the evidence presented by Kalleberg and Van Buren (1996) and Tsai et al. (2007), and suggests that firm size does have a direct effect on the experience of work even after controlling for contextual factors.

As discussed above, evidence has shown that while some aspects of employment relations in small firms are context dependent, a pure size effect has also been observed, related to the informal nature of small firms, which partially challenged the Curran and Stanworth (1981) view that business size by itself was not an important variable. However, there is only limited and inconclusive evidence in the existing literature about how business size affects knowledge and skill utilisation and the experience of work for *recent graduates in their early careers stage*, and specifically for graduates facing post mass-HE and post-industrial society labour market pressures. The following sections review the limited research available.

### 2.5.2 Graduate careers in small firms – evidence and challenges

A small but distinct body of research has looked at graduates’ careers in terms of expectations and preferences, in SMEs and in large companies. The findings have revealed mixed results. Some research has found no difference in the intention to leave a company between graduates employed in SMEs and in large businesses, and mixed support for the idea that graduates wholeheartedly supported the ‘new’ post-organisational career (King, 2003; see Section 2.3.2). Other research, has, however, pointed to the lack of internal labour markets and organisational flatness as potential barriers to career development that is especially acute in small firms at the smaller end of the SME spectrum (Rogers and

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<sup>37</sup> Self-reported job quality was constructed using Forth et al.’s (2006) measures of *employee needs*, which include autonomy, satisfaction, being informed, and attitudes towards managers, and share some similarities with the *experience of work* concept used in Tsai et al. (2007).

Waters, 2001; Belfield, 1999; Carroll et al., 1999; Appelbaum and Santiago, 1997). Limited internal labour markets are associated with *career plateaus* (FERENCE et al., 1977), where capable employees may not have room to progress further in the employing organisation, and with lower perceived levels of autonomy (Kalleberg and Van Buren, 1996). However, the issue of internal labour markets potentially extends to large firms which have become leaner and flatter (Clarke, 2008; see also the discussion on Harvey et al., 1997, p. 37 in this thesis) and so the difference between small and large firms may have diminished in this respect.

It is also generally accepted and asserted that small firms are likely to have more varied and flexible work roles because of less formalised division of labour (e.g. Tsai et al., 2007), and that graduates may be able to use this flexibility to their advantage to take opportunities to use and develop their knowledge and skills (Arnold et al., 2002), or even ‘grow’ their jobs (Harvey et al., 1997) and further their careers. While the finding that small firms are more likely to have a less rigid division of labour has been reasonably well-substantiated (see Bluedorn, 1993, Table 3 (pp. 175-177) for an overview), whether such a division of labour necessarily leads to role flexibility and what the implications of this may be for graduates’ career development in small firms has not been empirically investigated.<sup>38</sup> In fact some research has argued that that too much work role flexibility together with vague job specifications can lead to role ambiguity and stress, which would have negative effects on the experience of work (Johnson, 1991), and so further research is clearly needed in this area.

How graduates might decide to develop a professional career in small firms requires further discussion, particularly with respect to the professional and associate professional occupations in business services. In these occupations, employees tend to pursue careers, especially in occupations involving high-level technical skills, and employees tend to change employers (but remain in the industry) to do so (Rogers and Waters, 2001). The need to change employers was found to be more acute in smaller firms, especially in market research and estate agent associate professional occupations,<sup>39</sup> but these analyses did not

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<sup>38</sup> Curran and Stanworth (1981) found that workers in small and large firms did not differ significantly on the propensity to experience boredom at work – conceptualised as repetitive nature of the work that might be expected to be encountered more frequently in large firms with clearly defined work roles – but this work did not focus on recent graduates’ experiences.

<sup>39</sup> Estate agents may be viewed as ‘niche’ (SOC(HE)2004) or ‘non-graduate’ (SOC(HE)2010).

focus on graduates' early careers specifically (Rogers and Waters, 2001). Whether graduate employees wanted to pursue careers in the associate professional occupations is a more complex question: no evidence was found for this by Rogers and Waters, however, King (2003) found that graduates were interested in 'traditional' career model, especially in the professional and associate professional occupations, in the context of a hierarchical, structured career progression, rather than through individual (post-organisational or *protean*) career management. However, King's study did not compare graduates in small firms and large firms in similar occupations, employed a broad definition of 'small' firms which deliberately recruited graduates, and which appeared to be committed to employee career development.

The issue of *occupational* and *organisational* identity may be briefly considered here. The professional and professionalising associate professional occupations may be viewed as having a strong *occupational* identity. Occupational identity may be described as the way in which people define themselves with respect to the work that they do (Kitay and Wright, 2007), particularly regarding the relationship between institutionalised (or professional) careers, and the 'self'. Organisational identity, however, is more associated with the sense of belonging to an organizational entity (Cornelissen et al., 2007). In the context of organisational downsizing and delayering, occupational identity provides a useful complement to organisational identity, particularly for new occupations and portfolio careers (Kitay and Wright, 2007; Ahrens and Chapman, 2000). Thus, one might expect employer size to matter less for skill utilisation and career development for such occupations, but the evidence so far has been mixed. For example, while Tsai et al. (2007) found that career development opportunities for 'professionals' in the creative and media sector were limited by small employer size and flat organizational structures, King (2003) did not find any associations between perceptions of career development opportunities and employer size.

Several other studies have focused on ethnic minority graduates' career attitudes and business size, as a sub-field of graduate employment and ethnicity (Kirton, 2009; Speed, 2007; Mok, 2006).<sup>40</sup> The heterogeneity within the 'ethnic minority' group notwithstanding, existing research has found that, in general, minority ethnic graduates were more likely to be employed in health, and in business and finance industries (especially Indian, Chinese

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<sup>40</sup> There is also a separate area of research on minority ethnic graduates and entrepreneurship.

and Bangladeshi graduates), and in traditional graduate jobs, but also in non-graduate jobs, than those from white backgrounds (Mok, 2006). There may also be a relationship between ethnicity and the preference of working for a larger business, but evidence is limited, and may depend on the ethnicity of the study participants. Kirton's (2009) study of 40 black and minority ethnic<sup>41</sup> business graduates' career attitudes found that financial services were a desirable area of employment (this may hold for ethnic minority students as a whole, see Speed (2007)), and that "the private sector was seen as more exciting and dynamic than small or public sector organizations and as offering better pay, benefits and prospects" (p. 20). Moreover, more than half of the respondents 'envisaged remaining in the private sector, climbing the career ladder of large organizations' in ten years' time (Kirton, 2009, p. 21).

Thus, research suggests that there is a combination of factors that can affect attitudes to and experiences of career development in small firms – lack of internal labour markets, the question of informality and flexible work roles, and graduates' own expectations based on personal characteristics and values. However, the existing research does not address whether, in similar occupations, recent graduates with relatively similar characteristics have different opportunities for developing their careers in small firms compared to large firms, and thus highlights a need for further research in this area.

### 2.5.3 Graduate recruitment to/employment in small firms

The focus of this thesis is graduate skill utilisation, rather than graduate employment or recruitment. While these related issues will not be discussed at length, this brief note will highlight the most important and relevant findings from these other areas of research. As discussed above, the graduate population in the labour market has become more diverse though the differentiation of the HE sector, in terms of institutions, subjects studied, and the graduates' socioeconomic backgrounds. Graduate recruitment in SMEs, and small firms in particular, has been characterised by a lack of recognition of, or interest in, graduates; accidental rather than deliberate recruitment, usually through informal networks; and appreciation of practical work experience more than HE (Sear et al., 2012; Hart and Barratt,

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<sup>41</sup> The ethnic makeup reflects the fact that most of the respondents were from 'old' universities: there was an absence of Black Caribbean and only a few Black African respondents. Of the 40, more than half identified as Indian, Bangladeshi, or Pakistani; Black African; Chinese; and Mixed/Other.

2009; Woods and Dennis, 2009; Holden et al., 2007; Martin and Chapman, 2006; Holden et al., 2002),<sup>42</sup> but there are differences among firms.

Research on small firms' employment showed that companies are more likely to recruit workers, and especially graduates, the larger they are, or if they are likely to grow, findings fairly well-documented in the literature (e.g. Kewin et al., 2010; Pittaway and Thedham, 2005). Small firms' growth generally depends on their resources, their nature, and the strategic decisions of their owners/managers (Storey, 1994), although more precise and convincing explanations for why and when new firms grow are still lacking (see Coad et al., 2013). The economic environment can also affect growth, for example a fall in consumer demand for firms' output, cautious bank lending and access to finance, and a decrease in small firms' demand for graduates during recessions (Kewin et al., 2010). Small firms in particular types of business, such as professional service firms, are also more likely than the average to hire and deliberately seek out graduates for employment (Hart and Barratt, 2009; Yorke, 1999).

There is some evidence that graduates and small companies can both benefit from increased graduate recruitment to small firms. Graduates may be able to take on more responsibility and exercise their initiative, and 'grow' their job (e.g. Harvey et al., 1997). SMEs have been found to benefit from graduates' particular combinations of skills, such as the knowledge and high-level skills developed during HE (including problem-solving, research, analysis, and written communication). For example, many SMEs employing graduates thought that graduates contributed to growth and innovation (Hart and Barratt, 2009, see also Section 2.5). Graduates' contributions in terms of ICT skills and specialist knowledge are especially important for small firms that need to invest in their technology to survive (Mole, 2002). Industry sectors may affect SMEs' perceptions, however. For example, Pittaway and Thedham (2005) found that graduates were more likely to be employed in bigger SMEs (25 or more employees) than in smaller and micro businesses (excluding self-employed) in the tourism, hospitality and leisure sector. However, no

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<sup>42</sup> Hart and Barratt suggested a typology of SME graduate recruitment: the *strategic*, *occasional*, and *accidental* recruiters, where the last group were found to have mixed views about the potential value of graduate employees (2009, p.9).

statistically significant difference was found between business perceptions regarding whether or not employing graduates would improve business performance.<sup>43</sup>

Several schemes have been introduced to help remedy this situation of potential benefit from graduate recruitment to small firms and a reluctance to do so. A well-known and well-researched scheme was the Shell Technology Enterprise Programme (STEP), which enabled students to complete a placement in an SME, and subsidised participating firms (Westhead and Matlay, 2005; Westhead et al., 2001). The main research questions were whether STEP affected outcomes such as likelihood for participants to obtain jobs in small firms compared to non-participants; attitudes to self-employment and to starting their own business. The findings suggested that, although participants had a more positive attitude towards self-employment and entrepreneurship (before and after the programme), no significant differences were found between participants and non-participants with the ability to find full-time jobs or to be employed in SMEs. But, the graduate cohort used in the studies is now relatively dated, and the authors suggested that future research should investigate graduates' skills and early career graduate retention in SMEs, areas which were not investigated in the studies.

While patterns of and reasons for graduate recruitment in SMEs have been relatively well-studied, this area does not form the main focus of this research. Less work has been done on graduates' experiences of work and skill utilisation in SMEs compared to large companies, which is of substantial interest to this PhD. The limited research on this issue is summarised and discussed below.

#### **2.5.4 Graduate knowledge and skill utilisation in small firms**

Further to the material on graduates' skill utilisation discussed in Section 2.4.3, this section focuses on graduates' skill utilisation in small firms. There have been few studies of graduate skill utilisation in SMEs, and even fewer concerning small firms. The issue has been analysed either from the perspective of the employer (e.g. Kewin et al., 2010; Hart and Barratt, 2009; Hogarth et al., 2007) or from the perspectives of the graduate employees (Purcell et al., 2005; Purcell et al., 2004; King, 2003; Belfield, 1999, Nabi and

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<sup>43</sup> Pittaway and Thedham (2005) surveyed SME employer perceptions of graduates' skills. Of all the businesses surveyed, 36% employed graduates (N = 139, of which: 27 self-employed, 61 with 1-10 employees, 37 with 11-50 employees, and 14 with 51-200 or more employees).

Bagley, 1999). Nove et al., (1997) and Harvey et al. (1997, see Section 2.4.3.3) were notable exceptions, but these studies did not focus on small firms specifically, and did not provide a systematic analysis of whether and why skill utilisation differed between small and large businesses.

Most studies that had focused on skill use in SMEs have tended to treat the SME sector as a homogenous group, without focusing on the differences between micro, small and medium businesses, or by having just one dummy variable for a *small* firm (often defined in different ways). The findings discussed here show a mixed picture. As discussed in Section 2.4.3, small firm size was associated with skill underutilisation (e.g. Dolton and Vignoles, 2000), which is further supported by Belfield (2000), Salas Velasco (2010), and OECD (2013). However, other studies have found some evidence that small firms do provide opportunities for using and developing skills and knowledge, although the findings are quite modest – ‘better than expected’, according to Arnold et al., (2002) – or that skill *underutilisation is less likely* (Nove et al., 1997, a difference in emphasis to skill *utilisation being more likely*). As will be shown, the main limitations of these studies are that they do not tend to compare skill utilisation in similar occupations for graduates in small and large businesses from the same graduate cohort, and of the studies that come closest to this, one does not conduct a multivariate analysis, and the other potentially suffers from recall bias. The main studies are discussed below.

In an economy-wide study by Nove et al. (1997),<sup>44</sup> one of the key findings relating to business size was that graduates employed in smaller firms were among the least likely to report under-utilisation of their skills – possibly because of more varied tasks or flexible work roles. There was also evidence that Arts and Humanities graduates were less likely to report skill underutilisation than graduates from other degree subjects, but such graduates were also more likely to go into jobs which did not formally require a degree (HECSU, 2010). However, the data were presented in cross-tabulation format, and no multivariate regression analysis was conducted, which limited the reliability of the findings. It could be the case that a combination of variables related to business size affected responses to skill utilisation, which could be accounted for using a regression model with multiple controls.

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<sup>44</sup> Nove et al. (1997) looked at recent graduates’ skill utilisation in the labour market by graduates’ and businesses’ characteristics (including degree subject, work experience, industry, and business size, although businesses with fewer than 25 employees were not included).

In addition, the Nove et al. study did not investigate *why* graduates in certain contexts were more or less likely to use their skills or how skill utilisation occurred.

Few studies focused exclusively on *small* businesses with between 10 and 49 employees, among those that had, *micro* businesses tended to be the focus of the research (Pittaway and Thedham, 2005, see Section 2.5.3; Greenbank, 2002). The studies have reported some limited but positive findings about graduates' use of skills in small firms. In his study of undergraduate placements in two micro businesses (a printing company and a video store), Greenbank (2002) found that, prior to the placement, the students held negative perceptions about working in micro businesses, related to poorer career opportunities and pay (see also Westhead, 1998), and underwent two contrasting experiences during the placement.<sup>45</sup> This study illustrated that work experience in very small businesses was influenced a great deal by management styles, although care should be taken in generalising from these results to graduate employment as a whole due to the short-term, placement nature of the students' work experiences. This study was also limited to very small numbers of first year students, and so the findings should be interpreted with caution.

Encouraging findings were also presented by Arnold et al., which showed that UK and Dutch graduates employed in SMEs were more likely to perceive having more freedom to "do things their way", and potentially as a consequence of that, to develop their skills (2002, p. 490). While most of graduates' expectations of aspects of work were exceeded by their experience, aspects relating to training and pay more frequently under-met than over-met expectations, in line with findings about perceptions of and actual levels of pay and training provision in SMEs (e.g. Sear et al., 2012; Kotey and Folker, 2007; Belfield, 1999).<sup>46</sup> However, the study only looked at graduates' perceptions of the opportunities for

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<sup>45</sup> In the course of the placement, the students at the printing company felt that they were given little direction or guidance in how to carry out their task and felt that the manager did not listen to their suggestions. In contrast, the students at the video store were set objectives for their task and were able to discuss them with the managers throughout the placement. At the end of the placement, both the students and the owner-manager at the printing company were dissatisfied with their experience, with the latter stating that he had expected the students to be better 'trained' (2002, p. 266, [quotation marks in original]). In the video store, the experience for both students and managers was positive: the students used their market research results to implement a marketing campaign and developed workplace skills, while the managers benefitted from the results of the campaign.

<sup>46</sup> Arnold et al. (2002) looked at graduates' perceptions of skill development, among other factors, in SMEs, comparing findings from UK and the Netherlands. The study was based on a survey with 126

skill development in general, and did not look at skill utilisation in terms of *which* skills might be used. Furthermore the main sample was restricted to SME employers, although an unrelated and older sample of UK graduates employed in large firms was used as a comparison group (Arnold and Mackenzie Davey, 1994). The graduates also held a variety of occupations, but expectations match differences by different occupations were not presented. The relatively low number of respondents also prevented an in-depth multivariate analysis of variables other than size that may have affected graduates' perceptions. Thus, further research is needed on this issue.

In contrast, Belfield (1999)<sup>47</sup> found that working conditions, including pay and training, were perceived to be of lower quality in SMEs than in large businesses. The conclusions were grim: "the rewards for and the utilisation of graduates in SMEs are sub-optimal compared to those in larger companies" (1999, p. 257). However, as the paper was published 15 years ago, it is possible that the SME environment has become more hospitable to graduates. The paper also focused on job satisfaction, rather than skill utilisation, a related but distinct concept.

A more recent paper looked at factors affecting the development of competences at university and their use at work among Spanish graduates (Salas Velasco, 2010) using the REFLEX study.<sup>48</sup> This study comes closest to a comprehensive analysis of skill utilisation by graduates in their early careers across the labour market. Salas Velasco found that being employed in large firms, and to a lesser extent, medium-sized firms, was likely to *increase* graduates' perceptions that their competences were required for their job, relative to working in a small firm. While Salas Velasco's research is close to the main research issues explored in this thesis, further research is still needed for two main reasons. First, as Salas Velasco pointed out, the graduates were asked about their competences five years after graduation, and could have developed some of these competences through their jobs and

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graduates employed in SMEs in the UK and the Netherlands, looking at the extent to which graduates' expectations of work were met during their early careers.

<sup>47</sup> Belfield (1999) analysed graduates' perceptions of working conditions in businesses by size, using three relatively large-scale surveys: over 2,800 graduates and 600 undergraduates from one UK university, and over 12,000 graduates from across the UK. The business size groups used were: 25 or fewer, 26-99, 100-499, and 500 or more employees.

<sup>48</sup> The REFLEX questionnaire asked graduates to what extent 19 different competences were required in their current jobs and to what extent they thought they possessed those competences using a 1-7 scale. See Section 3.5.1.2 about addressing the 'anchor problem' using self-reported required and possessed levels of capabilities and the feasibility of using this approach in *Futuretrack* data.

other experiences, and not necessarily solely through a university education. This time gap adds a further problem of participant recall bias (see, for example, Fraser et al., 2007). Second, the data concern Spanish graduates only, which provides some suggestions towards a working hypothesis about graduates in small businesses in general, but more UK-based research is needed to explore the issue facing UK graduates in more detail.

The findings that skill utilisation on several different dimensions of skills and knowledge diminishes as firm size increases were also supported by the OECD (2013) Survey of Adult Skills (PIAAC). The survey found that skill use increased with firm size for 'information-processing skills' (reading, writing, numeracy, ICT, and problem solving) and for 'co-operation at work', however these studies did not specifically look at *graduates'* use of skills and knowledge.

Thus, while some limited research of graduates' skill utilisation in small firms has been conducted, there is a clear need for a systematic analysis of whether and why skill utilisation differed between small and large businesses, controlling for contextual factors and graduates' characteristics, and employing quantitative and qualitative research methods to capture the multidimensional construct of skill utilisation.

## 2.6 Issues outstanding from the literature

The literature gaps highlighted in this chapter inform the following research questions, which are operationalised in Chapter 3 (Methodology) and the findings reported and discussed in Chapters 4-9.

### ***How, if at all, does graduates' skill and knowledge utilisation differ between graduates employed in small businesses and those in large businesses?***

What is not clear from the research literature is whether graduates employed in small businesses have different opportunities for skill utilisation compared to graduates employed in large businesses controlling for the type of job and the type of industry. While Curran and Stanworth (1981) found that business size had no effect in itself, they looked at job satisfaction rather than skill utilisation, and their findings have been challenged by later research (e.g. Tsai et al., 2007). However, these later studies did not look at the utilisation of graduates' knowledge and skills. In contrast, Nove et al. (1997) compared SMEs to large businesses but fell short of a systematic multivariate analysis that compares skill utilisation

in small and large businesses controlling for industry, occupation, and individual characteristics. Salas Velasco's (2010) study comes closest to a labour-market-wide analysis of graduate skill utilisation, but the potentially suffers from recall bias as a result of the time gap between the respondents' graduations and the survey implementation. The findings from the Salas Velasco study that business size is positively related to skill utilisation (the larger the business the higher the reported levels of skill use) warrant further research in the UK context. If graduates are more likely to be overqualified in small businesses, and in SMEs more generally, these findings may dampen government expectations of SMEs as the sector which can absorb and make use of the increased supply of graduates. Moreover, if graduates in small firms are more likely to be experiencing both formal and *real* underemployment (Green and Zhu, 2010) they may also be more likely to have lower levels of job satisfaction and performance, which may negatively affect their well-being.

***What were graduates' experiences of knowledge and skill use in small and in large businesses?***

While some research has focused on employment relations in and graduate recruitment to SMEs, little research has focused on graduates' *experience* of knowledge and skill utilisation in small businesses in particular, controlling for type of job. To capture experience, mixed methods including quantitative and qualitative approaches should be adopted. Studies such as Harvey et al. (1997), Mason (2002, 1996, 1995) and graduate labour market studies such as *Class of '99* and *Seven Years On* use statistical analysis and interviews to explore experience of work and use of skills, including job upgrading, but do not explicitly focus on small firms or compare small and large businesses. Thus, a systematic analysis of graduates' experiences of using skills and knowledge at work, in small and large businesses, in specific occupations and industry sectors, is required to see whether business size plays a role in graduates' experiences of knowledge and skill utilisation.

***What were graduates' experiences of career development in small and in large businesses?***

Several studies have looked at graduates' early career preferences and development, but few have explored whether business size has any influence on career development. King's (2003) study of graduates' career preferences included interviews with graduates employed in SMEs and in large businesses, however there was a lot of variation in the

sample: the SMEs varied in size and type of activity, which makes it difficult to look at which factors are related to graduates' career development perspectives. Moreover, evidence suggests that while SME employers tend to consider that they offer good opportunities for graduate career progression (Phillips and Donnelly, 2013, King, 2003) they also lack internal labour markets, have relatively flat organisational structures, and offer predominantly informal training which may constitute potential barriers to career development (Carroll et al., 1999; Belfield, 1999; Appelbaum and Santiago, 1997). The industry sector and type of occupation are also important for shaping the expectations of career progression: for example, for selected associate professional occupations, employees tended to expect to develop their careers by changing employers while staying within the same sub-minor industry group (Rogers and Waters, 2001). However, this analysis did not specifically focus on graduates' early careers. Thus, what is missing is a systematic analysis of whether, for a given industry and occupation, graduates' early career development experiences in small business differ from those in large businesses and why.

These gaps in the literature provide the rationale for the systematic and targeted investigation of UK graduates' knowledge and skills utilisation and experiences of early career development in different sized businesses. This investigation was carried out using quantitative and qualitative approaches, discussed in the Methodology chapter (Chapter 3). The broad research questions arising from these literature gaps are operationalised in the Methodology (see Section 3.5.3.1 for the quantitative hypotheses and Section 3.5.4.1 for the qualitative research questions).

## 3 Methodology

### 3.1 Introduction

This chapter discusses the methodological approach and research design used to explore the research questions emerging from the research issues set out in the previous chapter. To reiterate, the main research questions explored in this thesis relate to graduate skill utilisation and career development in small and large businesses. These research questions can be grouped into an overview of patterns of skill use at the overall labour market level and more in-depth research of graduates' experiences of skill use and career development in a particular part of the labour market:

#### **At the overall labour market level:**

- Did graduates working in small businesses report different levels and ways of using skills and knowledge compared to graduates working in large businesses, when controlling for occupation, industry and personal background?
- If so, in what contexts did business size matter?

#### **In a particular industry sector and type of job, and for similar types of graduates:**

- What were graduates' experiences of skill use in small and large businesses? What kinds of themes emerged? What were the similarities and differences?
- What were graduates' experiences of career development in small and in large businesses? What kinds of themes emerged? What were the similarities and differences?

This chapter discusses how these research questions were investigated in the thesis. First, the selected research approach is presented in Section 3.2. Next, the *Futuretrack* dataset, which was used as the starting point for this research project, is described, the reasons for using this dataset are explained, and key definitions are set out and explained in Section 3.3. Alternative methods considered but not selected are explained in Section 3.4. The final research design is set out in Section 3.5, with the advantages and limitations of using survey data and interviews discussed in Sections 3.5.1 and 3.5.2, and the quantitative and qualitative methodology discussed in Sections 3.5.3 and 3.5.4. The methodological validity and reliability is discussed in Section 3.6, and the ethical considerations in Section 3.7.

## 3.2 Mixed methods research approach

Mixed methods research is particularly well-suited to investigating multidimensional concepts, such as skill utilisation, because they enable the researcher to examine the concept from different perspectives (Johnson et al., 2007). Graduate skill utilisation tends to be examined from two distinct methodological approaches briefly discussed in Chapter 2 Section 2.4: a quantitative approach which tends to use survey data and statistical analysis to look at the associations between skill utilisation and other variables (e.g. Green and Zhu, 2010; Chevalier et al., 2007); and a more qualitative approach using case studies in specific labour market segments and/or interviews with recent graduates or employers to look at how skills are used in work (e.g. Purcell et al., 2008; 2005; G. Mason, 2002). This thesis investigated graduate skill utilisation in small and large businesses, and used quantitative analysis of the *Futuretrack* survey to look at the labour-market-wide trends, which were then followed up with qualitative analysis of a specific group of graduates to look at how they used their skills and how they experienced career development. The mixed methods research approach is described in more detail below, and the quantitative and qualitative methods are described in more detail in Section 3.5.

### 3.2.1 Benefits of using mixed methods designs

Mixed methods research (MMR) in its current form can be traced as having emerged from triangulation literature in the 1970s, and has been presented as a possible alternative to the ‘paradigm wars’<sup>49</sup> of the 1980s. MMR studies vary, but are characterised by combining elements of qualitative and quantitative research approaches in order to address the research questions broadly and deeply (Creswell and Plano-Clark, 2011; Teddlie and Tashakkori, 2011; Johnson et al., 2007). The main benefits of using MMR are that they enable the researcher to address a research issue from different perspectives, the quantitative and qualitative research strengths can be combined and weaknesses of any one particular method can be overcome (Johnson and Onwuegbuzie, 2004).

The MMR literature highlights several types of most commonly used research designs (e.g. Creswell and Plano-Clark, 2011; Teddlie and Tashakkori, 2006; Johnson and Onwuegbuzie, 2004; Tashakkori and Teddlie, 1998). Broadly speaking, these designs can be conceptualised in two ways: sequential and parallel studies, where the stages of research

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<sup>49</sup> ‘Paradigm wars’ has been used to describe the antagonisms between researchers from the quantitative and qualitative traditions expressed in heated debates especially in the 1980s (see, for example Bryman, 2008; Oakley, 1999; Gage, 1989).

occur either one after the other or in tandem; and equivalent status / dominant status designs, where both the quantitative and qualitative strands either have equal weight or are quantitative-led or qualitative-led and the less-dominant strand adds depth or context to the dominant strand.<sup>50</sup>

MMR approaches are especially useful for several research situations (Greene et al., 1989): (1) *triangulation* (convergence of results to add reliability); (2) *complementarity* (examining different facets of a phenomenon); (3) *initiation* (fresh perspectives or contradictions); (4) *development* (sequential use of the methods so that findings from the first stage can inform the second stage); and (5) *expansion* (adding scope and depth). Situations (2), (4) and (5) are particularly relevant for adopting the mixed methods approach for this thesis. The research problem of graduate skill utilisation in small and large businesses is multidimensional, so some aspects can be better explored through a quantitative approach, and others – through a qualitative approach. The selected mixed methods approach was sequential because of practical considerations: quantitative analysis was carried out first using data from the *Futuretrack* Stage 4 survey, followed up by qualitative interviews and analysis building on the quantitative findings. The qualitative part of the study also added depth by exploring additional dimensions of graduate employment in small businesses.

### 3.2.2 Drawbacks to using mixed methods designs

One main argument against combining research methods from the quantitative and qualitative research traditions is the so-called ‘incompatibility thesis,’ which posits that there are incommensurable differences between the research paradigms underpinning these traditions.<sup>51</sup> Several counter-arguments can be made to defend the use of MMR.

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<sup>50</sup> Other designs include multilevel approaches (for example linking individual-level data to organisation-level data) to gain a deeper understanding of behaviour (Tashakkori and Teddlie, 1998, p. 43) and embedded, transformative designs (Creswell and Plano-Clark, 2011).

<sup>51</sup> Howe (1988) argued that the ‘incompatibility thesis’ proponents, such as Guba (1983) and Smith and Hushusius (1986), insisted that combining research methods led to epistemological problems at the paradigmatic levels: the paradigms of positivism (underpinning quantitative methods) and interpretivism (qualitative methods) were fundamentally incompatible. In contrast, ‘compatibility thesis’ proponents argued that paradigms need not dictate research methods, and argued for a research-question-led ‘what works’ approach instead (e.g. Reichardt and Cook, 1979; Howe, 1988). However, ignoring away important differences between paradigms, epistemologies, and methodologies under the aegis of ‘what works’ has been argued to be a ‘mistake’ (Denzin, 2012) – methodological pluralism could be an alternative conceptualisation. Many MMR researchers eschew philosophical differences in favour of a pragmatic approach (see Bryman, 2007). It is also possible to construct MMR questions to address quantitative and qualitative dimensions of a concept

First, the ‘autonomy’ thesis, that research methods are not necessarily strongly linked to qualitative or quantitative methodological paradigms (Reichardt and Cook, 1979).<sup>52</sup> Second, there are similarities between paradigms that tend to be underemphasised, such as using empirical observations to understand human and social phenomena (Johnson and Onwuegbuzie, 2004). Third, it is possible to pursue MMR through a pluralist perspective of multiple worldviews and shifting between these, rather than attempting to reconcile the differences within a single paradigm (Greene and Caracelli, 1997).<sup>53</sup> The pluralist approach is in part consistent with the ‘incompatibilists’ who argued that mixing methods is possible, but mixing paradigms is not (see footnote 51) because the researcher need not ‘mix’ paradigms, only establish a dialogue between them.

Other often-mentioned drawbacks to using MMR are that the research is time-consuming and difficult (Johnson and Onwuegbuzie, 2004). A PhD project, however, provides a good opportunity to take on such a project, both in terms of the time available and in terms of being able to learn and develop different research methods.

### 3.2.3 Justification for selected mixed methods design

This study used the sequential quantitative-qualitative equal-status design (Creswell and Plano Clark, 2011; Teddlie and Tashakkori, 2006) for three main reasons. First, given the limited information about skill utilisation in small firms, it was more appropriate to investigate the labour-market wide differences initially using a quantitative approach, and then use a qualitative approach to follow up some of the findings and to ask additional questions arising during the quantitative phase. Second, the majority of existing ‘exemplar’ research using a mixed methods approach in graduate employment fields has tended to adopt the sequential quantitative-qualitative design: a survey would be followed up with interviews with a sub-sample of the survey respondents (e.g. Purcell et al., 2005; Purcell and Elias, 2004; Elias et al., 1999; Nove et al., 1997; see also Teddlie and Yu, 2007). Third, the main source of data for the study was the *Futuretrack* dataset (see Section 3.3.1 for the justification for using the Futuretrack survey) which provides a comprehensive nationally-

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separately, and bring the insights together in an overarching ‘mixing’ question (Creswell and Tashakkori, 2007).

<sup>52</sup> But see Howe (1988, p. 16) for a critique: “Rather than dismissing the relevance of epistemology, however, which is what Reichardt and Cook in effect do, the correct move is to dismiss epistemology that is irrelevant.”

<sup>53</sup> Greene and Caracelli advocated “a reciprocal, mutually respectful, dialogic relationship between philosophical frameworks and methodological decisions” (1997, p. 15).

representative overview of graduates' early careers in the aftermath of the recession, and can also be compared to findings from previous graduate labour market studies carried out at the IER. Most of the *Futuretrack* respondents who went on to higher education had graduated in 2009 or 2010, and were in employment in their early careers at the time of the fourth wave survey (carried out in autumn/winter 2011/12).<sup>54</sup> Thus, *Futuretrack* provided both a dataset for the quantitative research and a sampling frame for the follow-up qualitative research.

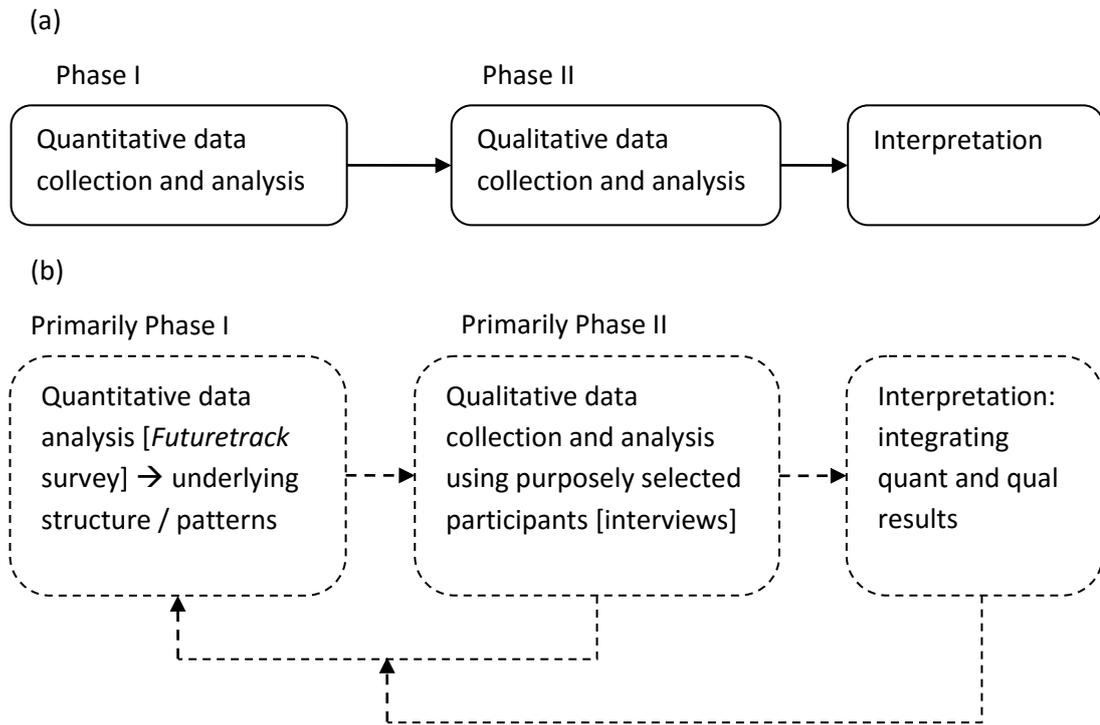
For the above reasons, the adopted MMR design consisted of quantitative data analysis of the *Futuretrack* survey in the first phase followed up with an in-depth qualitative investigation of some of the patterns in the data highlighted in the quantitative analysis using a subsample of participants in the second phase. This approach was tested out in a pilot study (see Section 3.2.4).

In practice the phases of the mixed methods research project were much less clearly separated out into two distinct parts than the sequential design suggests. Although the majority of the quantitative analysis was carried out before the qualitative interviews took place, the regression models for looking at whether business size affected skill utilisation continued to be reworked in light of comments from supervisors, colleagues, and feedback from workshop and conference presentations. In addition, the qualitative analysis findings suggested that some issues, such as attitudes to risk, should be included in the quantitative analysis. The thesis research design is shown in Figure 3.1 (b) below, in comparison to Creswell and Plano Clark's (2011) archetypical sequential two-stage research design.

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<sup>54</sup> Using *Futuretrack* to find out about graduate skill utilisation and career development was more insightful than HESA DLHE studies, which capture employment only six months after graduation. However, the HESA DLHE data may be indicative of longer-term prospects: the *Moving On* (class of '95) study found that graduates unemployed six months after graduation were more likely to be unemployed for at least one year out of the three and a half years of early careers surveyed by the study (*Moving On* press release: University of Warwick, 1999).

**Figure 3.1: Sequential two-stage research design outline**



Source: Adapted from Creswell and Plano-Clark (2011, p. 69)

Notes: (a) Explanatory sequential research design prototype outline (Creswell and Plano-Clark, 2011);

(b) Author's selected modified research design with phases I and II less clearly defined: Phase II results feed back into Phase I analysis.

### 3.2.4 Pilot study

The sequential quantitative-qualitative equal-status mixed method design was tested in a pilot study at the start of the PhD. Pilot studies are widely used in research projects to explore the feasibility of research methods and to develop and refine research instruments (Mason, J., 2002, van Teijlingen and Hundley, 2001). In this PhD, the pilot study was used to test out statistical analysis techniques and identify relevant *Futuretrack* survey questions, to test selecting respondents from the survey, and to trial and develop qualitative methods, particularly interviews and online diaries. As will be discussed in Section 3.4.1, the online diary method was considered but ultimately not adopted in this PhD project.

One of the main problems of pilot studies is the possibility of *contamination* of results, for example by including pilot study data in the main study results, or by generating new data for the main study from pilot study participants (van Teijlingen and Hundley, 2001, p. 2). The pilot study in this PhD overcame this problem because the participants in the pilot study did not overlap with those in the main study reported in this thesis, and thus the pilot study was self-contained and separate from the main study. The pilot study made use of

the *Futuretrack* 2005 wave 4 Pilot survey (N=296), and interviews with recent graduates *not* part of the *Futuretrack* 2006 main study, as well as local officials in the North-West of England involved in SME-related issues, including a local Chamber of Commerce CEO, and two County Council business development representatives.<sup>55</sup>

### 3.2.5 Summary of research methods adopted

The pilot study process and findings helped to finalise the main quantitative and qualitative research methods to be used in the main study (with the exception of factor analysis and regression analysis, which could not be conducted on pilot study data owing to small sample size). The main quantitative and qualitative methods used in the main study are summarised below, and are discussed more fully in Section 3.5.

The main quantitative method to analyse the effects of business size on skill utilisation using *Futuretrack* survey data was logistic and OLS (ordinary least squares) regression, which assessed the influence of business size on graduates' skill and knowledge use in their job, while controlling for other factors – this method is commonly employed in quantitative skill utilisation studies. Factor analysis and descriptive statistical analyses were also used in the quantitative phase (see Section 3.5.3 for a full discussion). The qualitative phase of the project used telephone interviews with a sub-sample of 20 graduates employed in small and large businesses in associate professional occupations (see Section 3.3.5.2 for the qualitative sample selection and Section 3.5.4.2 for the sample description). Alternative qualitative methods considered but not used in the main study are discussed in Section 3.4. The alternative qualitative phase research design considered using diary studies and structured observation with a sub-sample of graduates to look at graduates' skill utilisation, but ultimately these approaches were not used owing to a combination of time constraints and the quality of data produced.

Before describing the final research design, the definitions and measurements of the key concepts used in the thesis are set out below.

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<sup>55</sup> The quantitative part of the pilot research study has been previously published (Luchinskaya, 2012), and the whole pilot study is available on request.

### 3.3 Data and definitions

#### 3.3.1 *Futuretrack*

*Futuretrack* is a longitudinal survey which has been following UK full-time higher education (HE) applicants from 2006 through to 2012 in four survey waves: the first at the time of application to higher education, the second wave at the end of the first year of HE, the third wave at the end of a HE degree (3 or 4 year) and the fourth wave when most of the respondents had graduated and started work. By Stage 4, the *Futuretrack* population was just over 17,000 and the vast majority of respondents completed at least an undergraduate degree. The *Futuretrack* Stage 4 Report (Purcell et al., 2013) examined the cohort in detail, with emphases on employment, further study, earnings and other themes. This thesis focuses on first-degree UK-domiciled graduates, who were employed in the private sector at the time of the *Futuretrack* Stage 4 survey, with specific attention paid to business size, and a specific sub-sample of respondents working in the emerging graduate occupations – mainly SOC(HE) 2010 *communicator* jobs as described in Section 2.3.3.1 (e.g. marketing and sales managers, administrators and management accountants).

The *Futuretrack* dataset was the most appropriate source of data to use for this project, as it was specifically geared towards graduates, included specific questions about skills and knowledge used at work, and contained a full work history for all respondents. The *Skills and Employment Survey (SES)* and the *Workplace Employment Relations Study (WERS)* were possible alternatives, however these datasets were not used for the following main reasons. The *SES* specifically focuses on the work that people do and how it has changed by comparing results to previous surveys in the series. The latest *SES* led by Felstead et al. was conducted in 2012. The main advantages of the *SES* are that it focuses on skills in work, and collects information on participants' education, including degree qualifications, broad subject area, HEI, and degree class. However, the *SES* had considerably fewer participants than the *Futuretrack* survey (3,200 compared to 17,000). Thus, analysing the employment experience of recent graduates only would result in a very low sample size that would prevent disaggregated analysis on graduates in different occupations in different business sizes. *Futuretrack*, in contrast, had over 4,500 recent graduates employed in the private sector, which enabled a detailed analysis – taking business size, occupation, industry, and other variables into account – to take place.

The *WERS* survey series focus on employment relations in the UK, and include employee and employer surveys, which could enable an interesting comparison regarding the differences in employment relations in small and large businesses. The latest *WERS*, conducted in 2011, had a much larger number of employee respondents than the *SES* (just under 22,000). However, no contextual information about the respondents' education was asked, and so information such as degree subject and HEI is not available. It would have also been difficult to arrange to contact and interview a subsample of the *WERS* survey respondents – the same difficulty also applies to the *SES*.

Thus, the *Futuretrack* survey was the best survey in terms of a substantial number of recent graduates, information about their education and work history, and the ability to contact a subsample of these graduates for an interview. The *WERS*, however, provides another interesting avenue for future research investigating the effects of business size on recent graduates' experiences of work in (although the date of graduation is not given, this can be proxied by 'young' graduates aged between 20 and 29), and is a potential direction for future work (see Section 10.5).

### 3.3.2 Business size

While there is no one set way for categorising firms into small and large ones (Storey, 1994), this thesis uses the number of employees as the classification criterion. The employee-based classification approach facilitates comparisons of graduate employment by business size across different industries compared to adopting industry-specific concepts of smallness.<sup>56</sup> In this thesis, businesses are categorised into four sizes: *micro* (employing nine or fewer employees), *small* (10-49), *medium* (50-249) and *large* (250 or more employees) using the UK and EU definitions. This approach has advantages over other definitions, for example the industry-specific definitions used in the Bolton (1971) report, which employed different criteria based on norms in different industries, which make it difficult to compare firms between industries and over time, as these norms evolve.<sup>57</sup>

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<sup>56</sup> There is variation in what is considered *small* between industry sectors (Storey, 1994).

<sup>57</sup> Bolton (1971) defined small firms as all those employing fewer than 200 employees. A small firm also satisfied three economic characteristics: (1) possessed a relatively small market share; (2) managed by its owners in a personalised way, rather than through a formalised management structure; and (3) did not form a part of a larger enterprise with owner-managers being free to make decisions without outside control (p. 1, para 1.4). These conditions were operationalised through a statistical definition, which used criteria based on: (1) small firms as a proportion of all firms in the

UK government definitions of SMEs focus on the number of employees, excluding other criteria such as profit, sales, or loan size, irrespective of sector.<sup>58</sup> On the other hand the new EU SME definition uses two dimensions: the number of employees, and the annual turnover and/or annual balance sheet total.<sup>59</sup> Storey conceded that researchers tend to use their own definitions tailored to their own specific research questions (1994, p. 16). In the *Futuretrack* survey, data were available on whether the establishment in which the respondents worked was part of a larger organisation, and on the number of employees in the workplace / organisation as a whole. For this reason, the number of employees was used as the sole criterion for business size, in line with the UK definition.

The *Futuretrack* survey asked the following questions relevant to business size:

- How many people were employed in the workplace of the respondent's main job (9 or fewer; 10-24; 25-49; 50-99; 100-249; 250-499; 500-999; and 1000 or more).
- Whether the workplace is part of a larger organisation (Yes/No).
- How many people were employed in the organisation as a whole (same options as workplace size).

For the purposes of this thesis, the workplace data needed to be recoded into business size as a whole. When graduates were employed in workplaces not part of a larger organisation (i.e. stand-alone businesses), the responses were recoded into a new variable, *w4org\_size2*, which took four categorical values based on the UK business size categories: micro, small, medium, and large, as described above. When graduates were employed in workplaces which formed a part of a larger organisation the organisation size variable was used to recode the response into the *w4org\_size2* variable.<sup>60</sup>

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industry, (2) proportion of total employment in small firms, and (3) the average employment per small firm. See Storey (1994) and Curran (1986) for a critique.

<sup>58</sup> See, for example: <http://stats.bis.gov.uk/ed/sme/index.htm>

<sup>59</sup> [http://ec.europa.eu/enterprise/policies/sme/files/sme\\_definition/sme\\_user\\_guide\\_en.pdf](http://ec.europa.eu/enterprise/policies/sme/files/sme_definition/sme_user_guide_en.pdf)

<sup>60</sup> However, in the course of the interviews, some graduates questioned the pre-determined categories of business size used in this research project. For some of the graduates, the pre-set categories of business size were not reflective of their own experience. In several cases (Rob, Sam and Matt), although the graduates were classed as being employed in 'large' businesses according to the *Futuretrack* data, they themselves considered their employer to be or to feel like it was 'small' in the interviews. For the participants, their own perception of employer size was more important than an externally-imposed category for their experience of work. However, the external category did matter for looking at financial and other resource implications for companies. In cases where the

As SMEs are a large and heterogeneous group, this research focused on small businesses (at least 10 and fewer than 50 employees). Micro businesses with fewer than 10 employees are very likely to have an owner/manager structure and thus to ‘exhibit highly personalised and mostly informal management styles’ (Matlay, 1999), and so did not form the main focus of the project. Medium-sized businesses (50-249 employees) have been shown to adopt increasingly formal HR procedures as they increase in size (from around 100 employees) and thus approximate the organisation of large businesses (250 and more employees) and have a negative effect on job quality (Storey et al., 2010). However, small businesses, as defined above, generally have enough employees to prevent the business from being overly determined by the manager’s personality, but too few employees to foster the kind of formal HR practices observed in larger companies, and thus make an interesting business size group to study.

In the quantitative section of this thesis, the focus is on small business relative to micro, and medium-sized businesses, with large businesses as a basis for comparison. The qualitative section of this thesis looks at graduates’ experiences in small and large businesses only.

### 3.3.3 Private sector

Businesses can be categorised into belonging to private, public or not-for-profit sectors using different criteria. For example, different dimensions have been identified for comparing public and private sectors: the environment, the relationship between the organisation and the environment, and the internal structures and processes of the organisation (Rainey et al., 1976). In practice, it is often not possible to neatly classify organisations into sectors because some activities are difficult to classify and the sectors can overlap. In the *Futuretrack* survey, respondents were asked to classify their employers into public, private, or not-for-profit businesses, as below:

In which of the following types of organisation is your current main job?

- Public sector (e.g. Government department, health service, state education)
- Private sector (e.g. manufacturing company, management consultancy)

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company was *classified* as ‘large’ but *perceived* as ‘small,’ it usually had access to financial and other resources from parent companies that companies *classed* as small often lacked.

- Not-for-profit sector (e.g. charity, political party)
- Other (please specify other) – a text box was provided

During the data cleaning and preparation stage, responses in the ‘other’ category were cross-checked and a cleaner sector variable was created, which corrected for the majority of respondent misclassification. The private sector here primarily refers to public or private limited companies, but can also include companies limited by guarantee, the self-employed, and employees of trade unions. The public sector includes organisations that are funded or run by central or local government (consistent with the UK Labour Force Survey definition).

This thesis focuses on those employed in the *private sector* only. Initially, this research included graduates employed in the public, private and not-for profit sectors, and the regression analysis controlled for the sector. However, comments following a presentation based on an early version of the quantitative analysis (IER workshop, 5 March 2013) suggested that including government and other non-private sector organisations involved the inclusion of very diverse occupational groups, particularly from public sector professional employment, that obscured the less predictable and more interesting results that had emerged in the private sector sub-sample.

The main reason for restricting the sample to the private sector was to control for some common characteristics of private businesses likely to affect employment relations. From an economic theory perspective, private sector businesses aim to maximise profit, whereas public and not-for-profit sector organisations may prioritise other objectives. Looking at the private sector only helps control for some of the variables affecting employment relations. Other reasons for focusing on the private sector in this research were more pragmatic. First, government initiatives for SMEs as new graduate employers tend to focus on the private sector, rather than the public or not-for-profit sectors. Second, organisations in the public sector are much less likely to be small than those in other sectors.<sup>61</sup> This presents two methodological problems: first, the correlation between large businesses and the public sector could increase the likelihood of multicollinearity, which would understate SME effects on skill use. Second, searching for interview participants employed in the

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<sup>61</sup> Although given New Public Management decentralisation of financial accountability (e.g. to individual school level (Tolofari, 2005)) and other ‘quasi-market’ reforms this is less clear-cut than it once was.

public sector in small businesses in the qualitative part of the thesis would be made more difficult.

### **3.3.4 Associate professional occupations**

The associate professional major occupational group is currently a ‘battle ground’ for whether or not jobs have changed to become ‘graduate-level’ and so was especially appropriate as the occupation of interest for this research project. As discussed in Chapter 2 Section 2.3.3.2, the associate professional occupations are among the fastest growing occupational groups and employ the largest proportion of graduates outside the professional occupations. There is also considerable debate around whether the associate professional occupations may be called ‘graduate-level’: while graduate job classifications labelled about three quarters of this occupational major group as ‘graduate’ (mostly as ‘new’ or as ‘communicator’ type jobs), other research has questioned the extent to which the work has changed and the extent to which graduates’ skills were being used (Okay-Somerville and Scholarios, 2013; Chillas, 2010; Rogers and Waters, 2001). In the quantitative section of the thesis, the associate professional occupations and other major occupational groups are compared to the professional occupation baseline (see Section 3.5.3.4 for more details). In the qualitative section, the associate professional occupations form the sampling frame for graduate interview participants (see Sections 3.3.5.2, and 3.5.4.2).

### **3.3.5 Graduates**

This thesis focuses on graduates’ perceptions of knowledge and skill utilisation and early career development for the following main reasons. First, as has been argued and extensively demonstrated in Chapter 2, graduates now face a difficult labour market. They face increased competition for graduate jobs because of the increase in HE participation (see Section 2.2) and limited expansion of ‘traditional’ graduate-level jobs. They are also bearing an increasing proportion of the costs of HE, albeit via state-subsidised student loans. Graduates are also navigating a post-recessionary, segmented labour market (see Section 2.3), which provides them with questionable opportunities to use their skills. Second, research about graduate employment in small firms has tended to look at employer experiences more than at graduate employee experience (see Section 2.5.3). Given the government’s renewed focus on graduate employment in SMEs (e.g. Sear et al., 2012), it is worth asking how graduates themselves experience employment in small firms and how they think it contributes to their career development (see section 1.3). However,

the exclusion of employer perspectives in this thesis is a limitation of the research, and is further addressed in Chapter 10, Section 10.5).

#### 3.3.5.1 Quantitative phase

For the quantitative phase of the study, graduates were selected from the *Futuretrack* Stage 4 survey, which had 17,075 usable responses in total. Compared to the 121,368 usable responses collected at Stage 1 of the survey, conducted between May and December 2006 when respondents were applying to HE, this roughly corresponds to a 14% retention rate. Most of the attrition took place between Stage 1 and Stage 2 – one year into HE study or equivalent for those who did not go on to HE – when 49,555 responses were collected, followed by 26,554 responses in Stage 3 conducted in the last year of a three- or four-year undergraduate degree course or equivalent. However, at every stage, new respondents from the same cohort (2005/06 HE applicants) were recruited to the study to boost numbers. In stage 4, new entrants constituted 2,163 of the 17,075 responses. Please see the *Futuretrack* Stage 4 Technical Appendix for more information (Purcell et al., 2013, pp. 195-203).

First-degree graduates were selected to avoid including employment effects from postgraduate education in the data. The majority of research studies of graduate employment tend to amalgamate first-degree and subsequent degree graduates (master's or PhD-level, 'postgraduates' hereafter). However, including postgraduates can distort some of the implications of the relationship between education and employment outcomes, for the reasons set out below.

From a human capital perspective, increasing the investment in education and training will lead to higher returns to the individual, which implies that postgraduates can expect to get a higher return on their education compared to first-degree graduates, for example in the form of salary and/or job type. Signalling theory suggests that individuals take on additional levels of education to 'signal' their levels of ability to prospective employers, which implies that high-ability individuals able to invest in their education to a greater extent will do so (low-ability graduates will be unable to study high-level qualifications). This, however, may be made more complicated in the presence of fees for postgraduate education, an absence of a student-loan type system, and the finding that some graduates thought that their postgraduate study options were limited by loans (Purcell et al., 2013). In particular, the decision to go on to postgraduate study was found to be associated with socioeconomic

background, more ‘prestigious’ HEI type, and studying subjects leading to higher-paying jobs (what Purcell et al. (2013, p. 192) referred to as the “cumulative pattern of advantage”).<sup>62</sup> For these reasons, graduates who had gone on to do a postgraduate qualification were excluded from this study.

Thus, the thesis sample comprised first-degree, UK-domiciled, UK-educated graduates, who were employed in the private sector at the time of fourth wave of the *Futuretrack* survey, which resulted in 4,572 usable responses. See Section 3.5.3.2 for descriptive statistics of the graduate sample used in the quantitative phase.

### 3.3.5.2 Qualitative phase

This section gives a definition of the sample of graduates used in the qualitative phase of the thesis, and so only a summary is presented. For more detailed information about the composition of the sample, please see Section 3.5.4.2. The available group of *Futuretrack* respondents who agreed to be contacted for further research was 1,631 out of 4,572 (36%).<sup>63</sup> I wanted to select participants for interview who were working in similar jobs in small businesses and large businesses to isolate the effect of business size as much as possible. I targeted graduates employed at the same SOC 2010 three digit (minor group) level in the Sales, Marketing and Related Associate Professionals (minor group 354) and the Public Services and Other Associate Professionals (minor group 356) because these were the occupational groups with a large enough number of respondents employed in both small and large businesses (see Appendix B Table B.1, Table B.2, and Table B.3).<sup>64</sup> Respondents employed in small businesses were deliberately over-sampled.

Graduates employed in small businesses in the selected minor occupational groups were contacted first (N=49) in order to let their occupations set the selection criteria for graduates employed in large businesses. The sampling frame and the resulting responses are shown in Table 3.1. Thirteen graduates employed in small businesses agreed to take part in the interviews, over half of whom were marketing associate professionals (SOC

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<sup>62</sup> In the case of jobs, some graduates may decide to go on to postgraduate study because certain occupations, particularly in the traditional graduate jobs, require a postgraduate qualification as an entry route (Purcell et al., 2005). The same report (*Class of '99*) also found an association between postgraduate study and lower earnings; although this is likely because of a delay in the postgraduates joining the labour market compared to first degree graduates.

<sup>63</sup> *Futuretrack* respondents opted in to if they wanted to be contacted for further research.

<sup>64</sup> Using SOC 2010 and IER’s Cascot® software. After my experience in the pilot study, I anticipated a low response rate for interviews from the *Futuretrack* graduates.

2010 unit group 3543). Then, graduates employed in the same occupations in large businesses were contacted (N=36, a random subsample selected from a possible 131 respondents).<sup>65</sup> Seven out of the 36 graduates contacted agreed to take part in the interviews. The subsample was necessary because otherwise the number of graduates in large businesses contacted would have been almost three times greater than that in small businesses, which would have led to a loss of focus on the small business sector.

**Table 3.1: Sampling frame and resulting responses for graduates’ interviews sample selection**

SOC 2010	Generic occupation title	Small employer		Large employer	
		<i>Sampling frame</i>	<i>Responses</i>	<i>Sampling frame (subsample)</i>	<i>Responses</i>
3542	Business sales executive	7	1	21 (0)	0
3543	Marketing associate professional	21	7	50 (21)	4
3544	Estate agent and auctioneer	2	1	0	0
3545	Sales accounts and business development manager	9	1	26 (8)	2
3562	Human resources and industrial relations officer	7	1	27 (6)	1
3563	Vocational and industrial trainer and instructor	3	2	7 (1)	0
<b>Total</b>		49	13	131 (36)	7

In all, 20 graduates agreed to participate in the interviews out of the 85 graduates contacted, an overall response rate of 24% (27% for those in small firms and 19% for those in large firms). Such a response rate is low but acceptable, and has been used in similar research (for example, comparable to Yorke, 2006, 22%; Arnold et al., 2002, 25%). One reason for this low response rate may be the gap of almost one and a half years between graduates’ survey participation and the interview invitation.

The 24% response rate and the deliberate targeted sampling method adopted led to limitations in the types of graduates recruited for interview. The resulting sample of 20

<sup>65</sup> Note that no graduates employed in large businesses in occupation 3542 were contacted – the graduate employed in a small business in this occupation responded after the invitations to graduates employed in large businesses were sent out.

graduates were predominantly ‘elite’: those who attended highest- or high-tariff point universities (see Purcell et al., 2009)<sup>66</sup> and had achieved first class or upper second class degrees. The predominance of such graduates in the sample prevented a comparison of whether the educational and socioeconomic background of the graduates affected their experiences of skill utilisation and career development. The composition of the sample, the extent to which it met the sampling criteria, and its implications for research are discussed in Section 3.5.4.2.

### 3.3.6 Skill utilisation

As discussed in Section 2.4, skill utilisation has been conceptualised and measured in a number of ways. This thesis adopted matching-based approaches to skill utilisation rather than HPW-based measures (see Section 2.4). In line with other researchers (e.g. Green and Zhu, 2010; Chevalier and Lindley, 2009; Battu et al., 2000; Gallie, 1994), selected *Futuretrack* survey questions were used to focus on different aspects of skill utilisation.

Using the available questions in the *Futuretrack* survey and with reference to the literature, skill utilisation could be measured in four main ways: (1) whether the graduates used (a) skills and (b) knowledge developed during their undergraduate degree in their current main job; (2) the extent to which the graduates were required to use selected specific skills in their current job; (3) whether the job required a degree (specific or general), and (4) whether the graduates reported high levels of job appropriateness (how appropriate they thought their job was for someone with their skills and qualifications).

The *Futuretrack* questions relating to the measures above are listed below:

**1(a):** *a#\_skills:*<sup>67</sup> *Do you use the skills developed on your undergraduate degree programme?*

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<sup>66</sup> The tariff point HEI classification was based upon the average tariff scores required to access undergraduate courses at the HEIs. The data was used from *Futuretrack* wave 1 in conjunction with UCAS. The highest-tariff group consists of the vast majority of the Russell Group universities and a small number of other pre-1992 universities, and small number of other HEIs, while the high-tariff group consists of the remaining Russell Group universities, most other pre-1992 universities, and other HEIs. See Purcell et al. (2009) for more detail.

<sup>67</sup> Where # refers to the activity history number since October 2006 corresponding to the graduates' current jobs (e.g. A graduate who completed university in July 2009 (activity 1); did a 2-month internship (activity 2); and then got a job in a bank on a graduate scheme (activity 3) which she was still doing at the time of the *Futuretrack* survey would be coded as activity 3).

**1(b): a#\_knowl:** Do you use the subject/discipline knowledge you acquired on your undergraduate degree programme?

**2: Q33:** To what extent are you required to use the skills and capabilities listed below in your current job? (Not at all; some; a lot). The list comprises:

- |                              |  |
|------------------------------|--|
| a. Written communication     | g. Innovative thinking                   |
| b. Spoken communication      | h. Entrepreneurial skills                |
| c. Numerical analysis skills | i. Ability to work in teams              |
| d. Critical evaluation       | j. Ability to work individually          |
| e. Research skills           | k. Ability to manage my time effectively |
| f. Presentation skills       |  |

**3: a#\_req:** Were any of the following qualifications required for this job? Please select ALL that apply.

Option 2: an undergraduate degree in a particular subject

Option 3: an undergraduate degree in any subject

**4:** On a scale of 1 to 7, where 1 means 'ideal' and 7 means 'very inappropriate,' how appropriate do you think your job is for someone with your skills and qualifications'?

Measures 1(a) and 1(b) can be viewed as the *general* skill and knowledge use question (e.g. Green and Zhu, 2010), while measure 2 focuses on *specific* skills and competences required (e.g. Salas Velasco, 2010; Nabi, 2003). Measure 3 may be thought of as a self-reported qualification match variable. Similar subjective qualifications-match instruments have been used in the literature (e.g. Nabi 2003; Battu et al., 2000). Lastly, measure 4 is an explicitly subjective skill mismatch question, similar to that used by Chevalier and Lindley (2009), and included in the WERS 2011 survey of employees (B4: "How well do the work skills you personally have match the skills you need to do your present job?"). However, it should be noted that 'appropriateness' does not always specify a graduate-level job and depends on the graduates' reference groups: for example, as Purcell and Elias (2015) pointed out, fine arts graduates working in low-paid non-graduate jobs in museums or art galleries may view their jobs as appropriate if they view these jobs as essential stepping stones towards a career job.

These measures capture only certain aspects of skill utilisation. All of these measures, and all responses in the survey, are respondents' perceptions (see Section 3.5.1 for advantages and limitations of survey data). The *Futuretrack* survey does not ask respondents to provide examples of how they used skills at work. This aspect can be obtained through interviews, by asking participants to give examples of using different skills, or to explain what these skills mean to them.

In the interviews, the skill utilisation question was explored further by asking graduates to explain what they meant by degree skills and knowledge, to give examples of using selected specific skills (research skills and innovative thinking skills), and to talk about whether they had any skills or knowledge which they did not have the opportunity to use. Research and innovative thinking skills were selected from the list of 11 skills to be followed up in interviews because an earlier version of the quantitative analysis found that there was a positive association between smaller businesses and the likelihood of using these skills 'a lot' of the time (Luchinskaya, 2013).

The graduates were also asked about their job description and whether they did tasks outside that description, and if so, why, and at what level (more senior or more junior type of tasks). This question is similar to that used in the WERS 2011 Survey of Employees (C1: "To what extent do you agree or disagree with the following statements about working here? Using my own initiative I carry out tasks that are not required as part of my job."). It attempted to elicit responses about the opportunity to use skills beyond those required for the job (i.e. to develop the job).

### **3.3.7 Career development**

Section 2.3.2 discussed the current issues relating to graduates' career development: in particular the balance between individuals' and organisations' responsibilities for career management and the changing notion of the meaning of career. In a small business context, the literature highlighted that there may be some differences in aspects of career development between small and large businesses, in particular the differences in types of training, with smaller businesses being less likely to use formal training courses, more likely to use informal on-the-job learning and socialisation, and having more limited internal labour markets compared to large businesses.

Career development was investigated in the qualitative phase of the study through interviews. I was interested in graduates' accounts and experiences of career development with reference to their employer and their overall experiences of work, which was not possible to analyse in a quantitative way using the *Futuretrack* survey. The *Futuretrack* survey responses could be and were used as a comparison with interview participants' accounts of their career development in the qualitative phase. The emphasis was on career development as a dynamic process (Bimrose et al., 2011), which was not captured in the *Futuretrack* survey, as explained below.

The *Futuretrack* survey offered some limited possibility for looking at the effects of business size on career development. Although *Futuretrack* did collect respondents' work histories, business size was not included for previous jobs, only for the respondents' current main jobs.<sup>68</sup> This omission precluded an investigation into the differences between the work histories of graduates who started working in small and in large businesses.<sup>69</sup> The survey did ask some questions relating to perceptions of career development, but not specifically about the career development at their job or their experience of career development to date. These questions may be viewed as aspects of *career clarity* – the clear perceptions of career possibilities open to individuals and the ways of attaining them (Scholarios et al., 2003, Arnold and Mackenzie Davey, 1994). These questions were:

*(Q19) Why did you decide to take your current main job? Please select ALL that apply.*

*(7) To gain experience in order to obtain the type of job I really want*

This question could be a proxy for career development, but only in relation to the reason why the respondents took the current job, and not why they decided to do previous jobs.

*(Q34) On a scale of 1 to 7, where 1 means 'completely satisfied' and 7 means 'not satisfied at all,' how satisfied do you feel with the following aspects of your job?*

*(a) Promotion or career development prospects*

*(b) Opportunity to use your own initiative*

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<sup>68</sup> *Futuretrack* work history information included job title, employer name, qualifications required, and whether the respondents used the skills and knowledge they developed on their degree at the job.

<sup>69</sup> Business size was included in graduates' work histories in the *Seven Years On* and *Class of '99* questionnaires, which could be used to conduct such a study, for example looking at occupational mobility and investigating whether the size of employers mattered.

These questions are really about *satisfaction* with career development rather than *experience* of career development. Option f (opportunity to use your own initiative) could be used as a proxy for the ability to take initiative and make decisions at work, which may include taking responsibility for career development, although the link is tenuous.

*(Q37) On a scale of 1 to 7, where 1 means 'strongly agree' and 7 means 'strongly disagree,' where would you put yourself in relation to the following statements?*

*(a) I have a clear idea about the occupation I hope to have in 5 years' time and the qualifications required to do so*

*(b) I am optimistic about my long-term career prospects*

*(c) I have the skills employers are likely to be looking for when recruiting for the kind of jobs I want*

This question focused on respondents' career plans and prospects in the future, but did not ask what these were, nor did it ask about the extent to which respondents considered their current (or previous) job(s) helpful towards attaining these career goals.

*(Q42) As far as long-term personal values are concerned, how important to you are the following? (1-5 scale, 1 = very important, 5 = unimportant)*

*(a) Career progression*

*(c) Doing a job where I am able to develop my capabilities*

This question does look at the extent to which respondents valued career progression and developing their capabilities, but these were not linked to the job the respondents were currently doing.

The interviews generated data on qualitative dimensions of career development by asking graduates about how their job has changed since they completed the survey (in most cases the graduates changed employer), the evolution of their main tasks and responsibilities in their job, their experiences of promotion and of career development (no definition of these terms was given), and respondents' reasons for deciding to change jobs. It should be noted that the interviews contained an element of flexibility as well as having a question schedule, so the research contained a mix of anticipated and unanticipated questions and findings. The interview design and analysis is discussed in more detail in Section 3.5.4 and the interview findings are discussed at length in Chapters 8 and 9. Before the final research

methods are discussed, Section 3.4 below presents a discussion of alternative methods considered but not pursued.

### 3.4 Consideration of alternative research methods

At the outset of this PhD project, methods considered for the qualitative phase of the study, which were not used in the main study, were solicited online diaries and structured observation. Solicited online diaries were trialled at the pilot stage and at the early part of the main study, but not continued in the main study. Structured observation of selected work environments was considered at the research design stage, but was not used at all.

#### 3.4.1 Solicited online diary methods

Online diaries (Alaszewski, 2006) were investigated as a potential method, both in the pilot study and in the early part of the main study. Research ‘diaries’ range from completely researcher-solicited quantitative time- or event-based record used in psychological research, to completely unsolicited existing personal diaries (*journal intime* (Lejeune, 2000)). In this thesis diaries were intended to take the form of researcher-solicited online journals about the topic in question (Alaszewski, 2006; Elliott, 1997).

Existing research studies that have used qualitative diary methodology investigated a variety of people’s lived experiences, from managing health problems (Elliot, 1997) to the construction of meanings of everyday life among young people in Estonia (Kaun, 2010). The main advantages of the researcher-led diary method are that it is possible to ask participants to note down events which may otherwise be unobservable, or where the presence of the researcher may affect observation. The participants must have a certain level of competence in reading and writing in order for the diaries to yield useful data (Jacelon and Imperio, 2005), but in the case of UK university graduates this requirement was fulfilled.

The qualitative diaries in my PhD project would have supported interview data by asking participants to write about their work tasks and the skills they used over a period of time. The benefits of this approach would have been more examples of the use of skills and of the variety of the participants' job role, which would have complemented the interview data. The diaries would have also provided a more longitudinal picture of respondents’ work, rather than the cross-sectional ‘snapshot’ provided by the interview, and, as

described in the pilot study, the diary with one of the respondents was used interactively (diary prompts were influenced by previous diary entries) and provided interesting findings.

However, there were several drawbacks to implementing the diary method, discovered at the pilot stage and at the early stage of interviewing graduates in the main study. First, most interviewees declined to participate in the diary study because of the time commitments required. Second, some of the respondents who did opt into the diary study later reconsidered and opted out before completing any entries. Third, of the two respondents who did complete the diary entries, one provided terse descriptions of work tasks which varied little between the entries. The main problem with the diary aspect of the study was that it was too divorced from the interviews, in contrast to the diary-interview method where the diary serves as a prompt for the interviews, and maintains a relationship between the researcher and the participants. Ultimately the diary study required a much greater time investment than I could afford to make in the time constraints of the thesis, and was not continued in the main study.

### 3.4.2 Structured observation

Observation methods are central to ethnographic research, predominantly used in anthropology, but increasingly used across many disciplines, including sociology and business research (Watson, 2011).<sup>70</sup> For some scholars, participant observation is a technique for data collection (e.g. Tope et al., 2005) while for others it is a broader approach, which can encompass interviews and documentary data analysis (e.g. J. Mason, 2002; Park, 1999).<sup>71</sup>

The main strengths of observation methods are the detail, depth and variety of dimensions of data generated by the researcher who experiences it as that data occurs in its natural setting, in contrast to interview data (see Section 3.5.4.4) where the events being asked

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<sup>70</sup> This Section is adapted from my qualitative research assignment, submitted as part of my doctoral training in April, 2011.

<sup>71</sup> Conventional observation studies identify several role types that a researcher might adopt: 'complete observer,' 'observer-as-participant,' 'participant-as-observer' and 'complete participant' (Junker, 1952 in: Gold, 1958). However, the notion that these roles *exist* has been challenged, replaced instead with the idea that these researcher roles are *constructed* and that the field researcher "routinely tries to fit himself into as many roles as he can, so long as playing them helps him to develop relationships with informants in his master role (i.e., participant-as-observer, etc.)" (Gold, 1958, p. 219). Subsequent research and the emergence of reflexive perspectives have challenged the view that there *are* roles which a researcher may want to adopt, or even that there is a continuum along these roles (Tedlock, 1991).

about occurred in the past. The degree of access the researcher may have as an ‘insider,’ which may increase over time as trust and relationships are built, and the ability to observe phenomena which may not be visible through other methods are other important advantages. One main practical disadvantage is that observations are difficult to arrange and take a lot of time.

Initially, I considered that it would be possible to use Mintzberg’s approach of *structured observation*, which “couples the flexibility of open-ended observation with the discipline of seeking certain types of structured data” (Mintzberg, 1970, pp. 89-90) to fit the time available. Mintzberg used this approach to find out what managers do, observing CEOs of five organisations, each for a one-week period. The observations (particularly verbal or written communication) were categorized by duration, participation, purpose and other factors, and the categories were developed *during* the observation period. From his records, as well as additional anecdotal information and materials collected during the observation period, Mintzberg was able to develop a more accurate and academically useful framework of what managers did at work compared to previous research, even in the relatively short observation time.<sup>72</sup>

Ultimately, the observation method was dropped from the study. The observation method was not selected because the observations would be limited to a very small number of cases and would require a large time commitment. This may have been possible in a single-method study, but proved unsuitable for a mixed-methods PhD thesis. However, the data generated through participant observation would have shed some helpful light on the

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<sup>72</sup> Interestingly, Mintzberg contrasted his structured observation approach to diary studies of managers’ activities (e.g. Stewart, 1965; Carlson, 1951 in: Mintzberg, 1970). He considered diary studies to be lacking because in order to develop categories and headings for the diary form the researcher must already know what managers do. Hence, “*all [the researcher] will learn is the distribution of activities he already believes the manager is performing*” (1970, p. 88, [emphasis in original]), whereas when conducting structured observation, the researcher’s categories are influenced only by the observed event. Several things should be mentioned with respect to this point. First, the diary studies intended for this thesis were much less prescriptive than the forms used for management research as described by Mintzberg. Second, structured observation is not as free from influence as Mintzberg suggested: the researcher must decide what to look for, and will be to some extent informed by literature, presumably having undertaken a review of the field prior to study. Third, the dangers of using pre-prepared categories in finding out what managers do connects with the point made by Holmes (2000) on using lists of skills in skill utilisation research – that skill lists in various forms go between researchers, graduates and managers, ranked in different ways, but ultimately giving no understanding of how these skills are used or whether the same thing is understood by these different skills.

culture and the nature of work in small businesses. This method could be used in further research on this topic, with more available resources.

### 3.5 Final research methodology

The final research design consisted of (1) a statistical analysis of first-degree UK graduates employed in the private sector in the UK (including factor analysis, ordinary least squares and logistic regression), and (2) telephone interviews with a specifically selected sample of 20 graduates employed in associate professional occupations in small and in large businesses. The advantages and limitations of these data are discussed below, and the chosen methods are explained in more detail in Sections 3.5.3 and 3.5.4.

#### 3.5.1 Survey data

##### 3.5.1.1 Advantages and limitations of surveys

Survey data can be an effective tool for gathering a lot of information in a relatively cost-effective way. The survey is a tool to collect *systematic* data that can enable systematic comparisons between different cases on the same characteristics (de Vaus, 2013, p. 6). For this thesis I did not have to design my own survey, although I did assist with the research team with the *Futuretrack* stage 4 survey design and dissemination. The data analysis was therefore conducted on what could be called secondary data, because the survey instruments were not designed specifically for my research topic. The main challenge was to think of ways in which the *Futuretrack* data could be used to address my own research questions (Allum and Arber, 2008). Fortunately, the *Futuretrack* survey was designed to collect data on respondents' paths through education and employment, and so was not too far removed from my own research on graduate skill utilisation in different sized businesses. Justification for using the *Futuretrack* survey rather than other data sources was provided in Section 3.3.1.

There are several important advantages of using surveys such as *Futuretrack* to look at overall patterns in graduate employment and skill utilisation. First, the sample was nationally representative. Although in the fourth wave of the survey there were more women than men and more respondents who achieved higher UCAS tariff points compared to the population of 2005/06 HE applicants, weights were constructed to correct for this imbalance. Second, the sample was large enough to be able to carry out detailed comparisons of first-degree graduates from different HE backgrounds and employed in

different jobs in the labour market. The sample size of just over 4,500 graduates enabled regression analyses which could investigate whether business size had an effect on skill and knowledge use while controlling for occupation, industry, and personal characteristics. This was especially important as this kind of analysis was missing from the research literature as discussed in Section 2.6.

However, there are several drawbacks worth bearing in mind. First, the survey was completed by the graduate respondents, so information about business size, skill levels, and jobs are all subjective graduate perceptions. This is not a problem in itself, but conclusions and other claims in the findings must bear in mind that these data are self-reported, and depict not how things actually are, but how the respondents think they are. With respect to the measurements of skill utilisation set out in Section 3.3.6, using worker self-assessment for measures of job skill requirements has advantages and disadvantages (Allen and van der Velden, 2005), further discussed below.

#### *3.5.1.2 Self-assessment in surveys*

The advantage of self-assessment is that workers are likely to know more about themselves than the researcher as outside observer would know about them, although this knowledge may be imperfect. From a practical perspective, self-assessment data are also relatively easy to collect through surveys for a large number of people. However, the problems of using self-assessment data include: the possibility of intentional or unintentional measurement errors, limitations of or differences between respondents' understanding of the questions, and the *anchor problem* of gauging ordinal categorical values (e.g. how different participants interpret a category such as 'a lot of the time'). These issues can be overcome. First, it is possible to reduce measurement errors by making survey instruments as clear and unambiguous as possible. Allen and van der Velden (2005) suggested that,

*In the case of skills, the challenge is to formulate items that have a clear and uniform meaning to all graduates, to avoid items that are composites of several underlying dimensions, [and] to choose items that are conceptually distinct from other skills. (p. 13)<sup>73</sup>*

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<sup>73</sup> The authors also suggested "formulat[ing] the items in such a way as to tap into the feelings graduates have about their own (lack of) abilities." (2005, p. 13) but advised caution in attempting to elicit an emotional response – this piece of advice was therefore omitted from the quotation.

It was very fortunate that I was able to work with the *Futuretrack* research team, which consisted of extremely experienced researchers who had a lot of expertise in designing such surveys, which would have minimised measurement error.

Regarding the anchor problem, Allen and van der Velden (2005) suggested possible solutions, of which anchoring by required skill level. This approach involves measuring respondents' skill levels possessed and the skill levels required for their jobs on the same scale, and comparing the discrepancies between respondents' acquired and required levels of skill (between groups or individuals). The advantages of this approach are that it is easy to administer and that it specifically looks at perceived skill mismatches – this approach can be used for lists of different skills. In the *Futuretrack* survey this can be partly achieved.

The *Futuretrack* survey asked respondents to rate the extent to which a skill/attribute was developed on their HE course and the extent to which it was required in their main current job (see Section 3.3.6). However, the extent to which a skill was developed on the course is not identical to graduates' perceived possessed level of that skill. The *Futuretrack* survey did ask another, similar question, asking the respondents to rate themselves on a list of skills, which would give an indication of the respondents' perceived possessed skill levels. However, the skill level list did not directly match the list of skills required at work (or of skills developed on the HE course). One of the attributes on the skill level question list, self-confidence, was positively correlated with skills developed at university and skills required at work, and differed between respondents' characteristics such as gender and ethnicity, and was used as a control variable in the skill utilisation regression models as an internal, intra-subject anchor. Anchoring in this way, however, did not give an external anchor to skill levels, which did not completely resolve the problem of different understandings of values such as 'very high' or 'a lot of the time' between respondents.<sup>74</sup> The interviews in the qualitative phase of the study were able to explore some of these understandings in more detail.

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<sup>74</sup> Allen and van der Velden (2005) discussed two other anchoring solutions: *ex ante expert anchoring* (where the researcher comes up with a clear answer scale featuring examples and illustrations familiar to respondents to converge respondents' understanding of the anchors, e.g. Ward et al. (2002)) and *inter-subject anchoring* (respondents are asked to rate themselves *as well as* imaginary subjects described in examples, which are used to adjust respondents' scores, e.g. King et al. (2004)). However, both of these approaches were labour-intensive and complicated to implement in large surveys.

### 3.5.2 Interview data

Interviews are a widespread method in qualitative research and in mixed-methods studies, and can have a variety of purposes, from finding out about respondents' preferences through to experiences of aspects of social life. Qualitative interviews have been conceptualised as a "dialogue" (J. Mason, 2002, p. 62) or as "conversations with a purpose" (Burgess, 1984, p. 102), which can generate qualitative data about people's perceptions and constructions of reality and help understand others (Punch, 1998, pp. 174-5).

Qualitative research in general treats knowledge as situated in a context, and the role of the interview in investigating qualitative research questions is to identify the relevant contexts for situated knowledge to be produced (J. Mason, 2002). Interviews can go beyond the limitations of survey data by accessing the reasons why respondents selected particular categories and asking them to elaborate on particular situations, or give examples of particular experiences. When used in combination with survey data, interviews can help to substantiate the quantitative information with qualitative insight (Creswell, 2002). Interviews are often loosely grouped into *structured*, *unstructured*, and *semi-structured* types (e.g. Brinkmann, 2014), depending on the extent to which the questions the interviewer asks are prepared in advance and the degree of flexibility in the course of the interview.

#### 3.5.2.1 Structured and unstructured interviews

In structured interviews the researcher typically asks respondents a pre-prepared list of questions which are administered to all respondents in the same way and allow little or no room for interviewees to deviate from the interview script. Structured interviews are best suited to gathering a large amount of relatively simple, descriptive data, which may be easily quantified, and easily replicated, and are in some ways similar to surveys (Brinkman, 2014). Such interviews are useful for collecting standardised information to test hypotheses or for establishing an overview of a field to be followed up with less structured, more qualitative-based interviews. However, structured interviews lack the capacity to generate richer data about individuals' experiences, thoughts, or meanings, and are not suitable as a method for answering research questions involving these issues. These types of interviews are not typically used as the main research method in in-depth qualitative research.

In contrast to structured interviews, unstructured interviews such as life-course or narrative interviews, have little pre-prepared questions or pre-set structure (Brinkman,

2014). Instead, the researcher may define an area of research interest in advance, but more specific data will arise during the interview with the respondent. The respondent usually directs the main flow of the interview, while the researcher would listen to, and sometimes prompt, the respondent. Compared to structured interviews, in-depth data can be generated and the respondent's voice is given a lot of importance. However, conducting completely unstructured interviews can be time consuming, and the findings can be difficult to analyse and to replicate in other studies. Limitations to reliability of results can be partially overcome by the researcher stating clear reasons for drawing particular conclusions from the interviews (Arksey and Knight, 1999).

### **3.5.2.2 Semi-structured interviews**

Semi-structured interviews can be viewed as straddling the ground between the two types of interviews described above. The interview respondent is freer to direct the interview, while the researcher is freer to follow up on interesting themes and to be more visible in the knowledge production process compared to the structured interview. Compared to the unstructured interview, the researcher is more able to focus the interview on the research topic of interest and to ask key questions, which enable some level of comparability between responses (Arksey and Knight, 1999). One broad working definition of semi-structured (and relatively unstructured) qualitative interviews is given below. This definition is useful because it highlights the purpose and content of the interviews, and the respective roles of the researcher and interview respondent in knowledge production.

*[S]uch interviews are structured by the interviewer's purpose of obtaining knowledge; they revolve around descriptions provided by the interviewee; such descriptions are commonly about life world phenomena as experienced; and understanding the meaning of the descriptions involves some kind of interpretation. (Brinkmann, 2014:288, emphasis in original)*

### **3.5.2.3 Justification for the semi-structured interview method**

Semi-structured interviews were selected as the most appropriate research method to explore graduates' experiences of work in small and in large businesses. Structured interviews would not have provided sufficient depth about what the graduates thought about their opportunities for using skills at work or about their career development. In contrast, unstructured interviews ran the risk of not being focused enough on the particular topics, and of being difficult to compare responses to see whether any business

size-related patterns emerged. In addition, previous graduate labour market research studies conducted at the IER, such as *Seven Years On* and *Class of '99*, have successfully used the semi-structured interview format. This PhD study developed an interview schedule partially informed by the schedules used in these existing studies, which also facilitated comparability with the previous graduate cohorts.

It is important to consider the role of the researcher when planning, conducting, and analysing interviews because, from an interpretivist perspective, the knowledge produced through any interview method is always situated (J. Mason, 2002). Two main issues relating to the role of the researcher are the power asymmetry between the researcher and the interview subjects, and the researcher's contribution to the interview. The power asymmetry can affect knowledge production when there are large differentials between the researcher and the interview participants, such as sex, educational attainment and occupations, but can also arise through the researcher's legitimised role as the informed expert (Kvale and Brinkmann, 2009). The researcher's contribution to the interview was partially highlighted in the discussion above; in semi-structured interviews the researcher can probe on key questions and direct the flow of the conversation, and in general, the presence of the interviewer can affect the kind of data generated through the interview process (Wertz, 1984).

In the context of this research, the power differences were small.<sup>75</sup> The interviews were relatively unaffected regarding the power asymmetry stemming from the expert knowledge of the research question being investigated. The vast majority of graduates interviewed had some opinions about working in small businesses and in large businesses, either from their own experiences or from the experiences of their friends and families. Regarding the use of specialist terminology, for example 'skills' and 'knowledge,' I asked the graduates to explain what these terms meant to them, and prefaced my interview question with the statement that we had collected this information using the *Futuretrack* survey and were looking for examples of the meanings of these concepts to improve our understanding of the differences between the responses to these questions in the survey.

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<sup>75</sup> Those invited to participate in the interviews could check my details on the IER website using a link provided in the invitation letter. The vast majority of interview respondents had attended high or highest tariff universities and achieved 2.1 or 1<sup>st</sup> class degrees, and were employed in associate professional occupations. See this chapter, Section 3.5.4.2, and Chapter 7 for an overview of the interview sample respondents.

Moreover, the graduates were familiar with and interested in the broad topic of study having participated in the *Futuretrack* survey in 2011 and having agreed to participate in the interview.

Regarding the role of the researcher, one issue which tended to occur in the interviews was that the respondents sometimes prefaced their answers with phrases like ‘I don’t know if this is relevant, but...’ or ‘you may find this interesting...’. I had stated my main research interests and broad interview themes to the respondents in advance of the interview, but had not shared with them my interview schedule, as suggested in Burke and Miller (2001).<sup>76</sup> I had also directed potential respondents to my project webpage, which contained more detailed information about my research questions and research approach. The respondents therefore had an idea of the sorts of things that I would or would not be interested in – in fact there was nothing in which I was not interested. More often than not, the ‘I don’t know if this is relevant’ responses gave some very interesting information, such as graduates setting up their own businesses, or discussing career paths for other graduates in the company.

One problem with conducting interviews with graduates about their experiences of work they were doing at the time of the *Futuretrack* survey was that over a year had passed since they completed the survey. Knowledge collected through interviews is always (re)constructive of participants’ experiences (J. Mason, 2002) but the more time elapses between the survey and the interview, the more interview accounts will be based on retrospective reconstructions with reference to their current job. As will be discussed in Section 9.4 most participants changed jobs since the survey by the time of the interview, and all respondents experienced a change in their responsibilities, so some of the jobs that they were remembering were remembered post-facto from a different context.

#### **3.5.2.4 Justification for telephone interviews**

Interviews can be carried out in different ways, the most common being a face-to-face or in-person interview, the telephone interview, and internet interviews through VoIP software such as Skype®, instant messaging and email. The latter two media types involve written communication and the others – spoken communication. In this project, the telephone was selected as the main interview medium, because it was cost-effective,

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<sup>76</sup> See Appendix 0 for a more detailed description of participant selection.

diminished power asymmetries and was flexible and practical to carry out. The discussion below explains why other interview media were not chosen for this project, and discusses the advantages and disadvantages of telephone interviews.

The main advantage of using text-based internet interview media such as email and instant messaging is that it would have created ready-made transcripts (“self-transcribing,” (Kvale and Brinkmann, 2009, p. 149)). However, these media were not selected for this PhD project. The main disadvantages were that it would have been more time consuming for both researcher and interviewees to generate the same amount of information through typed text than through speech, and, in the case of email, some of the immediacy and spontaneity of the interview conversation would have been lost (Opdenakker, 2006). The usually mentioned disadvantage of interview participants being required to possess a certain minimum level of written communication and computer literacy (e.g. Burns, 2010) would not have applied to the sample of young university graduates who typically have good levels of computer literacy (for example, over 90% of Futuretrack finalists rated themselves as at least ‘good’ on their computer literacy skills (Atfield and Purcell, 2010)).

Both face-to-face and telephone interviews would have been appropriate media for this project. In qualitative methodology literature, telephone interviews are typically viewed as ‘second-best’ compared to face-to-face interviews, although the evidence on telephone interview effectiveness has been limited (Novick, 2008). The often-cited advantage of face-to-face interviews over telephone interviews is that they provide the greatest opportunity to observe non-verbal social cues such as gestures, body language, and facial expressions (Brinkmann, 2014; Shuy, 2003). Although some social cues, such as intonation and tone of voice, can be observed through a telephone conversation, the range of such cues is reduced.<sup>77</sup> However, the lack of breadth of non-verbal cues only becomes a major research impediment if these cues form an important focus for analysis in the study (Opdenakker, 2006), which was less the case in this PhD project. Instead, when graduates spoke about their experiences of work in an impassioned or emphatic way, these intonations were marked on the interview transcript to flag their importance.

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<sup>77</sup> Video interviews can overcome this problem to an extent, although the main drawback to using this medium is internet connection reliability.

Another debated issue is whether telephone or face-to-face interviews provide a better environment for discussing sensitive questions. Researchers such as Shuy (2003), for example, argued that in-person interviews were more desirable because interviewees were more likely to feel at ease than they would do on the telephone, that it would be easier for interviewers to establish a rapport, and that interviewing in person may also help transcend power asymmetries, such as sex and age differences between interviewer and respondents. However, these claims have been challenged by other research that suggests that some participants may prefer the interviewer to be absent (Novick, 2008), and that the telephone did not impede eliciting responses to sensitive questions (e.g. Drabble et al., 2016; Holt, 2010; Chapple, 1999).

Evidence about the implications of power asymmetries in telephone and face-to-face interviews for both interviewer and respondent is limited. From the few studies available, there is a suggestion that interviewing by telephone may have improved the quality of the data. For example, Glogowska et al. (2011) reported that the telephone helped male interviewees talk to a female interviewer in a more comfortable way, and that it particularly helped a male interviewee who wanted to discuss issues related to gender approach those issues. On the other hand, interviewer absence can also silence other aspects of the power asymmetry, for example ethnic differences between interviewer and interviewee, which may limit the critical engagement with these issues in the research interview (Holt, 2010). Again, the extent to which this affects the quality of the data collected depends on the nature of the research questions, and for this PhD project, this was not the main area of investigation.

Conducting telephone interviews was a simple way of getting in touch with the participants. I myself had been a telephone and a Skype interview participant in other research studies, and preferred the convenience of being able to stay at home to conduct the interview.<sup>78</sup> It was also more time consuming than conducting a telephone interview when factoring in the time spent travelling to the location (also acknowledged by Shuy

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<sup>78</sup> In the pilot study I conducted interviews in-person and through telephone and Skype and the in-person method had several drawbacks. I met the respondents in cafes, and the background noise was sometimes impossible to avoid. While the methodology literature suggests finding quiet places in which to conduct the interview, this is not always possible in practice. It was, to an extent, possible to clean the recording prior to analysis using Audacity® software to remove some of the background noise. However, this was a time-consuming process which also lost some data quality on the respondent's voice.

(2003)). The *Futuretrack* respondents were located all over the UK, and travelling to meet with them would have substantially eaten into my time and my allocated research budget. Lastly, some of the respondents themselves expressed a preference to talk on the telephone because they too were very busy to meet in person. Thus, telephone interviews, by virtue of being more convenient and cost-effective to conduct, and suffering few disadvantages relative to interviewing in person, were selected as the interview medium in this PhD research project.

### 3.5.3 Quantitative methodology

To look at whether business size affected skill utilisation as measured in the ways set out in Section 3.3.6, statistical analysis was used using Stata/IC 11<sup>®</sup> software. First, associations between the measures of skill utilisation and business size, occupation, industry and personal characteristics were examined, using bar charts, cross-tabulations and tests of association.<sup>79</sup> This information provided some preliminary clues about the contexts in which business size was influential. Second, regression analysis was carried out to see whether business size affected skill utilisation in a significant way. Logistic regression was used when the dependent (outcome) variable was binary (e.g. yes/no), ordered logistic regression was used when the dependent variable was categorical (e.g. 'not at all,' 'some,' 'a lot of the time') and OLS regression was used when the dependent variable was continuous (numerical, taking on any value in a given interval).

Regressions were the main type of method of analysis used in the skill utilisation literature, but the main models tended to look at whether skill utilisation affected outcomes such as salaries (e.g. Green and Zhu, 2010; Chevalier et al., 2009); job satisfaction (Battu et al., 2000) or well-being (Arnold et al., 1994). Salas Velasco's (2010) method of looking at the likelihood of using competences developed at university is one most suited to my research question with skill utilisation as the dependent variable (see also Section 2.5.4).<sup>80</sup> To recap,

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<sup>79</sup> T-tests if the measure is continuous or a test of proportion if the measure is binary; or tests of association (chi squared tests) if the data are categorical.

<sup>80</sup> The six most highly rated competences that were required for jobs were factored into three groups: *mobilising own capacities* (including using time efficiently, working under pressure); *mobilising others* (including working productively with others, coordinating activities, making meaning clear to others); and *having good specialist knowledge* (mastery of own field and ability to readily acquire new knowledge). An ordered logit model was used to look at what factors affected the graduates' perceptions of competences required for their jobs (dependent variable), controlling for occupation, industry group, self-employment, responsibilities and subject of study, as well as firm size (small (fewer than 50 workers) as reference group).

Salas Velasco (2010) used an ordered logit model was used to look at what factors affected graduates' perceptions of competences required for their jobs (dependent variable), controlling for occupation, industry group, self-employment, responsibilities and subject of study, as well as firm size (independent variables).

The main aim in this thesis was to see whether business size mattered when controlling for occupation, industry, and other characteristics, rather than to investigate what affected skill utilisation in general. As mentioned earlier *Futuretrack* did not collect data on aspects of HPW, employment relations, or managers' attitudes to employee development, which could also affect graduates' perceptions of skill utilisation. It was therefore expected that the explanatory value of the regressions would not be very high,<sup>81</sup> and these expectations were largely confirmed in the quantitative results.

### 3.5.3.1 Hypotheses

Regressions were used to test the following four hypotheses, developed from the research questions set out in Chapter 2 and in this Chapter in Section 3.1, and the measures developed in Section 3.3.

**H1. Graduates working in small businesses will report *different* levels of *skill utilisation* as measured by (a) using skills that the graduate developed during their undergraduate degree, and (b) using subject discipline/ knowledge that the graduate developed during their undergraduate degree, compared to graduates working in large businesses when controlling for occupation, industry and personal background.**

Measure used: (a) *Do you use the skills developed on your undergraduate degree programme?* (1=yes; 0=otherwise); (b) *Do you use the subject/discipline knowledge you acquired on your undergraduate degree programme?* (1=yes; 0=otherwise).

**H2. Graduates working in small businesses will report *different* levels of *skill utilisation* as measured by the frequency of being required to use specific skills at work, compared to graduates working in large businesses when controlling for occupation, industry and personal background.**

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<sup>81</sup> McFadden's pseudo-R-squared in the case of logistic regressions and the adjusted R-squared in the case of OLS regressions.

Measure used: *To what extent are you required to use the skills and capabilities listed below in your current job?* (RECODED; 0=not at all, 1=some of the time, 2=a lot of the time); Dummy for 'a lot of the time' to look at the more extreme responses (1=a lot of the time; 0=otherwise).

- |                              |   |
|------------------------------|---|
| 1. Written communication     | 7. Innovative thinking                    |
| 2. Spoken communication      | 8. Entrepreneurial skills                 |
| 3. Numerical analysis skills | 9. Ability to work in teams               |
| 4. Critical evaluation       | 10. Ability to work individually          |
| 5. Research skills           | 11. Ability to manage my time effectively |
| 6. Presentation skills       |   |

These 11 skills and capabilities were correlated with each other. Following suggestions made when presenting earlier versions of the quantitative analysis at conferences and following other researchers, an exploratory factor analysis (EFA) was carried out to group the skills into factors, and an OLS regression was carried out on the factor scores (continuous variables), using the same control variables as the logistic regressions. See Section 3.5.3.3 about EFA methodology.

**H3. Graduates working in small businesses will report *different* levels of *skill utilisation*, as measured by whether the job required a degree (qualification match), compared to graduates working in large businesses when controlling for occupation, industry and personal background.**

Measure used: *Were any of the following qualifications required for this job? Please select ALL that apply.* Two types of degree match were used – one which differentiated between general and specific degrees (1=an undergraduate degree in a particular subject; 2=an undergraduate degree in any subject; 0=otherwise); and a degree dummy which did not differentiate between general and specific degrees (1=particular or general degree; 0=otherwise).

**H4. Graduates working in small businesses will report *different* levels of *skill utilisation*, as measured by self-reported job appropriateness, compared to graduates working in large businesses when controlling for occupation, industry and personal background.**

Measure used: *On a scale of 1 to 7 where 1 means 'ideal' and 7 means 'very inappropriate,' how appropriate do you think your current job is for someone with your skills and qualifications?* (RECODED to make results more intuitive to interpret; 1=very inappropriate; 7=ideal); High appropriateness dummy (1=6 or 7 on recoded scale; 0=otherwise).

### 3.5.3.2 Quantitative sample

This Section focuses on the thesis sample of 4,572 first-degree graduates only; a comprehensive analysis of the whole *Futuretrack* cohort was presented in the *Futuretrack* Stage 4 report (Purcell et al., 2013). In the thesis sample, 49% of the graduates were women, compared to 57% in the *Futuretrack* survey as a whole (see Table 3.2).<sup>82</sup> The smaller proportion of women in the thesis sample is due to the relatively even proportions of men and women employed in the private sector (51% and 49% respectively), while in the public and not-for-profit sectors, about two thirds of the graduate employees were women.<sup>83</sup> More than half of the graduates were aged 18 and under at the time of starting their university degrees, and 15% (10% unweighted) were aged 21 and over, younger than *Futuretrack* respondents as a whole.<sup>84</sup> Just over half of *Futuretrack* graduates in this sample were from managerial and professional occupations backgrounds, 19% from intermediate occupations and 23% from routine and manual occupations, similar to *Futuretrack* as a whole. However, the proportion of graduates from routine and manual occupations was lower than the roughly comparable HESA (2010) figure of 30%.<sup>85</sup> Similarly, in this sample and in the survey

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<sup>82</sup> *Futuretrack* 'as a whole' in this case comprises first-degree UK domiciled graduates only (including those unemployed, in self-employment, in public, private, and not-for-profit sectors).

<sup>83</sup> Among full-time first degree graduates in 2009/10 and 2010/11, 56% were women (HESA, 2013b). The over-representation of female respondents in survey data has been well-established in the majority of longitudinal research, including HESA LDLHE, and previous IER studies (*Class of '99, Seven Years On*, etc.).

<sup>84</sup> Typically, *mature* students are defined as those aged 21 or over at time of starting university (e.g. UCAS and HESA definitions). The *Futuretrack* Stage 4 report differentiated between 'younger' mature student, those aged 21-25, and 'older' mature students, those aged 26 and over at the time of starting HE to facilitate a more detailed analysis (Purcell et al., 2013).

<sup>85</sup> HESA Performance Indicators data, average proportion of entrants to HE in 2006/07 and 2007/08 from NS-SEC classes 4-7 (routine and manual). NS-SEC 4-7 includes the following occupational backgrounds: Small employers and own account workers, Lower supervisory and technical occupations, Semi-routine occupations and Routine occupations. NS-SEC 1-3 consists of the following occupations: Higher managerial, administrative and professional occupations, Lower managerial, administrative and professional occupations, and Intermediate occupations. The HESA years of entry to HE roughly corresponded to when the majority of the current *Futuretrack* graduates would have entered higher education.

as a whole, a slightly lower proportion of graduates self-described their ethnicity as non-white than in comparable HESA (2008, 2007) data (13% compared to 17%).<sup>86</sup>

More than half of the graduates in this sample attended a high or highest tariff university (over 60% unweighted), and 20% achieved a first-class degree, followed by 50% upper second and 20% lower second class degree classifications. Compared to HESA (2013b) statistics for full-time students, the average percentage of students gaining a first-class degree in 2009/10 and 2010/11 was 14% and an upper second – 48%, which shows that even when weights to correct for access tariff classification were applied, high-achieving students were still slightly overrepresented in this sample and in the *Futuretrack* survey as a whole.

**Table 3.2: Comparison of thesis sample graduates' and all *Futuretrack* first-degree UK-domiciled graduates' personal characteristics**

Personal characteristics	Thesis sample only	All <i>Futuretrack</i> first-degree UK domiciled graduates
Female	49.4	56.9
<i>Age groups</i>		
18 and under	54.0	47.2
19-20	31.2	27.6
21-25	8.8	11.0
26 and over	6.0	14.3
<i>SES</i>		
Managerial and professional	57.2	54.5
Intermediate	19.0	20.1
Routine and manual	23.9	25.4
<i>Ethnic group</i>		
Asian	6.9	6.5
Black	2.7	3.0
White	86.7	86.5
Mixed	2.9	3.1
Other	0.8	1.0
Non-white	13.3	13.5
N	4572	9362

*Source: Futuretrack Stage 4 thesis sample, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed; All Futuretrack first-degree UK domiciled graduates. Weighted percentages.*

<sup>86</sup> All first-year UK domiciled HE students in 2006/07 and 2007/08 of all known ethnicity (HESA, 2008; 2007).

The graduates in this sample were most likely to have studied humanities and languages, natural sciences, and business and administrative studies subjects (44% of all graduates, Table 3.3).<sup>87</sup> This distribution was broadly similar to the *Futuretrack* survey as a whole, except that a higher proportion studied medicine and related subjects and education in the survey as a whole. This was because graduates from these subjects were much more likely to work in the public sector (see Purcell et al., 2013), whereas this thesis sample focused on the private sector only.

In the sample, there were some key differences in the gender composition of the undergraduate subjects. The most male-dominated subjects were engineering and technologies, and mathematical and computer sciences (over 80% of graduates from these subjects were male). The graduate mix for the other subject groups was relatively even, with slightly more women than men graduating from humanities and languages (61% female) and the natural sciences (60% female).<sup>88</sup>

Looking at STEM and non-STEM subject groups only, a higher proportion of male graduates studied STEM subject groups compared to female graduates (26% compared to 17%). Conversely, a higher proportion of female graduates studied non-STEM subject groups compared to male graduates (32% compared to 24%).<sup>89</sup> These differences echo findings from earlier graduate labour market studies (e.g. *Class of '99*, Purcell et al., 2005, p. 11) and the wider group of all *Futuretrack* respondents who completed an undergraduate degree (Purcell et al., 2013).<sup>90</sup>

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<sup>87</sup> Business and administrative studies graduates were underrepresented in the *Futuretrack* survey as a whole (see Purcell et al., 2013, p. 203).

<sup>88</sup> The high proportion of female graduates from natural sciences subjects is largely due to almost 70% female graduates from biological sciences and related subjects; the physical sciences were relatively evenly split, with 45% female graduates.

<sup>89</sup> There was a statistically significant association between sex and STEM/non-STEM subjects: uncorrected  $\chi^2(1, N=4,562) = 142.76$ , design-based  $F(1, 4,561) = 112.46$ ,  $p < .001$ .

<sup>90</sup> The gender ratios are not directly comparable owing to different subject group classifications used in the reports.

**Table 3.3: Comparison of thesis sample graduates' and all *Futuretrack* first-degree UK-domiciled graduates' HE background**

HE experience	Thesis sample only	All <i>Futuretrack</i> first-degree UK domiciled graduates
<i>HEI tariff type</i>		
Highest tariff	26.5	25.0
High tariff	24.8	24.1
Medium tariff	33.0	32.5
Lower tariff	10.3	12.3
General HE college	1.5	1.6
Specialist HE college	3.9	4.3
<i>Degree class</i>		
1st class hons.	19.9	18.6
2.1 class hons.	50.5	49.0
Unclassified 2nd class hons.	2.4	2.8
2.2 class hons	20.1	19.1
3rd class hons.	3.0	3.4
Ordinary degree (unclassified)	2.6	3.8
Other	0.2	0.2
Diploma	0.5	1.2
Medical degree	0.3	1.3
Foundation degree	0.5	0.5
<i>Subject groups</i>		
Medicine & related	2.1	8.5
Natural Sciences	15.2	14.0
Mathematical & Computer Sciences	10.1	7.1
Engineering, Technologies, Building	10.3	8.8
Social Studies & Law	9.2	10.7
Business & Administrative Studies	12.3	8.2
Humanities & Languages	16.2	15.8
Creative Arts & Design	12.0	12.2
Education	1.9	4.9
Interdisciplinary including STEM	5.8	5.4
Interdisciplinary excluding STEM	5.1	4.4
All STEM-related subjects	43.4	43.7
N	4572	9362

*Note: For some analyses in the Futuretrack Stage 4 Report, interdisciplinary subjects were divided into those that did and did not include a Science, Technology, Engineering and Mathematics (STEM) component using Atfield's classification (Purcell et al., 2013).<sup>91</sup>*

*Source: Futuretrack Stage 4 thesis sample, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed; All Futuretrack first-degree UK domiciled graduates. Weighted percentages.*

<sup>91</sup> STEM, as defined by the UK government, emphasises the strategic importance of developing science, technology, engineering and mathematics knowledge at university level for economic competitiveness. *Futuretrack* adopted a slightly more nuanced definition of subject groups, to accommodate for numerical skill development (see Purcell et al., 2013, p. 73, for more detail).

At the overall level, the graduates in this sample were broadly comparable to the *Futuretrack* respondents as a whole, to the UK graduate cohorts in 2009/10 and 2010/11 according to HESA data, to graduate cohorts in previous labour market studies (*Class of '99* and *Seven Years On*). The main differences were that this sample had a slightly higher proportion of graduates with first class degree results, lower proportions of graduates from ethnic minority and routine and manual backgrounds compared to HESA statistics, and much lower proportions of graduates who did education and from medicine and related subjects, because they were more likely to be employed in the public sector. In addition, business and administrative studies students were slightly underrepresented in the *Futuretrack* survey. Thus, these differences should be borne in mind when looking at the analysis of graduate employment in small firms. However, for the regression analysis in Chapter 5, it is the effects of the variables on self-reported measures of skill utilisation that are important, and these differences do not present a problem because all groups are relatively well-represented in the model specification.

### 3.5.3.3 Exploratory factor analysis

Exploratory factor analysis (EFA) rather than principal component analysis (PCA) was used because PCA is more appropriate to *reduce* the data without making any assumptions about its underlying structure, whereas EFA is more appropriate where there is reason to believe that the variables (different skills and capabilities) are underpinned by a set of unobservable underlying constructs (groups of similar types of skills). This approach is especially useful when variables in a group are correlated with each other, because EFA can identify the correlation structure and help group the variables into factors accordingly.

The premise of factor analysis (FA) is that for a set of variables in question there exists a set of underlying factors, smaller than the set of initial variables, which can account for the relationships between the variables (Kim and Mueller, 1978 in: Pett et al., 2003). Typically FA uses the Pearson product moment correlation coefficients between the variables, and therefore requires that the data be continuous and normally distributed, and that the sample size be large. The *Futuretrack* data does not meet the continuity and normality assumptions: the frequency of skill use variables are ordinal categorical variables taking on values 1-3: 'a lot of the time' (3), 'some of the time' (2) and 'not at all' (1), but these

assumptions can be relaxed for exploratory factor analysis (EFA).<sup>92</sup> These frequency of skill use variables were recoded into 0-2 values: 'a lot of the time' (2), 'some of the time' (1) and 'not at all' (0) prior to analysis, and standardized, with mean 0 and standard deviation 1.

First, an initial exploratory analysis was carried out, following examples given in the factor entry in the Stata Manual 2013. Following the advice for working with categorical variables, factor analysis was run on the correlation matrix of the 11 skills (*factormat* command).<sup>93</sup> The following EFA methods were used initially to investigate how many factors should be retained: *principal factors* (PF, communalities estimated using square multiples of correlation coefficients); *principal component factors* (PCF, all communalities assumed to be equal to 1); *iterated principal factors* (IPF, repeating the principal factor method until the solution converges on better estimates); and *maximum likelihood* (ML, canonical correlations between the manifest variables and the common factors are maximised, assuming the data are multivariate normal distributed). The communalities are the proportion of variance in each variable that is accounted for by all the factors, which can be used as an indicator of the reliability of the factor: the higher the communality, the more reliable the result. Stata reports the uniqueness of variables (1 minus communality), and conversely refers to the amount of variance unexplained by the factors. A high uniqueness score (>0.6) is generally considered to indicate an unreliable factor.

Oblique (*promax*) rotations were used rather than orthogonal (*varimax*) because all the 11 skills were at least slightly positively correlated with each other, which suggested that graduates reported using *groups* of these skills together to some extent in their main job. For orthogonal rotation to be applicable to the data, one would expect the correlation pattern to indicate that there was no relationship between some groups of skills in order to result in underlying factors being uncorrelated with each other.

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<sup>92</sup> Pett et al. (2003) suggested that for exploratory purposes it is possible to violate the normality and continuity assumptions in order to elicit descriptive relationships between variables. If the aim of the research is to find out how many factors underlie the data, multivariate normality becomes important. A test for multivariate normality among the eleven frequency of skill use variables rejected the multivariate normality null hypothesis at the 1% level ( $p < 0.001$  for Mardia multivariate skewness and kurtosis, Henze-Zirkler and Doornik-Hansen tests). However, here the goal of the EFA is the exploration of the underlying structure to the data, and so the analysis was carried out, the non-normality borne in mind.

<sup>93</sup> Polychoric correlation was because it assumes that the variables, here taking discrete values between 0-2, are a truncated form of a continuous variable. This assumption is appropriate because these variables are ordinal (not at all, some of the time, a lot of the time) and it is possible to imagine a continuous spectrum of frequency of skill use.

Following the discussion in Rencher (2002) and the method in Garrett-Mayer and Onicescu (2009), an iterated principal factors (IPF) analysis was used to minimise uniqueness (variance unexplained by the factors), rather than a one-off principal factors analysis. The IPF method was carried out for two factors and four factors respectively, although EFA researchers have been advised to err on the side of too many factors rather than too few (Fabrigar et al., 1999).<sup>94</sup>

Once the factors were constructed, they were named using a combination of variables constituting the factors and references to names for groups of skills used in the literature. Factor scores were predicted and rescaled to indices with mean 100 and standard deviation 10 to make the scores easier to interpret, following the suggestion in the Stata 13 manual. Because the factor scores were continuous, OLS regression was used rather than logistic regression, but the independent variables remained the same.

#### 3.5.3.4 Regression models

Six regression models were set up, with each model containing more control variables than the previous model. Model 1 looked at the effect of business size only (large businesses as the reference category – this showed the effects of being employed in a micro, small and medium-sized businesses relative to large business). Model 2 added the major group SOC 2010 (professional occupations as reference category – these contain what are typically considered ‘traditional’ graduate jobs, and using SOC 2010 rather than SOC(HE) gives a greater level of occupational detail). Model 3 added industry groups (banking, finance and insurance as reference – because the proportion of graduates using skills and knowledge in this sector was close to the average). Model 4 added individual background characteristics, all dummy variables: sex, age group, ethnicity, and parental occupation (proxy for

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<sup>94</sup> The decision of how many factors to retain was difficult to make. The preliminary analysis suggested that there were not more than five factors, with a possible sixth factor, because this was the default number of factors retained by both PF and ML methods. However, in the ML method, the six factor solution resulted in a Heywood case, and the data used here does not fit ML assumptions, so the ML EFA findings should be interpreted with caution. The PCF analysis combined with a preliminary principal component analysis showed that there were two components with eigenvalues greater than 1, and so two factors should be retained. However, PCF was not suitable for the *Futuretrack* data used here because the high uniqueness scores imply that the PCF assumption of no uniqueness cannot be met. In addition, when the number of factors was restricted to two, uniqueness was high for numerical skills and entrepreneurial skills, and for the ability to work individually and in teams across the different EFA methods. Similar problems occurred in three-factor restrictions. When four factors were retained, the uniqueness scores were reduced and loadings were optimised in the PF and IPF methods.

socioeconomic status). Model 5 added HEI types (highest tariff as reference, generalist and specialist HEIs classed as ‘other’ – but see footnote 114) and whether the degree subject contained a STEM component. Model 6, the full model, added the high self-confidence dummy variable.

The models were set up as follows:

- Model 1     **Business size** (Micro, Small, Medium, **Large organization - reference category**)  
**Model 1 and Occupations** (Managers, directors and senior officials, **Professional occupations - reference**, Associate professional and technical occupations,
- Model 2     Administrative and secretarial occupations, Skilled trades occupations, Caring, leisure and other service occupations, Sales and customer service occupations, Process, plant and machine operatives, Elementary occupations)  
**Model 2 and Industries** (Agriculture, mining, quarrying (includes gas extraction), Manufacturing, electricity, gas, water supply, Construction (includes civil engineering), Distribution, hotels, catering (includes retail), Transport and tourist services, Information and communications sector, **Banking, finance, insurance - reference**, Business services (includes legal services), Education (includes schools, colleges, etc.), Other public services (local or central government))
- Model 3     **Model 3 and Female dummy** (female = 1, male = 0) **and Mature student dummy** (21+ = 1) **and Ethnicity dummy** (non-white = 1, white = 0) **and Routine SES dummy** (Routine and manual occupations = 1, else = 0)  
**Model 4 and HEI type groups** (**Highest tariff - reference**, High tariff, Medium tariff,
- Model 5     Lower tariff, Other (General, Specialist)) **and STEM subject dummy** (Subject contains a STEM component = 1, else = 0)
- Model 6     **Model 5 and High self-confidence dummy** (high self-confidence = 1, else = 0)

Previous versions of these models contained a larger number of dummy variables (e.g. all broad subject groups rather than just the STEM dummy, different types of ethnic background, or socioeconomic background; e.g. Luchinskaya (2013)). However, using aggregate dummies (e.g. STEM/non-STEM; non-white/white ethnic group; routine and manual occupations/other) did not affect the model explanatory values significantly. For parsimony, the number of control dummies was reduced.

The use of the degree requirement variable (whether a general or specific degree was required for the job) was not included as a control variable. Although the degree requirement variable was strongly associated with skill and knowledge use, it is also one of

the matching-based measures of skill utilisation. As all of the respondents were graduates, if a degree was not required for the job then the respondent was not matched well, and better use of skills could be made. Therefore, this variable should not be included in the regression as it is one of the aspects of skill utilisation, the dependent variable.

Workplace size was considered as an additional control to check that the business size, rather than the workplace size, was affecting skill utilisation. However, a correlation matrix showed the workplace indicator variables were extremely highly correlated with the business size indicators, which suggested that workplace size should be excluded from the regression model. The control variables should have some degree of independence, otherwise the regression model would suffer from multicollinearity, which would overstate the standard errors on the regression coefficients and give unreliable coefficient estimates.

### **3.5.3.5 Limitations of regression analysis**

Although regressions are a useful approach to take to separate out the effects of different factors on an outcome variable, there are some caveats to bear in mind in addition to the limitations of survey data discussed in Section 3.5.1.1. First, the regressions as specified here do not give a causal direction between the variables, they only show that there is a statistical association (correlation does not imply causation). Therefore it is not possible to claim that, for example, working in a small business compared to a large business *leads to* greater levels of skill utilisation. It is only possible to say that there is a positive or a negative association. Second, the regressions do not explain why skill utilisation is more or less likely to occur in particular circumstances. Reasons behind particular patterns can be checked using other similar research findings, and followed up in the qualitative analysis.

Second, the regression models show how the independent variables affect the likelihood of a graduate *reporting* that they used degree skills or degree knowledge in their main job (in the case of a logistic regression), and not how these skills or knowledge *were* actually used in practice. The implications drawn from regression results must be interpreted cautiously without equating the likelihood of using degree skills or knowledge with the actual use of degree skills or degree knowledge. In addition, graduates from different disciplines and with different experiences will have different reference points about what constitutes using skills 'a lot,' 'some' or 'not at all' of the time.

Third, in some cases the fit of the regression was very low.<sup>95</sup> As this analysis is predominantly concerned with exploring whether business size has an effect on subjective measures of skill utilisation, low model fit is not necessarily a problem. With these caveats in mind, the findings do indicate that employer size has an effect on some aspects of skill and knowledge utilisation even when controlling for occupation, industry and personal characteristics.

### 3.5.4 Qualitative methodology

As described in Section 3.2 the main tasks in this mixed-methods research project were to examine different aspects of a multi-dimensional concept and to enrich and develop the findings from the quantitative data using a qualitative approach. The issue of whether business size affected skill utilisation was addressed through a quantitative approach. To follow up on the quantitative findings, and to find out *how* graduates worked in different-sized businesses, in-depth telephone interviews were conducted. This approach provided a balance between breadth of coverage, number of observations, and depth of data, as well as efficient use of the available time.

The method chosen for the qualitative component of the study was therefore in-depth interviews with *Futuretrack* participants, carried out by telephone or Voice over Internet Protocol (VoIP) software such as Skype. The interviews were arranged by email. To ensure data privacy, the *Futuretrack* project leader emailed an invitation email to *Futuretrack* respondents selected for interview. Those who were interested in participating in the project left their details in an online form on my project website. I then contacted those respondents directly by email.

#### 3.5.4.1 Research questions

The main research questions that the interviews set out to investigate were:

- What were graduates' experiences of knowledge and skill use in small and large businesses? What kinds of themes emerged? What were the similarities and differences?

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<sup>95</sup> Low model fit suggests that the model is inappropriate for the data. It could be that business-related indicators, such as organisational culture, may be better predictors, but these were not available in the *Futuretrack* dataset, and so were omitted from the models. See Section 10.5 for a discussion of the limitations of this research.

- What were graduates' experiences of career development in small and in large businesses? What kinds of themes emerged? What were the similarities and differences?

These broad questions were split up in the interview schedule into the topics below.

*Qualitative dimensions of skill utilisation*

- What do you mean by degree skills and knowledge? How do you use them in your job, if at all?
- What do you mean by research skills and innovative thinking skills? How do you use them in your job, if at all?
- Was a degree required for this job? Are there other graduates doing your kind of work / in the organisation as a whole?
- Are there any skills or knowledge that you have that you would like to use more than you currently do in your job?

*Qualitative dimensions of career development*

- How did you come to do your current job?
- What do you do? What are your main tasks and responsibilities? What is it like working there?
- How has your experience of working in the business you were in at the time of the *Futuretrack* survey affected your opportunities for career development?

Where graduates had changed their job or their employer since the *Futuretrack* survey, they were asked to compare and contrast their experiences. See Appendix C Figure C.4 for a full copy of my interview schedule.

### **3.5.4.2 Interview sample**

The interview sample selection was discussed in Section 3.3.5.2. This section describes the main characteristics of the graduates in the interview sample and the implications for research.

#### **3.5.4.2.1 Overview**

The sample of 20 graduates used in this thesis is not representative of university graduates as a whole. The sample is heavily skewed towards high-achieving graduates who have 'good' (first class or 2.1) degrees from the top (highest- or high-tariff) universities in the country, and the analysis does not claim to pertain to graduates in general. The sample constitution was partly due to restricting the sampling frame to respondents who agreed to

be followed up after the *Futuretrack* survey, to those employed in selected business and public service associate professional occupations, and to the low response rate of graduates who agreed to be interviewed. The graduates in this sample is referred to as ‘elite’ graduates as a shorthand to convey the predominance of high-achieving graduates in the sample. However, as described in more detail below, there was some variation across the interview respondents.

Thirteen graduates were female, which reflects the 60:40 gender composition of the unadjusted *Futuretrack* stage 4 survey responses. Eleven out of twenty had first class degrees, seven – upper seconds, and one – lower second. Seventeen respondents had attended high or highest tariff universities and three – medium-tariff. Half had studied a subject in the humanities and languages broad subject group. In sixteen cases, one or both of the respondents' parents had been to university. Sixteen graduates were from a managerial and professional socioeconomic background, and two each from intermediate and routine and manual socioeconomic background, further highlighting the elite bias of the sample.

It is important to bear in mind *Futuretrack* Stage 3 findings when analysing these graduates’ interview responses. For instance, students who attended the highest tariff universities were the most likely to have started searching for employment and to have started applying for jobs related to their long-term career plans compared to students at other types of institutions. In addition, the proportion of students who expected to get a first class degree who had been offered a job related to their long-term career plans was more than 10% higher than the proportion of those who expected to achieve a 2:1 or 2:2. (Atfield and Purcell, 2010). The respondents were employed in the following associate professional occupations (Table 3.4):

**Table 3.4: SOC 2010 unit groups of *Futuretrack* interview participants**

<b>SOC 2010</b>	<b>Generic occupation title</b>	<b>Freq.</b>
<b>3542</b>	Business sales executive	1
<b>3543</b>	Marketing associate professional	11
<b>3544</b>	Estate agent and auctioneer	1
<b>3545</b>	Sales accounts and business development manager	3
<b>3562</b>	Human resources and industrial relations officer	2
<b>3563</b>	Vocational and industrial trainer and instructor	2
<b>Total</b>		20

Source: *Futuretrack* stage 4 interview respondents, N=20.

The tables below summarise the interviewed graduates' educational history (Table 3.5) and employment context at the time of the *Futuretrack* survey (Table 3.6 and Table 3.5). As can be seen from Table 3.5, eleven respondents had a 1<sup>st</sup> class degree, eight – a 2.1 degree and one – a 2.2 degree. Thirteen respondents had attended highest tariff universities, four – high tariff, and three – medium tariff. Ten graduates (half of the interview sample) studied humanities and languages subjects at university.<sup>96</sup> Five respondents studied natural science subjects, two – social studies and law, and one each – business and administrative studies, interdisciplinary subjects including STEM, and mathematical and computer sciences.

The occupations in which the graduates were employed at the time of the survey (Table 3.6) were classified as *communicator* (15 cases), *expert* (2 cases) and *non-graduate* (3 cases) using the SOC(HE) 2010 classification (Elias and Purcell, 2015). Most of the interviewed graduates had reported in the *Futuretrack* survey that the job they were doing required a degree (Table 3.7), either in any subject (15 cases), or in a specific subject (3 cases).<sup>97</sup> In particular, in the survey, two of the three graduates employed in non-graduate jobs said that their jobs required a degree: one in any subject (Jess) and one in a specific subject (Claire). In addition, one of the two graduates who, in the survey, said that their job did not require a degree, at the time of the interview said that a degree was probably required.<sup>98</sup>

The graduates' survey responses about whether they used their degree skills and knowledge, and whether they thought their jobs were appropriate for them are shown in Table 3.7. These concepts are investigated in Chapter 8.

The graduates' careers since the *Futuretrack* survey are shown in Table 3.8. This table provides an overview of which graduates had been promoted or had changed jobs. These concepts are discussed more fully in Chapter 9, but it is helpful to remember that when the

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<sup>96</sup> In the *Futuretrack* survey, when looking at graduates who worked in similar jobs (SOC 354 and 356), the proportion of graduates who studied humanities was 20%, so humanities graduates were over-represented in the interview sample.

<sup>97</sup> Some of the graduates who had put that their job did not require a degree in the *Futuretrack* survey said that it did not remember whether their job required a degree but thought that it *did* during the interview.

<sup>98</sup> Bryony, on whether the job required a degree: "I'm sure it did. I don't think at that time [of applying for jobs after graduation] there was ever a job up that didn't say you needed some sort of a degree."

graduates were discussing the jobs they were doing at the time of the *Futuretrack* survey, although all of them were talking about their experiences retrospectively, some of them had changed jobs and therefore had a slightly different perspective to those who were still employed in the same company.

Table 3.5: Graduates' HE background – interview sample

ID	Alias	Sex	Broad Subject Group	HEI Tariff Group	Class	Year of graduation
1	Jess	Female	Humanities & Languages	High tariff	2.1	2010
2	Karen	Female	Humanities & Languages	Highest tariff	2.1	2009
3	Brendon	Male	Humanities & Languages	Highest tariff	1st	2009
4	Julia	Female	Humanities & Languages	Highest tariff	1st	2010
5	Victoria	Female	Mathematical & Computer Sciences	Highest tariff	2.2	2010
6	Amy	Female	Humanities & Languages	Highest tariff	1st	2010
7	Ruth	Female	Natural Sciences	Highest tariff	1st	2010
8	Claire	Female	Natural Sciences	Highest tariff	2.1	2009
9	Rob	Male	Humanities & Languages	High tariff	1st	2009
10	Dana	Female	Interdisciplinary including a STEM subject	Medium tariff	2.1	2009
11	Sam	Male	Social Studies & Law	High tariff	1st	2010
12	Jane	Female	Natural Sciences	Highest tariff	2.1	2010
13	Richard	Male	Humanities & Languages	High tariff	1st	2010
14	Helen	Female	Natural Sciences	Highest tariff	1st	2010
15	Matt*	Male	Natural Sciences	Highest tariff	1st	2008
16	Alex	Male	Humanities & Languages	Highest tariff	2.1	2009
17	Susanna	Female	Humanities & Languages	Highest tariff	1st	2009
18	Anna	Female	Business & Administrative Studies	Medium tariff	2.1	2010
19	Bryony	Female	Social Studies & Law	Highest tariff	2.1	2009
20	Chris	Male	Humanities & Languages	Medium tariff	1st	2009

Source: Futuretrack 2006 Wave 4 dataset, interview participants.

\* Note that Matt entered HE in 2005 and graduated in 2008, although he completed the Futuretrack 2006 Wave 4 dataset.

Table 3.6: Graduates' employment at the time of the *Futuretrack* survey – interview sample

ID	Alias	Number of employees	Employer description	Industry	Job title	SOC 2010	SOCHE (2010)	Earnings
<b>SMALL</b>								
1	Jess*	10-24	Relocation agency	Business services	Relocation consultant	3544	Non-graduate	£15,000-17,999
2	Karen	10-24	Educational services	Education	Marketing manager	3545	Communicator	£24,000-26,999
3	Brendon	25-49	Marketing agency	ICT	Brand consultant	3543	Communicator	£12,000-14,999
4	Julia	10-24	Market research	Business services	Junior research executive	3543	Communicator	£18,000-20,999
5	Victoria	10-24	Market research	Business services	Research analyst	3543	Communicator	£21,000-23,999
6	Amy	25-49	Advertising agency	Business services	Account planner	3543	Communicator	£18,000-20,999
7	Ruth	10-24	Specialist recruiter	Business services	Recruitment consultant	3562	Expert	£18,000-20,999
8	Claire	25-49	Training services	Business services	Vocational instructor	3563	Non-graduate	£30,000-32,999
12	Jane	10-24	Market research	Business services	Research executive	3543	Communicator	£24,000-26,999
17	Susanna	10-24	Healthcare PR agency	ICT	Account manager	3542	Communicator	£24,000-26,999
18	Anna	10-24	Market research	Business services	Research executive	3543	Communicator	£18,000-20,999
19	Bryony	10-24	Social research agency	Business services	Research executive	3543	Communicator	£21,000-23,999
20	Chris	10-24	Educational services	Education	Trainer	3563	Non-graduate	£21,000-23,999
<b>LARGE</b>								
9	Rob	1000+	Social data marketing	Business services	Account executive/manager	3545	Communicator	£24,000-26,999
10	Dana	1000+	Insurance company	Banking, finance, insurance	Marketing and product development executive	3543	Communicator	£21,000-23,999
11	Sam	500-999	Market research	Business services	Research executive	3543	Communicator	£24,000-26,999
13	Richard	1000+	Advertising, marketing, PR	ICT	Advertising graduate	3543	Communicator	£21,000-23,999
14	Helen	1000+	Grocery business	Distribution, hotels, catering	Business development analyst	3543	Communicator	£40,000-49,999
15	Matt	1000+	Educational services	Education	Product manager	3545	Communicator	£36,000-39,999
16	Alex	1000+	Energy company	Manufacturing	HR analyst	3562	Expert	.

Source: *Futuretrack 2006 Wave 4 dataset*

\*Note that Jess was working in a small company in another European country.

Table 3.7: Graduates' use of skills and knowledge at the time of the *Futuretrack* survey – interview sample

Int. ID	Alias	Whether reported using		Extent to which required to use		Type of degree required	Job appropriateness (7 is ideal)
		Degree knowledge	Degree skills	Research skills	Innovative thinking		
<b>SMALL</b>							
1	Jess	1	1	A lot	A lot	General degree	6
2	Karen	0	1	Some	A lot	General degree	7
3	Brendon	1	1	A lot	A lot	General degree	6
4	Julia	0	1	A lot	A lot	General degree	6
5	Victoria	0	1	A lot	A lot	General degree	7
6	Amy	0	1	A lot	A lot	General degree	5
7	Ruth	1	0	A lot	A lot	General degree	6
8	Claire	1	1	Some	A lot	Specific degree	6
12	Jane	1	1	A lot	A lot	General degree	5
17	Susanna	0	1	A lot	Some	Specific degree	6
18	Anna	1	1	A lot	A lot	Specific degree	6
19	Bryony*	1	1	A lot	A lot	No degree required	5
20	Chris*	1	0	Some	A lot	No degree required	7
<b>LARGE</b>							
9	Rob	1	1	A lot	A lot	General degree	5
10	Dana	0	1	A lot	A lot	General degree	7
11	Sam	1	1	A lot	A lot	General degree	3
13	Richard	1	1	A lot	A lot	General degree	7
14	Helen	0	1	Some	A lot	General degree	6
15	Matt	0	1	Some	A lot	General degree	5
16	Alex	0	1	A lot	A lot	General degree	6

Source: *Futuretrack 2006 Wave 4 dataset*

\*Note that in the survey Bryony stated that no degree was required, although this was contradicted in the interviews. In the survey Chris said that he did not use his degree skills, which was contradicted in the interviews. See Section 8.2.

Table 3.8: Graduates' careers since the *Futuretrack* survey – interview sample

Int. ID	Alias	History of jobs held after the survey at the time of interview (if different)					
		Job title	Employer	Description			
1	Jess	Same, but looking for another job in the travel sector					
2	Karen	Same, but looking for another job in different sectors					
3	Brendon						
4	Julia	Research	Charity				
5	Victoria	Research analyst	Large marketing company				
6	Amy	Changing jobs					
7	Ruth	Same, but looking for another job					
8	Claire	Teacher	Private school				
9	Rob	Paid social media manager	Large media agency				
10	Dana						
11	Sam	Senior research executive	Same employer				
12	Jane	Senior research executive	Same employer	Research executive	Large research company	Senior research executive	Large research company
13	Richard						
14	Helen	Marketing and merchandising manager	Same employer				
15	Matt						
16	Alex	HR advisor	Same employer				
17	Susanna	Communications manager	Health specialist organisation				
18	Anna	Sales and marketing manager	Micro food company				
19	Bryony	Social researcher	Same employer	Knowledge expert	Same employer		
20	Chris	Lead Trainer	Same employer	Team Leader	Same employer	Changing jobs to be a teacher	Medium-sized teaching organisation

Source: *Futuretrack 2006 Wave 4 interview participants. See also Section 9.4.*

*3.5.4.2.2 Did the sample meet the selection criteria?*

The predominantly elite sample of the 20 graduates met the criteria set out at the beginning of the research to a large extent. The sample enabled a comparison of graduates' perceptions and experiences of skill utilisation and career development in similar occupations in small and large businesses, which was the main research question in this thesis. However, as the sample was skewed toward elite graduates, there were not enough 'non-elite' graduates to facilitate a comparison. Despite this, an in-depth analysis of predominantly 'elite' graduates' experiences was possible. Small businesses were oversampled, as designed. A second issue is that while every care was taken to minimise occupational variation within the sample, 16 out of 20 graduates were employed in minor group 354, and four in 356, with some variation within those groups. But, all sampled graduates were employed at the same sub-major occupational group level (35), in similar industries (predominantly business services) which still provides a greater degree of control than focusing on the major group only would have done.

The implications of the achieved sample are that some, but not all, differences between graduates were minimised, so the sample was more homogeneous than a purely random sample would have been. This relative homogeneity of respondents facilitated a focused and targeted analysis of whether business size affected graduates' experiences of knowledge and skill utilisation and early career development. The main advantage is that, in contrast to maximum diversity sampling, which looks for common patterns within a varied group, homogeneous sampling looks for variability of experiences among similar types of respondents (Patton, 1990). It is particularly useful for constant comparisons, and enables some limited generalisations to be made about the particular group selected (Beige, 2002) (not, of course, to graduates as a whole). Overall, focusing on elite graduates in the associate professional occupations enabled an insightful comparison between graduates' use of skills, experiences of work, and perceptions of career development in these emerging graduate occupations, exploring the role of business size while attempting to minimise individual variation.

### 3.5.4.3 Data analysis

The interviews were recorded using an Olympus® WS-812 Digital Stereo Voice Recorder and an Olympus TP-7 Telephone Pickup Hands-Free Cable purchased through the research budget. During the interview I made notes on the schedule and wrote a short summary of the main points and themes, which served as a starting point for the analysis. Some themes which had already been identified in the pilot qualitative study were reinforced in the main study. The interviews were transcribed using VLC Media Player® and Microsoft Word® software.

After all of the interview data were transcribed,<sup>99</sup> the interviews were collated in one master Word document, and annotated with comments relating to themes and highlighted (see Figure 3.2 below for a screenshot, and see Appendix D: Anonymised interview transcript (abridged) for a sample transcript).<sup>100</sup> The segments of interviews referring to particular questions or themes, such as examples of using degree skills and knowledge, or experiences of promotion, were copied into separate ‘themed’ Word documents and analysed. The coding process took place through repeatedly reading through the transcripts and annotating similar or different accounts with key words making as much use as possible out of the respondents’ own language.

The key characteristics of the 20 respondents were recorded in an Excel® spreadsheet.<sup>101</sup> For each aspect of the research I created new worksheets keeping the contextual data and adding codes and corresponding examples from the interviews. Using the filter tool it was possible to see whether there was a pattern between business size and the different responses, or whether other factors were more prominent. A screenshot with an example of the coding information layout is shown in Figure 3.3 below.

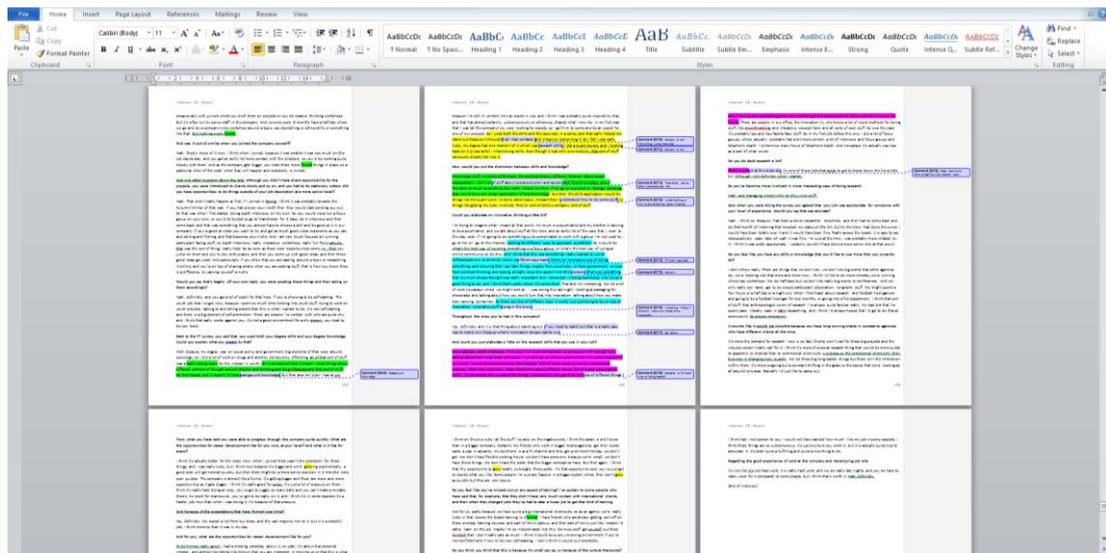
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<sup>99</sup> I considered outsourcing interview transcription but decided to do it myself to increase my familiarity of the data and identify more themes and possible codes, and to preserve the anonymity of the respondents.

<sup>100</sup> The coding process (selecting salient themes) started at the time of the pilot study interviews. The pilot study helped inform the semi-structured interview schedule design, and provided a starting place for interview analysis.

<sup>101</sup> NVivo® software was considered but ultimately not used, partly because I started coding before the master document was completed and I could not import a new Word document into NVivo without losing the existing codes and notes I made. With just 20 interviews Excel was a very workable alternative, and the spreadsheet format allowed me to control how I wanted to organise the qualitative data.

Figure 3.2: Screenshot of master interview file



Source: Created by author.

Figure 3.3: Screenshot of Excel coding file

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	
let_id	Atlas	Innovat	Initial	Size	Degree	Ki	Codes	Codes	Degree	Codes	Writing	R	R	A	A	R	C	N	C	C	FT	Res	Res	Ex	FT	Innov	Innov	FT	Job	TRAIN	Train	Effective						
1	Karen	1	small	0	Factual	0	Factual	Indirect	Foundational	1	Non-subject-specific	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
4	Julia	1	small	0	Factual	0	Factual	Indirect	Foundational	1	Non-subject-specific	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
5	Victoria	1	small	0	Factual	0	Factual	Indirect	Foundational	1	Non-subject-specific	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
6	Amy	1	small	0	Factual	0	Factual	Indirect	Foundational	1	Non-subject-specific	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
8	Claire	1	small	1	Factual	1	Factual	Foundations	Foundational	1	Practical / Reseach	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
10	Dina	1	large	0	Factual	0	Factual	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
14	Isabel	1	small	0	Factual	0	Factual	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
16	Matt	1	large	0	Factual	0	Factual	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
17	Susanna	0	small	0	Factual	0	Factual	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
18	Brendon	1	small	1	Indirect	1	Indirect	Report	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
19	Ruth	1	small	1	Indirect	1	Indirect	Report	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
20	Rolo	1	large	1	Indirect	1	Indirect	Approach	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
21	Sam	1	large	1	Indirect	1	Indirect	Report	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
22	Jane	1	small	1	Indirect	1	Indirect	Communi	Foundational	1	Wider, broader / practi	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	Jess	1	small	1	Indirect	1	Indirect	How-to	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
24	Chris	1	small	1	Technical	1	Technical	About the	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
25	Richard	1	large	1	Theoretical	1	Theoretical	How-to	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
26	Anna	1	small	1	Theoretical	1	Theoretical	Background	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
27	Bryony	1	small	1	Theoretical	1	Theoretical	Background	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

Source: Created by author.

### 3.5.4.4 Limitations of telephone interviews

In addition to the limitations of interview data discussed in Section 3.5.2, there are several points to note regarding these specific interviews in this PhD study. First, these interviews only give a snapshot of the graduates' perceptions in one point in time. This limitation could have been overcome if I had included diaries or follow-up interviews, but these methods were not adopted due to limited time. Second, the interviews give a retrospective account of graduates' experiences of work they were doing at the time of the *Futuretrack* survey, so the survey responses did not always match the interview responses. These

differences were interesting to discuss with the participants and were often related to respondents' changing opinion of their experience of work. Third, in some cases I did not ask respondents to elaborate on what later turned out to be interesting points. These omissions, though uncommon, limited my ability to contextualise graduates' responses in a small number of cases.

## 3.6 Methodological validity and reliability

### 3.6.1 Quantitative – internal validity

Internal validity refers to making valid inferences between variables within the study: “[w]hether relationships between variables have been correctly interpreted” (Punch, 1998, p. 85). The main research question in the quantitative part of the survey is to investigate whether business size is correlated with graduates' skill utilisation. The relationship is presumed to be unidirectional, in that the design and conditions of work shape the context in which graduates can use their skills, but that graduate skill utilisation does not affect business size. Graduates can, however, choose whether to work in small or large businesses. This choice cannot be controlled for *directly* using the *Futuretrack* survey data; however it is possible to see whether the graduates who work in small or large businesses vary on psychological characteristics or reasons for which they accepted their current job which may be *associated with* business size.

### 3.6.2 Quantitative – external validity

External validity refers to the extent to which findings about business size and graduates' skill utilisation in this study can be replicated in other surveys. It is possible to test this by using other secondary datasets. In particular, the WERS 2011 study and the *Class of '99* studies would be potential sources for further investigation. Although this analysis of secondary data has not been conducted in this thesis, corresponding findings from other relevant studies are mentioned alongside the quantitative (and qualitative) findings, and are discussed more fully in the Conclusion (Chapter 10).

### 3.6.3 Qualitative validity

In contrast to the quantitative phase, the validity of the qualitative phase was demonstrated by explaining the decisions taken in selecting interview participants as discussed above, and by supporting claims about themes with evidence in the form of respondents' quotations in the qualitative chapters. As J. Mason (2002) suggested,

explaining how the methods were used to arrive at particular conclusions and tracing the routes for arriving at particular interpretations can show validity in qualitative research.

Regarding qualitative generalisability, as mentioned before, the sample of 20 graduates in this project is relatively homogeneous. The findings may be applicable to graduates from similar backgrounds employed in similar jobs in similar sized businesses, but not to the graduate population as a whole. However, generalisability may be viewed not only as empirical (from the sample to the population), but as theoretical (being able to show how and why things work in specific contexts which have been selected in strategic ways) (J. Mason, 2002). In this case, insights into how business size interplays with skill utilisation and career development in small businesses could inform small-scale small business theory. Ultimately, further research could explore to what extent the findings in this project also occur in other contexts.

### 3.7 Ethical considerations

Standard procedures were taken to have the research approved by the IER and university Ethics Committees and conformed to the requirements of ESRC Framework for Research Ethics. Prior to interviews, respondents were informed about the topics that would be discussed and that the interview would be recorded. The following statement was used: 'All information collected will be kept confidential, and will be made anonymous in all related research work.' The respondents who agreed to interview signed up on an online form hosted on the University of Warwick webspace complying with university-wide security protocols, to minimise security risks.

The anonymity and confidentiality of individual respondents and the organisations studied in the research was ensured by use of aliases and removing data with the potential to identify the respondent or the company, such as: employers' and colleagues' names, HEIs, specific subjects studied, and specific geographical locations. When connecting the interview data with the survey data, I took every precaution to ensure that the respondent would not be identifiable.

The interview participants were explicitly delinked from their *Futuretrack* ID. This was done through the help of Ritva Ellison, the Senior Project Officer in charge of managing the *Futuretrack* dataset, who, in conformity with Data Protection and Warwick University

research ethics requirements, identified appropriate respondents according to the selection requirements I had specified. As stipulated in the *Futuretrack* survey, personal contact details were stored securely, separately from the mail data files, and potential interview respondents were invited to opt into my project by email, initially sent on my behalf by my supervisor.<sup>102</sup>

### 3.8 Summary

This chapter set out the MMR design and methods used in this PhD project to investigate graduates' use of knowledge and skills in small and large businesses. The advantages and limitations and the reasons for using these approaches were discussed, as well as the changes to the original research design. The next chapters present the findings. Chapters 5 and 6 present the quantitative findings and test whether business size affects skill utilisation as hypothesised in Section 3.5.3.1. Chapter 8 presents the qualitative data which builds on the quantitative analysis, particularly graduates' meanings of knowledge and skills and examples of using research and innovative thinking skills, and skills they did not have the opportunity to use. Chapter 9 extends the research and presents the qualitative analysis about graduates' experiences of work: their changing responsibilities, particularly whether they *take* or *make* opportunities, and their experiences of early career development.

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<sup>102</sup> See Appendix C Figure C.2 for the invitation letter.

## 4 Quantitative phase

The following chapters investigate patterns of graduate employment in small firms, and examine the role of business size in influencing the use and development of graduate skills and knowledge at work using the *Futuretrack* dataset. The sample used in this quantitative phase of the thesis comprised first-degree, UK-domiciled, UK-educated graduates, who were employed in the private sector at the time of fourth wave of the *Futuretrack* survey.<sup>103</sup> The total number of respondents in the sample used here was 4,572. This sample is referred to as the ‘thesis sample’ or ‘sample’ in this chapter, unless stated otherwise.

The main issues investigated in the quantitative analysis were where graduates were employed in the labour market and whether employer size made a difference to graduates’ perceptions of skill and knowledge utilisation. The characteristics of graduates’ employment in small businesses is described in Chapter 5, looking at graduate employment by business size, occupation and industry, and at graduates’ values and career attitudes.

Chapter 6 looks at whether business size affects perceptions of skill utilisation measured in four ways: the likelihood of graduates’ using skills and knowledge developed during their undergraduate degree; the likelihood of using certain specific skills in their current job; whether the job required a degree, and whether the graduates reported high levels of job appropriateness. The four hypotheses regarding business size affects graduates’ perceived levels of skill utilisation are tested using regression analysis. The last Section of the chapter summarises the main findings relating to graduate employment in small and large businesses, and links the issues raised in the statistical analysis to the qualitative interview investigation.

The focus of the following two chapters is how graduates’ perceptions of employment, as recorded in the *Futuretrack* survey, compare between employment in small and in large businesses. However, data on micro and medium-sized businesses are also presented, to provide more context to the small business information.

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<sup>103</sup>*Futuretrack* respondents who did not go on to university; who started but did not complete an undergraduate degree; and those who did a postgraduate qualification or were still in full-time study at the time of the fourth wave of the survey were not included in the sample. Graduates employed in the public, not-for-profit sector and those who were self-employed at the time of the survey were also excluded. Comments following a presentation of a part of this chapter (IER workshop, 5 March 2013) suggested that self-employed would complicate the analysis and the sample should be redefined for private sector employees only. See Section 3.3.3 for a discussion.

## 5 Graduate employment and business size

### 5.1 Introduction

As discussed in Chapter 2, graduates are increasingly being employed in jobs that had not been traditional areas of graduate employment as a consequence of the expansion in higher education. As the number of traditional graduate jobs has not kept up with the increase in the number of graduates, the government has looked to SMEs as a source of graduate employment (Sear et al., 2012; Williams and Owen, 1997). It has been well established in the literature that graduates are typically overrepresented in large companies and underrepresented in small businesses compared to the employed population as a whole (Hart and Barratt, 2009), but almost no research has compared graduate skill utilisation and experience of work between graduates employed in small and in large businesses. This poses a problem in drawing inferences about the effect of business size on employment outcomes because factors such as the type of job, the industry and the graduates' personal characteristics can affect the same outcomes.

The following analysis uses the sample of 4,572 first-degree, UK-domiciled, UK-educated graduates, who had completed their undergraduate degree and were employed in the private sector at the time of the *Futuretrack* survey in autumn/winter 2011/12. In the descriptive analysis, unweighted observations are reported, but percentages are weighted unless stated otherwise.<sup>104</sup>

### 5.2 Graduate employment and business size

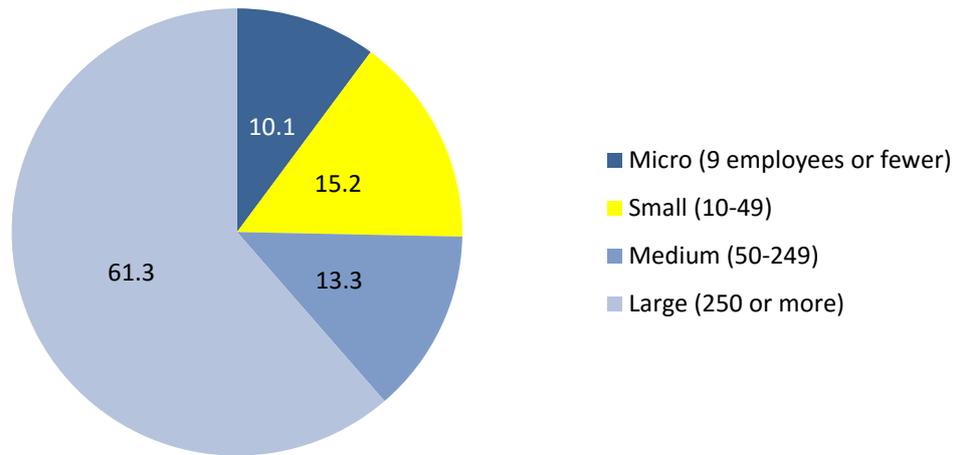
#### 5.2.1 Employer size

The majority of the graduates in the sample, 61%, were employed in large businesses at the time of the survey, with a further 10% in micro, 15% in small and 13% in medium-sized businesses (Figure 5.1). Compared to HESA DLHE 2003/04 (in Holden et al., 2007) the proportion of graduate employment by business size was broadly similar, except that HESA data showed a larger proportion of graduates employed in medium-sized businesses (24%).

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<sup>104</sup> See *Futuretrack* Stage 4 Report, Appendix 1, Technical Appendix, pp. 201-203 (Purcell et al., 2013). The weights used in the *Futuretrack* Stage 4 survey corrected for gender and UCAS tariff points, factors which most affected the likelihood of respondents completing the online survey, and were balanced to correct for over and under-representation of responses from selected HEIs, using the UCAS HE applicants in 2005/06 as the population.

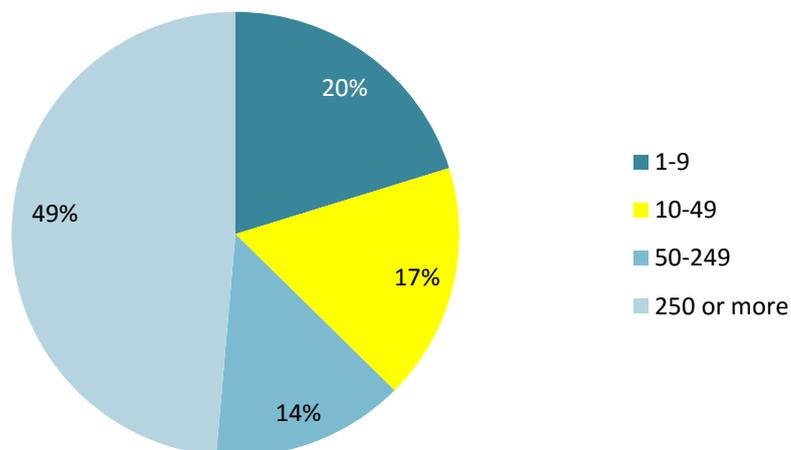
Figure 5.1: Proportion of graduates by employer size



Source: Futuretrack Stage 4 thesis sample, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted percentages. N = 4,481.

Compared to UK SME figures, the *Futuretrack* first-degree graduates in the sample were more likely to be employed in large businesses, less likely to be employed in micro and small businesses, and about equally as likely to be employed in medium-sized businesses as UK employees as a whole (Figure 5.2). These data support claims made in the literature that graduates tend to be employed in larger companies than in SMEs, and small businesses in particular, compared to the employed population as a whole (e.g. Hart and Barratt, 2009; Hawkins and Winter, 1996).

Figure 5.2: Share of employment by business size (BIS, 2011)



Source: Calculated from SME statistics for the UK and Regions 2009, BIS (2011); Share of employment by business size. Only businesses with employees are included.

### 5.2.2 Occupations

The following analysis of graduates' occupations uses the Standard Occupational Classification (SOC) 2010, shown in Table 5.1 below, and SOC(HE) 2010 (see Section 2.3.3.1).

**Table 5.1: Standard Occupational Classification (SOC) 2010, major occupational groups.**

- 1 Managers, directors and senior officials
- 2 Professional occupations
- 3 Associate professional and technical occupations
- 4 Administrative and secretarial occupations
- 5 Skilled trades occupations
- 6 Caring, leisure and other service occupations
- 7 Sales and customer service occupations
- 8 Process, plant and machine operatives
- 9 Elementary occupations

Source: Reproduced from Office for National Statistics (ONS, 2010).

In the *Futuretrack* thesis sample 28% of the graduates were employed in the professional occupations and a further 28% in the associate professional and technical occupations. A substantial proportion worked in the administrative and secretarial occupations (15%) and in sales and customer service occupations (14%). The *Futuretrack* distribution was broadly similar to comparable HESA data (average of those graduating in 2009/10 and 2010/11), except that HESA reported a lower proportion of graduates employed in the professional occupations (25%) and in the administrative and secretarial occupations (9%) than the *Futuretrack* sample (HESA, 2012).<sup>105 106</sup>

Within occupations, over 60% of graduates in the sample employed in caring, leisure and other service occupations worked in an SME (17% in small businesses), but only 20% of graduates employed in sales and customer services did so (with only 7% in small businesses)

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<sup>105</sup> Author's calculated average for those graduating in 2009/10 and 2010/11 6 months after graduation (HESA, 2012, SFR 178, Table 4a). Note that the HESA data uses SOC 2000, which is not directly comparable to SOC 2010, but is very broadly comparable at the major group level.

<sup>106</sup> However, the two datasets are not strictly compatible. First, this *Futuretrack* sample concerns private-sector employment only. Second, HESA DLHE takes a census of all graduates six months after graduation, and is more likely to give a lower proportion of graduates in employment compared to surveys which take a longer-term perspective.

(Figure 5.3). The elementary occupations had the largest proportion of graduates employed in small businesses than other occupations (21%). Compared to graduates who graduated in 2003/04 (Holden et al., 2007, HESA data), and looking at the occupational distribution by employer size groups (i.e. X% of small firm graduates employed in occupation Y), the *Futuretrack* sample had a higher proportion of small business graduates in the associate professional occupations (31% compared to 25%) and a lower proportion of large firm graduates in the same occupational group (27% compared to 31%). The proportion of small business graduates employed in the professional occupations was similar between *Futuretrack* and 2003/4 graduates (just over 30%). Regarding large businesses, *Futuretrack* had a much higher proportion of graduates in large businesses in sales and customer service occupations (18% compared to 7%) and in elementary occupations (5% compared to 2%) than 2003/4 graduates. These differences are indicative of the rising proportion of graduates employed in sales and customer service occupations over time,<sup>107</sup> and are also symptomatic of the impact of the recession on graduate employment (ONS, 2012).

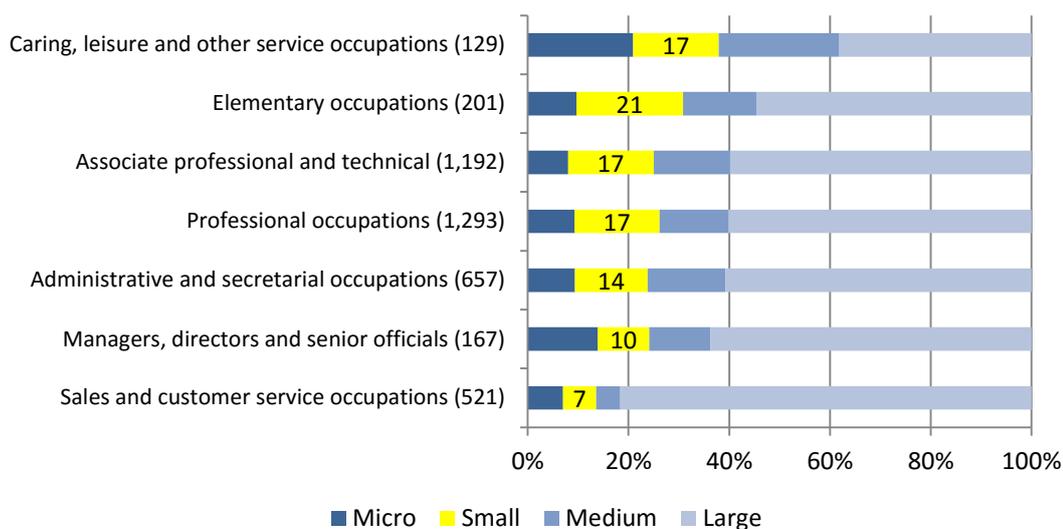
Looking at jobs by SOC(HE) 2010 and employer size, 31% of all graduates in the thesis sample were employed in non-graduate jobs in large businesses, and 20% were employed in expert jobs in large businesses (20%). This is not surprising because the majority of graduates were employed by large employers as shown in Figure 5.1. When the distribution of graduates *within* the SOC(HE) 2010 classification was looked at, graduates employed in communicator jobs were more likely to be working in a small firms than graduates in expert, orchestrator, or non-graduate jobs (22%, compared to 14, 16, and 11%, see Figure 5.4).<sup>108</sup>

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<sup>107</sup> HESA DLHE data reported that the proportion of graduates employed in sales and customer services occupations increased from 10% in 2006/07 to 14% in 2010/11, and the proportion of graduates employed in hotels and restaurants and in the wholesale and retail trade/repair sectors increased from 20% in 2006/07 to 30% in 2008/09, remaining at 30% thereafter (HESA, 2012, SFR 178, Table 4b).

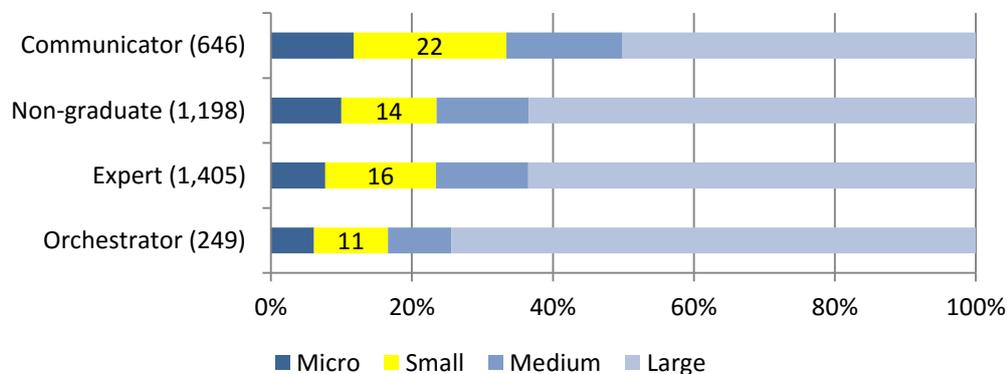
<sup>108</sup> Statistically significant association: Uncorrected  $\chi^2(9, N=4288) = 65.58$ , Design-based  $F(8.95, 37839.02) = 5.68$ ,  $p < .001$ .

**Figure 5.3: Business size of main current employer by major occupational group**



Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted row percentages. Arranged in descending order of proportion of graduates employed in SMEs. Unweighted observations in parentheses. Skilled trades and process, plant and machine operatives excluded due to low numbers of observations. N=4,160.

**Figure 5.4: Business size of main current employer by SOC(HE) 2010**



Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted row percentages. Arranged in descending order of proportion of graduates employed in SMEs. Unweighted observations in parentheses. N=4,228.

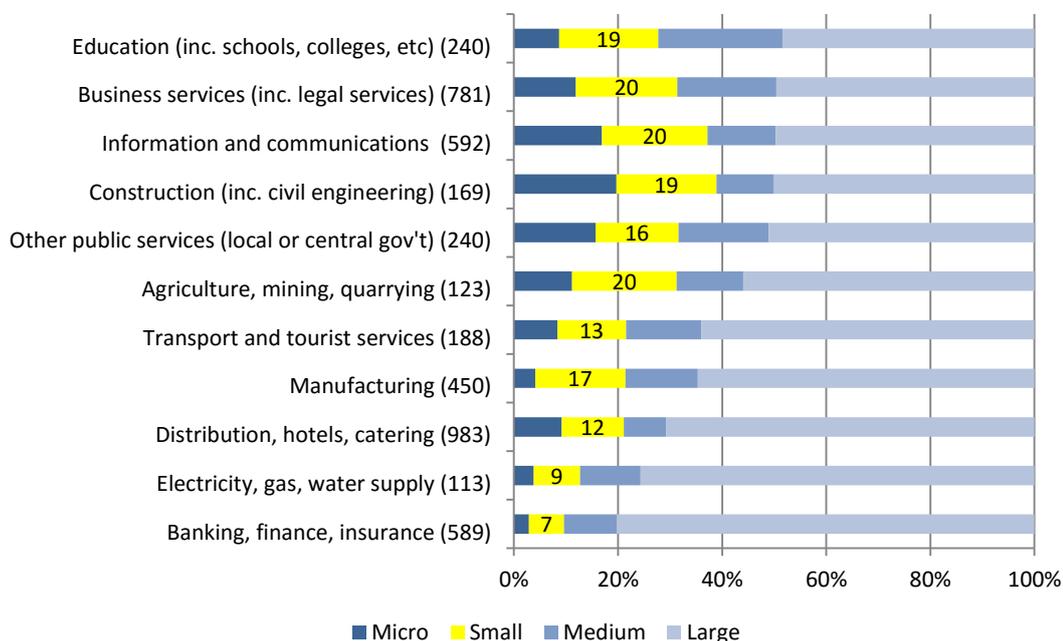
### 5.2.3 Industries

Out of all the graduates in the sample, almost a quarter were employed in the distribution, hotels and catering sector – a similar proportion to HESA (2012) data.<sup>109</sup> The next most

<sup>109</sup> Author's calculated average for those graduating in 2009/10 and 2010/11 employed in wholesale and retail trade/repair and hotels and restaurants 6 months after graduation (HESA 2012, SFR 178, Table 4b).

common industries were business services (16%), ICT (14%), and banking, finance and insurance (12%).<sup>110</sup> The distribution of graduates employed in different sizes of businesses within different industries is shown in Figure 5.5. For more than half of the industry sectors, between 40-50% of graduates were employed in SMEs, and 16-20% in small businesses. But for graduates employed in banking, finance and insurance, in electricity, gas and water supply, and in distribution, hotels, catering, this proportion was much lower, less than 30% in SMEs as a whole, and 12% and lower in small businesses.

**Figure 5.5: Proportion of graduates in businesses by size and major industry group**



Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted row percentages. Arranged in descending order of proportion of graduates employed in SMEs. Unweighted observations in parentheses. N = 4,468.

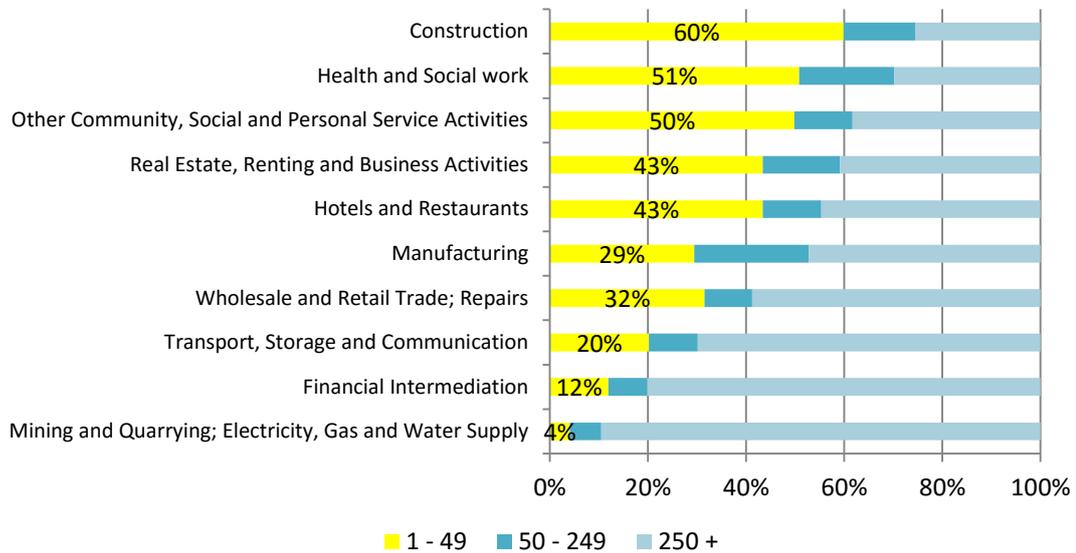
Looking at UK employees as a whole, the highest proportions of small firm employment was in the construction, and health and social work sectors (50% or more of employees in these sectors worked in small firms), and the lowest proportions were in financial intermediation (12%) and mining, quarrying and related (4%).<sup>111</sup> If business services is compared to the BIS real estate, renting and business services sector, over 30% of Futuretrack graduates in the sample were employed in micro and small businesses in this sector, compared to 43% of UK employees. If the distribution, hotels and catering sector used in the *Futuretrack* survey is

<sup>110</sup> N=4,558. Weighted percentages.

<sup>111</sup> Note that the data are not directly comparable because BIS statistics used a slightly different classification of industry groups.

compared to the BIS hotels and restaurants and wholesale and retail trade sectors, the proportion of graduates employed in micro and small firms in this sector was lower than the proportion of all UK employees (21% compared to 37.5%).<sup>112</sup>

**Figure 5.6: Employment by business size and industry sectors (BIS, 2011)**



*Source: Calculated from SME statistics for the UK and Regions 2009, BIS (2011); Proportions of employees in businesses by size, across different industry sectors. For Agriculture, Hunting & Forestry, Fishing, and Education are not shown (the data for the two larger types of businesses were not given because they were deemed to be disclosive). Only businesses with employees are included. Arranged in descending order of proportion of graduates employed in SMEs. Unweighted observations in parentheses.*

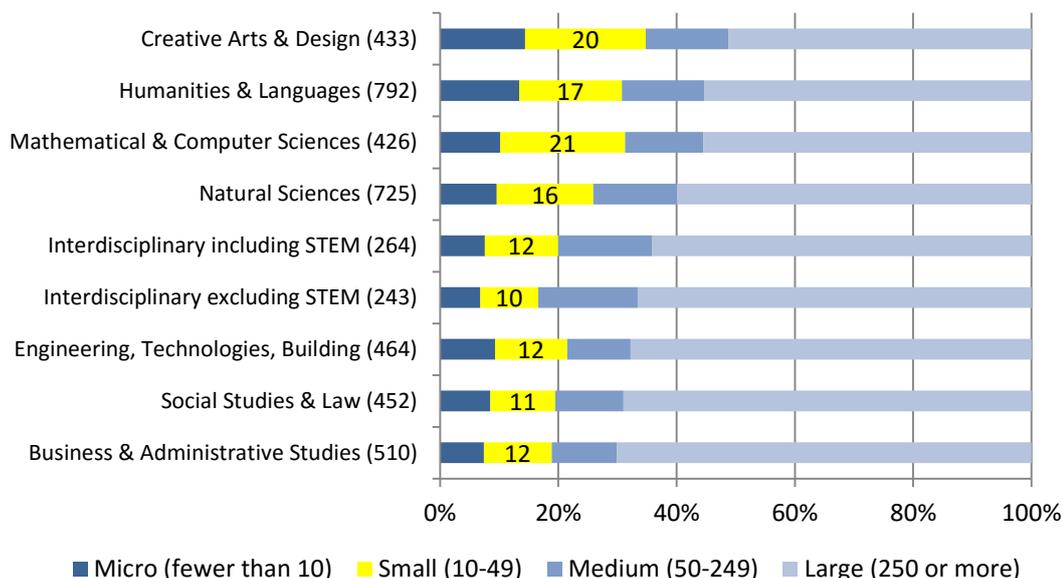
#### 5.2.4 Undergraduate subjects and HEI type

In general, in this sample there was not much variation between the broad subject groups studied at undergraduate level and the size of the graduates' employers,<sup>113</sup> or between HEI types and employer size. Graduates who studied creative arts and design and mathematical and computer sciences were slightly more likely to work in small firms (over 20%), while those who studied social studies and law, and interdisciplinary subjects excluding STEM were among those least likely to work in small firms (Figure 5.7). There is no a priori reason to expect a direct relationship between subject and business size, but it could be the case that some subjects are associated with particular occupations and/or industries, which are in turn more or less associated with small and large businesses.

<sup>112</sup> The figure of 37.5% was calculated by taking the mean proportion of employment in the hotels and restaurants and wholesale and retail trade sectors (43.4+31.6)/2).

<sup>113</sup> Looking at the STEM subject dummy variable only, there was no significant association between STEM and non-STEM subject groups and business size.

Figure 5.7: Undergraduate subject studied and employer size

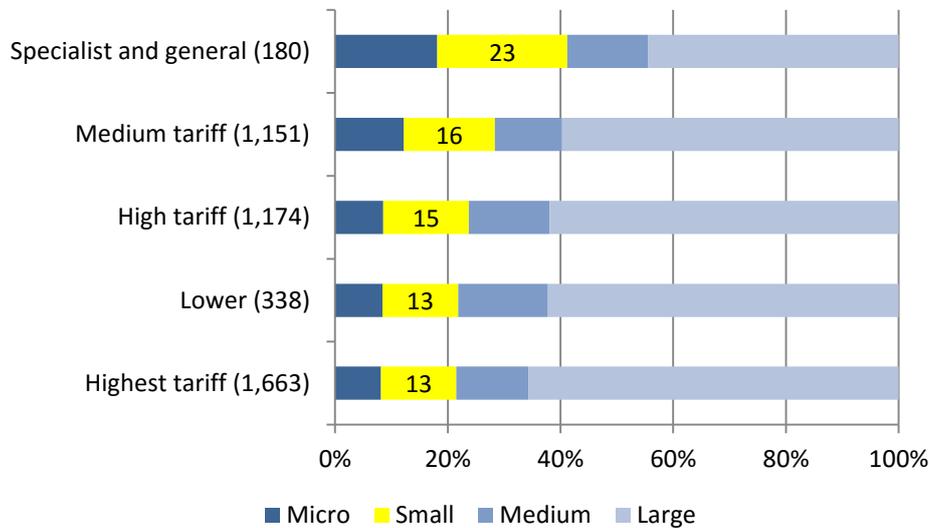


Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted. Medicine and Related, and Education subject groups have low observations and are not shown. Arranged in descending order of proportion of graduates employed in SMEs. Unweighted observations in parentheses. N = 4,471.

There was little difference between the HEI tariff groups at which the graduates studied and employer size. However, graduates who studied at specialist and general HEIs were much more likely to work in small firms than those who graduated from highest, high, medium and low tariff HEIs (23% compared to 16% or less). Only 5.4% of the graduates in this sample attended specialist (1.5%) and general (3.9%) HEIs. Specialist HEIs in particular were most associated with arts subjects (including fine art, music, dance and drama) (Purcell et al., 2009). In this sample, more than two thirds of specialist HEI graduates and more than half of general HEI graduates had studied creative arts and design. Because creative arts and design graduates were more likely to work in small firms than graduates from other subjects, this may partly explain why graduates from specialist and general HEIs were also more likely to work in small firms, and SMEs in general. It should be noted that the generalist and specialist HEIs account for a very small proportion of graduates, so results from this group of HEIs should be treated with caution.<sup>114</sup>

<sup>114</sup> Note that graduates who attended specialist HEIs “have more in common socially (and in terms of prior career development) with students attending highest and high tariff universities than with those in lower tariff access universities and general HE colleges” (Purcell et al., 2009, p. 5). With hindsight, a better approach may have been to exclude graduates attending these HEIs from this analysis.

Figure 5.8: HEI type and employer size



Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted. Arranged in descending order of proportion of graduates employed in SMEs. Unweighted observations in parentheses. N = 4,471.

Most of the graduates in this sample, over 85%, completed three- or four-year degrees (43% and 44% respectively) with a further 13% completing courses longer than four years (N=3,501).<sup>115</sup> There was no significant association between course duration and employer size.<sup>116</sup>

### 5.2.5 Personal characteristics

There was no significant association between employer size and the majority of graduates' personal characteristics (sex, mature student status, socio-economic background).

However, graduates from non-white ethnic backgrounds were more likely to work in a large company and less likely to work in small businesses than graduates from a white ethnic background,<sup>117</sup> especially graduates from Black and Asian ethnic groups (88% and 71% employed in large companies respectively). The reasons for this finding are unclear, and will not be discussed at length here; however, a brief discussion is warranted.

<sup>115</sup> Note that there was a high proportion – almost a quarter of responses – of missing data about the duration of the course. Similar levels of missing data were found in the *Futuretrack* Stage 4 report (Purcell et al., 2013, pp. 11-12), so these results should be treated with caution.

<sup>116</sup> Uncorrected  $\chi^2$  (6, N= 3,434) = 14.44, design-based  $F(5.98, 20541.53)$ = 1.83, p= .0896.

<sup>117</sup> Uncorrected  $\chi^2$  (3, N=4,476)=40.76, Design-based  $F(3.00, 13410.55)$ =9.94, p<.001.

Section 2.5.2 discussed the limited research into graduates' ethnicity and employer sector and size, which suggested that in general, despite the variation between and within ethnic groups, minority ethnic graduates were more likely to be employed in ICT, health, business, and finance industries, and in traditional graduate jobs, but also in non-graduate jobs, and to prefer larger organisations as employers with a clear hierarchical career progression (Kirton, 2009; Speed, 2007; Mok, 2006). In the thesis sample, a higher proportion of Asian and Black graduates were employed in the banking, finance, and insurance sector than white graduates (29% and 17% compared to 11%), which is also consistent with existing research. This sector had a low proportion of employment in small businesses for graduates and for UK employees as a whole (see Section 5.2.3), which may partly explain the higher proportion of ethnic minority graduates employed in large businesses.

### 5.3 Graduates' preferences and business size

This Section compares graduates employed in small and in large businesses with respect to the reasons why the graduates took their jobs, their personal values, salary differences, attitudes to risk and ideas about career development. The descriptive statistics below provide an overview of the association between these variables and business size only, although graduates' employment, HE experience, and personal background are also likely to affect these values.

#### 5.3.1 Reasons for taking job

The literature on employment in small businesses suggested that although graduates may take on more responsibility in a shorter time in a small business, pecuniary and other 'perks' are likely to be lower than in a large business. This general finding was investigated, looking at the reasons why the graduates selected their jobs (Table 5.2) and at the graduates' personal values (Table 5.3) by business size.

Graduates employed in small businesses were more likely than graduates in large business to have decided to take their job because it suited them in the short term (Table 5.2). Moreover, Table 5.2 shows that the proportion of graduates who selected this as a reason diminished as business size increased. In contrast, graduates employed in large businesses were more likely to cite attractive salary and other conditions of employment, job security, and the fact that they were already working for that employer as reasons to take their jobs.<sup>118</sup>

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<sup>118</sup> Chi-squared test of association on weighted data.

The proportion of graduates who selected attractive salary and other conditions of employment as reasons for selecting their job increased with business size. There was no significant difference between business size and other reasons in the list.<sup>119</sup>

These results are consistent with existing research which shows that graduates’ both perceive SMEs, and especially smaller businesses, to offer lower salaries and other benefits compared to large businesses, and that these perceptions are borne out by the evidence. For example, in a survey of over 500 SMEs in the East Midlands region, the SMEs were found to have considerably lower levels of pension schemes, training towards professional qualifications, and private healthcare schemes provision compared to the Association of Graduate Recruiters members (predominantly larger companies) (Kewin et al., 2010; see also Section 5.3.3 for salary differences).

**Table 5.2: Reasons for selecting current main job by employer size**

	Micro	Small	Medium	Large	$\chi^2(3)$	F <sup>‡</sup>
Salary level ***	20.98	26.59	30.45	40.91	107.41	F(2.99, 13399) = 26.9
Other conditions***	23.77	22.13	30.06	30.99	27.32	F(2.99, 13406) = 6.78
Already working***	13.28	10.43	10.03	16.56	28.73	F(3.00, 13430) = 6.98
Job security***	17.66	22.38	23.91	32.77	69.49	F(3.00, 13422) = 17.37
Short term**	40.06	36.32	35.72	30.99	20.27	F(3.00, 13415) = 5.14

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . † Uncorrected  $\chi^2$ , ‡ Design-based F statistic.

Note: All p-values were below .001, except for Panel (b), ‘It suited me in the short term’ ( $p = 0.002$ ).

Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted column percentages.  $N = 4,479$ .

Although none of the reasons in the list directly mentioned developing responsibility, the reason ‘to gain experience in order to obtain the type of job I really want’ could be viewed as a proxy for taking on responsibilities to enhance career prospects. There was no significant difference between the proportions of graduates employed in small and in large businesses who agreed with this reason, which suggests that graduates selected this as a reason to take their job irrespective of employer size (about one third of respondents in each case).

<sup>119</sup> Regarding reasons for taking the current main job (Q19), the respondents were able to select as many reasons as applied to them out of a list of twelve (including the option to specify another reason): (1) It was exactly the type of work I wanted; (2) The salary level was attractive; (3) Other conditions of employment were attractive; (4) I wanted to work in this locality/region; (5) I was already working for this employer; (6) It offered interesting work; (7) To gain experience in order to obtain the type of job I really want; (8) It offered job security; (9) It was compatible with my partner's career; (10) It suits me in the short term; (11) It is better than being unemployed; (12) Other (please specify).

### 5.3.2 Personal values

Graduates who were employed in small firms differed slightly from those who were employed in large companies on some personal values. The graduates were asked to rate the importance of specific values on a 1-5 scale from ‘very important’ to ‘unimportant’ (Q42).<sup>120</sup> For graduates working in small firms, the ethics of their employer was more important than for those employed in large companies (Table 5.3). In contrast, for graduates employed in large companies, career progression, high financial reward, ability to develop their capabilities, job security, and gaining international work experience were more important than for graduates in small companies. These findings are consistent with the reasons that graduates in large companies gave for deciding to do their jobs shown in Section 5.3.1. Graduates employed in large companies were more likely than those in small companies to highly value factors associated with salary and other benefits *and* to give these as reasons for deciding to do their jobs.

**Table 5.3: Graduates’ personal values by employer size**

	Micro	Small	Med.	Large	X <sup>2</sup> (3) <sup>†</sup>	F <sup>‡</sup>	p
Career progression***	48.69	46.81	48.02	54.73	21.32	F(3.00, 13427) = 5.14	.001
High financial reward***	22.38	20.38	21.34	30.45	46.44	F(2.99, 13410) = 11.52	<.001
Able to develop capabilities*	52.78	51.11	48.51	55.08	10.33	F(3.00, 13429) = 2.62	.049
Job security**	40.52	43.38	38.43	46.76	17.80	F(3.00, 13432) = 4.53	.004
Ethics of employer*	35.14	35.34	30.85	29.73	11.51	F(3.00, 13428) = 2.91	.033
International work experience*	17.59	14.44	9.603	16.63	20.61	F(2.99, 13400) = 5.20	.001

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . † Uncorrected  $\chi^2$ , ‡ Design-based F statistic.

Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted column percentages.  $N = 4,481$ .

High values attributed to career progression and developing capabilities could be viewed as a proxy for valuing the ability to take on more responsibility in work. A higher proportion of graduates employed in large companies rated both of these values as ‘very important’ compared to graduates in small companies (Table 5.3). It should be noted that because the

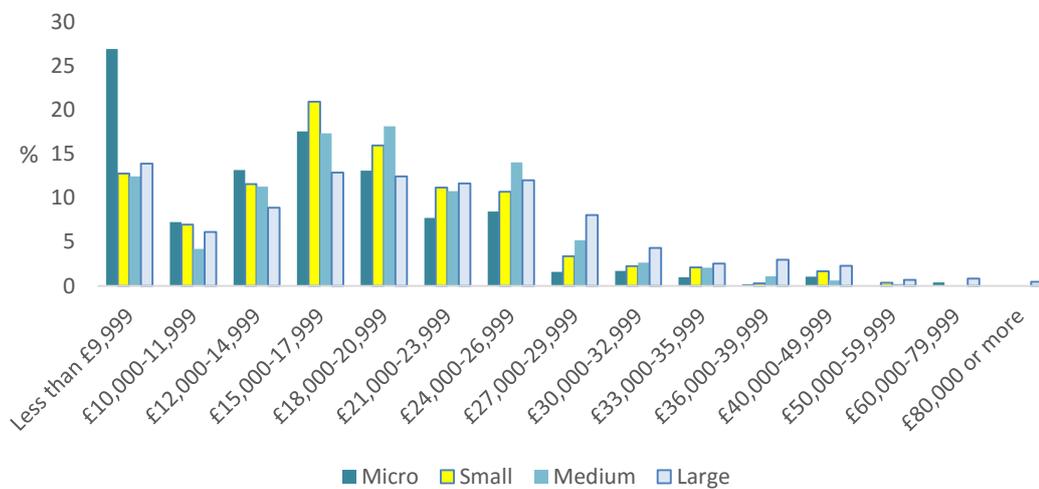
<sup>120</sup> The values were: (1) Career progression; (2) High financial reward; (3) doing a job where I am able to develop my capabilities; (4) Doing a job I really enjoy; (5) Work-life balance; (6) Being or becoming a parent; (7) Job security; (8) The ethics of my employer; (9) Doing socially useful work; and (10) Gaining international work experience.

question did not specifically ask about the potential to take on more responsibility *quickly*, these responses cannot be used to examine the differences in perceptions of actual career development between small and large businesses. Instead, career development was investigated in the qualitative part of the study (see Chapter 9).

### 5.3.3 Current salaries

Although this thesis does not specifically look at graduate salaries, unlike other work on graduate skill utilisation (e.g. Green and Zhu, 2010; Dolton and Vignoles, 2000), this issue is briefly addressed in light of the discussion above. The graduates’ annual salaries at the time of the survey (Q32) were compared by employer size (Figure 5.9). The figure shows that the distribution of graduates’ earnings in small companies is shifted to the left of graduates’ earnings in large companies. Graduates employed in large companies were more likely to be situated at the top end of the earnings distribution and less likely to be at the bottom end compared to graduates employed in small companies. Interestingly, over a quarter of graduates employed in micro businesses were earning less than £10,000 per annum.

Figure 5.9: Graduates’ salary distributions by employer size



Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted column percentages. N = 4,422.

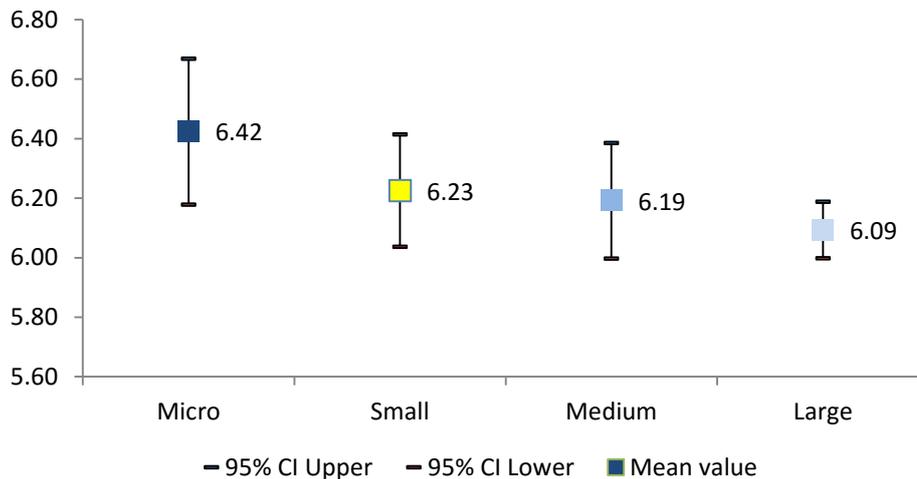
These results are consistent with the oft-cited evidence that smaller companies are more likely to pay lower salaries than large companies across the labour market as a whole (see Section 2.5). Of course, graduates’ earnings are also influenced by other variables, such as degree subject, HEI type, occupation, industry, and respondents’ gender (see Purcell et al.,

2013 for more information). Owing to time and space constraints, the interactions of these variables with earnings and small firms are outside of the scope of the thesis.

### 5.3.4 Attitudes to risk

The evidence presented so far suggests that graduates who valued high salary prospects, job security, and other job benefits were more likely to be employed in small firms. This subsection looks at whether graduates employed in small companies were more prepared to take risks in general. Graduates' perceived attitudes to risk were compared across business size groups.<sup>121</sup> The mean scores and the 95% confidence intervals are shown in Figure 5.10. The findings show that although graduates were more averse to taking on risk as business size increased, most of the differences were not statistically significant.

Figure 5.10: Graduates' attitudes to risk by business size



Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted means. N = 4,474.

There are two main things to note from Figure 5.10. First, the differences between the means were very slight. The overall average weighted mean was 6.17, 95% CI [6.10, 6.24], and the means by business size are fairly close to the average. Second, there were few significant differences.<sup>122</sup> While graduates in micro businesses may have been slightly more likely to be

<sup>121</sup> The Futuretrack survey asked: (Q44) 'Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?' (1-10 scale, 1=avoid taking risks, 10=fully prepared to take risks).

<sup>122</sup> An adjusted Wald test of differences between means was used after the post-survey mean estimation command in Stata (null hypothesis: no significant difference between means; alternative hypothesis: a significant difference at the 5% level). The only significant difference among mean

prepared to take on risks than those in large businesses, no statistically significant differences were found between graduates in small, medium and large businesses.

### 5.3.5 Career development

The remaining questions in the *Futuretrack* survey pertaining to aspects of career development were satisfaction with career development prospects (part of a 6-facet job satisfaction question), and three questions about future careers, which may be viewed as aspects of *career clarity* – the clear perceptions of career possibilities open to individuals and the ways of attaining them (Scholarios et al., 2003, Arnold and Mackenzie Davey, 1994). Graduates employed in large businesses were more likely to be highly satisfied with their promotion and career development prospects and slightly more likely to be optimistic about their long-term prospects than those employed in small firms (Table 5.4). There was no significant difference between other aspects of career clarity and employer size.

There were, however, other differences between employer size and individual facets of job satisfaction, although there was no significant difference between employer size and overall job satisfaction. For example, graduates in small businesses were more likely to be highly satisfied with the work itself and the opportunity to use their own initiative than those in large companies, but less likely to be highly satisfied with total pay or job security than those in large companies (without controlling for occupation or other variables).

However, these findings must be treated with caution. Job satisfaction facets are not necessarily reflections of the job itself, but of respondents' own expectations and reference groups. For example, Rose (1994) using SCEDI data found that female part-time employees, almost half of whom scored low on own skills and job skills, reported *higher* job satisfaction scores than full-time women and men, which may reflect that most female part-time workers judged job satisfaction on different criteria to full-time workers.<sup>123</sup> Rose also found

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attitudes to risk existed between graduates employed in micro businesses and those in large businesses ( $F(1, 4473) = 6.08, Pr > F = .014$ ).

<sup>123</sup> In this thesis sample, female graduates had much lower overall job satisfaction than male graduates, a result which contradicts the substantial evidence that women tend to have higher job satisfaction than men even as the majority of women's work has poorer working conditions (the 'paradox of the female worker,' Cabrita and Perista, 2007). This gap persisted in expert and orchestrator type occupations, which contradicts findings that the gender satisfaction gap may disappear for young, highly educated professionals (Clark, 1997). However, job satisfaction was not a focus of this thesis and these findings were not investigated here further. The relationship between employer size, job satisfaction, and skill utilisation among male and female graduates is an area for further research.

that satisfaction with the ability to use own initiative was much higher than for other intrinsic satisfaction facets, and remained high in groups with low-skilled jobs. Thus, while skill utilisation has been shown to be an important predictor of job satisfaction (O’Brien, 1983) the relationship may be mediated by other factors.

**Table 5.4: Graduates’ perceptions of career development by size of employer**

	Micro	Small	Med.	Large	N	$\chi^2(3)^{\dagger}$	$F^{\ddagger}$	p
<i>High satisfaction (6 or 7 out of 7) with the following aspects of the job</i>								
Promotion / career development prospects***	26.02	23.93	29.37	36.15	4474	50.81	F(2.99, 13360) = 12.81	<.001
Opportunity to use initiative***	48.83	47.59	44.22	38.92	4475	29.38	F(3.00, 13411) = 7.42	<.001
<i>High agreement (6 or 7 out of 7) with the following statements</i>								
Clear idea about occupation	45.73	43.19	42.46	43.3	4448	1.23	F(3.00, 13359) = 0.31	.817
Optimistic about long-term career prospects*	40.40	47.23	49.58	49.94	4448	14.8	F(3.00, 13361) = 3.74	.011
Skills employers are looking for	49.54	49.58	55.58	53.14	4447	6.57	F(3.00, 13329) = 1.66	.173

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .  $\dagger$ Uncorrected  $\chi^2$ ,  $\ddagger$  Design-based F statistic.

Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted percentages.

It is not surprising that graduates’ career clarity responses were not associated with employer size, with the exception of graduates in large companies being slightly more optimistic about long-term career prospects. Previous research suggested that certain occupations, particularly traditional graduate occupations, were associated with greater career clarity (Scholarios et al., 2003). These factors may be more important than employer size differences. While it may be argued that graduates in smaller businesses are more likely to be responsible for managing their careers (see Section 2.3.2 and Chapter 9), the Futuretrack career clarity questions do not quite capture the concept of career self-management, and therefore the results discussed here should be interpreted with caution.

## 5.4 Discussion

This chapter looked at the patterns of graduate employment in small and large businesses in the UK, and at graduates’ work preferences and values. The evidence presented in this chapter has shown that graduates were underrepresented in SMEs compared to UK

employment as a whole, particularly in micro and in small businesses, confirming findings in the literature (Hawkins and Winter, 1996; Hart and Barratt, 2009). Graduates employed in the elementary occupations (SOC(2010) unit group 9), caring and leisure (group 6), professional (group 2) and associate professional (group 3) occupations were more likely to be work in a small firm than those in other occupations. Using (SOC(HE)2010), graduates in communicator jobs were also more likely to work in a small firm. The industries in which graduates were more likely to work in small businesses were business services, ICT, agriculture and related, education, and construction.

Regarding HE experience, graduates who studied creative arts and design were more likely to be employed in small companies than those from other subjects but there was relatively little variation between other subject groups. There was no substantial relationship between employer size and HEI type; an association was found between graduates from specialist and general HEIs and employment in small firms, but this relationship is likely to be mediated by the high proportion of creative art and design graduates from these institutions, who were more likely to be employed in smaller businesses than those from other subject groups.

Lastly, there was a positive association between ethnic minority graduates and employment in large companies, which may be partly explained by the prevalence of these graduates in the financial services sector, which has a low proportion of small firm employment compared to other sectors.

On the whole, the characteristics of graduates employed in small businesses and large businesses were more similar than different. However, graduates in large businesses were more likely to value (and to earn) high salaries, as well as job security, and career development / promotion prospects than graduates in small businesses. Graduates in large businesses were also more likely to be highly satisfied with their promotion prospects than graduates in small businesses. In contrast, graduates in small businesses were more likely to value the ethics of their employer and to be highly satisfied with the opportunity to use their own initiative. However, there was almost no difference between graduates' ideas about future careers and employer size. These findings are generally consistent with existing research on small firms, in particular with the large amount of empirical evidence that smaller businesses offer lower salaries and other benefits compared to large businesses.

*Chapter 5 – Graduate employment and business size*

The following chapter investigates graduates' utilisation of skills and knowledge at work and conducts multivariate analyses to look at whether this differs between small and large businesses.

## 6 Graduates' skill utilisation and business size

### 6.1 Introduction

This chapter investigates whether business size affected four concepts of graduates' self-reported skill utilisation: (1) whether the graduates used their (a) degree skills and (b) degree knowledge in their main jobs; (2) the extent to which they used specific skills; (3) whether the job required a degree; and (4) the graduates' self-reported job appropriateness (matching). These concepts were derived from the skill utilisation literature and described in detail in Section 3.3.6. Note that all business size groups and occupational groups are used at this stage to enable a systematic analysis of graduates' skill utilisation across the labour market, with a special focus on small businesses and the associate professional occupations. Here, as explained earlier (see Section 3.5.3.4), large businesses and the professional occupations are used as reference groups. Setting large businesses as the reference group shows how micro, small, and medium-sized employers differ, though the main interest is on small businesses. Setting the professional occupations as the reference group shows how other occupational groups differ from that group which has typically employed graduates in 'traditional' graduate jobs, though the main interest is on the *associate* professional occupations.

To recap, measures 1(a), 1(b), and 2 explicitly refer to using degree skills and knowledge, and certain kinds of skills and abilities in graduates' jobs. Although the *Futuretrack* survey did not ask how these skills were used, the interviews asked graduates to give some examples of using skills and knowledge at work (findings reported in Chapter 8). These measures are likely to be the most accurate indicators of skill utilisation of the four measures because they directly focus on skills and knowledge use at work. Measure 3 is a subjective self-reported qualification-matching variable, and does not directly measure skill utilisation. Measure 4 asks about the graduates' subjective assessment of whether their job was appropriate for someone with their level of skills and qualifications, however, this measure does not focus on skills and knowledge, and what graduates consider as appropriate may vary with the graduates' reference groups (e.g. degree subject, aspirations).<sup>124</sup> See Appendix A, Table A.1

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<sup>124</sup> The coefficient of internal consistency (Cronbach alpha) for these 15 items was .86 with an average inter-item covariance of .10. The alpha coefficient shows the inter-item reliability, i.e. the extent to which all the items selected measure the same construct, in this case, skill utilisation (see Tavakol and Dennik, 2011). The value of alpha here suggests these indicators are appropriate for operationalising the concept of skill utilisation.

and Table A.2 for summary statistics of the dependent variables, and Table A.3 for summary statistics of the independent variables (regressors). Note that in contrast to the analysis in Chapter 5 the regressions were not weighted.<sup>125</sup>

## 6.2 Use of degree skills and knowledge

This Section explores whether business size affected the likelihood of graduates reporting that they used their degree skills and degree knowledge in their current main job at the time of the *Futuretrack* survey. The following hypothesis is tested:

**H1. Graduates working in small businesses will report *different* levels of *skill utilisation* as measured by (a) using skills that they developed during their undergraduate degree, and (b) using subject/discipline knowledge that they developed during their undergraduate degree, compared to graduates working in large businesses when controlling for occupation, industry and personal background.**

Graduates were more likely to use their skills than their knowledge: there was a fairly consistent difference of about 14-20 percentage points between the proportion of graduates who used their degree skills and those who used their degree knowledge in their main current job (Figure 6.1). There was relatively little variation between graduates' reports of using skills and knowledge across employer size. Graduates employed in small businesses were slightly more likely to report that they used their skills and their knowledge than those who were employed in large businesses (only significant for degree knowledge),<sup>126</sup> and the absolute difference between the proportions for using skills and knowledge was very small. This result suggests that there may be a positive association between graduates employed in small firms and their perceptions of using degree knowledge in their jobs.

However, the regression results did not find any association when controlling for occupation, industry, and other characteristics (Table 6.1). Although working in a small or a medium-sized

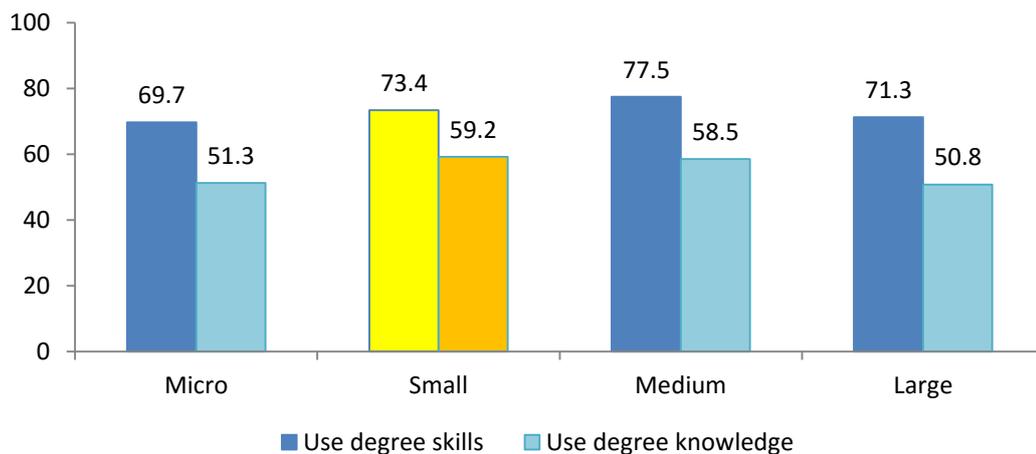
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<sup>125</sup> The decision whether to apply weights in regression analysis is a debated issue. Unweighted regressions were run for two main reasons: first, the *Futuretrack* Stage 4 Report did not weight multivariate regression models. Second, unweighted OLS estimates may be preferred when the weights are a function of the independent variables (Winship and Radbill, 1994), which is the case for the *Futuretrack* survey weights. Regressions using weighted data were run to check robustness of results, but are not reported in this thesis – the results were very similar to unweighted data.

<sup>126</sup> Uncorrected  $\chi^2(3)$ ,  $N=4,260$ ) = 22.60; design-based  $F(3.00, 12761.36)$  = 5.70,  $p < .001$ .

business compared to a large business was significant for using degree knowledge in Model 1 (odds ratios: Small = 1.12; Medium = 1.33),<sup>127</sup> business size ceased being significant as soon as occupational groups were added to the model (Model 2 onwards). This change in employer size coefficient significance suggests that any association between business size and the likelihood of using degree knowledge was mediated through the occupations in which the graduates were working, rather than being attributed to business size directly.

**Figure 6.1: Reported use of degree skills and knowledge in current job by business size**



Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted percentages. N (skills) = 4,259; N (knowledge) = 4,260.

Graduate employment in any occupation relative to professional occupations decreased the likelihood of using skills and knowledge, particularly in sales and customer services and in elementary occupations (0.07 and 0.04 times as likely compared to professional occupations). Graduates employed in the associate professional occupations were less than half as likely to report using their degree skills and knowledge at work as those in the professional occupations (0.45 and 0.44 times as likely for skills and knowledge respectively).

Graduates employed in manufacturing and construction industries were between 1.8 and 2.8 times as likely to use their degree knowledge relative to those employed in the banking,

<sup>127</sup> Where the odds ratio is greater than (less than) one it implies that this variable increases (decreases) the likelihood of the outcome variable occurring. The odds ratios should be interpreted as follows: in Model 1 (controlling for business size only) the likelihood of reporting that one used degree knowledge in one's current main job was 1.12 times more likely if one was employed in a small business relative to a large business, and 1.33 times more likely if one was employed in a medium-sized business relative to a large business, all other things remaining equal.

finance and insurance industry. Unsurprisingly, graduates employed in the distribution, hotels and catering industry were only 0.7 times as likely to do so - this is largely due to selecting the banking, finance and insurance industry group as base.

Interestingly, while graduating from a medium-tariff university relative to a highest-tariff one decreased the likelihood of using degree skills at work, the reverse was true for degree knowledge: graduating from any HEI type other than the highest-tariff type increased the likelihood of reporting using knowledge between 1.3 and 2.4 times. The reason for this may be that graduates from non-highest HEI types were more likely to have studied more vocationally-orientated subjects (with the exception of medicine, which was predominantly found in highest tariff HEIs – but the proportion of graduates in this sample who studied medicine was very low). The STEM subject dummy had no effect on the likelihood of using either degree skills or knowledge; however, there were some differences between subject groups.<sup>128</sup> High self-confidence (added to control for highly confident individuals over-reporting their skill use) was only significant for reporting using degree skills.

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<sup>128</sup> For instance, having studied business and administrative studies subjects relative to natural sciences increased the likelihood of reporting using degree skills; having studied business and administrative studies, mathematics, and engineering relative to natural sciences increased the likelihood of reporting using discipline knowledge, while having studies humanities and languages subjects relative to natural sciences *decreased* the likelihood of reporting using discipline knowledge at work.

**Table 6.1: Likelihood of using degree skills and knowledge (odds ratios)**

	Degree skills		Degree knowledge	
	Model 1	Model 6	Model 1	Model 6
Micro	0.846	0.794	1.039	0.89
<b>Small</b>	<b>0.975</b>	<b>0.801</b>	<b>1.220*</b>	<b>1.048</b>
Medium	1.255	0.996	1.331**	1.099
<b>Large organization (ref.)</b>				
Managers, directors and senior officials		0.305***		0.270***
<b>Professional occupations (ref.)</b>				
Associate professional and technical occupations		0.448***		0.439***
Administrative and secretarial occupations		0.163***		0.155***
Skilled trades occupations		0.126***		0.119***
Caring, leisure and other service occupations		0.135***		0.211***
Sales and customer service occupations		0.0720***		0.0722***
Process, plant and machine operatives		0.109***		0.149***
Elementary occupations		0.0445***		0.0448***
Agriculture, mining, quarrying (includes gas extraction)		1.341		2.723***
Manufacturing		1.927**		1.864***
Electricity, gas, water supply		1.419		1.257
Construction (includes civil engineering)		1.299		2.842***
Distribution, hotels, catering (includes retail)		0.558***		0.693*
Transport and tourist services		1.075		1.364
Information and communications sector		1.096		1.089
<b>Banking, finance, insurance (ref.)</b>				
Business services (includes legal services)		1.062		1.041
Education (includes schools, colleges, etc.)		0.947		1.003
Other public services (local / central gov't)		1.18		1.786**
Female		1.067		0.896
Mature student 21+		0.666**		1.011
Non-white ethnic group		0.916		0.954
Routine and manual occupations		0.955		0.937
<b>Highest tariff (ref.)</b>				
High tariff		0.856		1.346**
Medium tariff		0.771*		1.604***
Lower tariff		0.865		1.501**
Other		0.84		2.423***
STEM subject dummy		1.122		1.089
High self-confidence		1.266**		1.116
Observations	3940	3940	3939	3939
Pseudo R-squared	0.001	0.221	0.002	0.189
Log lik.	-2187.9	-1706.5	-2714.2	-2206.3

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Source: Futuretrack 2006, Wave 4 sample, non-missing observations only, odds ratios (exponentiated coefficients). Base: a male graduate without high self-confidence, who did not study a subject with a STEM component, attended a highest-tariff HEI, and worked as a professional in the banking, finance, and insurance sector in a large business.

To check whether the results for using degree skills and knowledge held for SOC(HE)2010 job groups, the regressions were repeated using the SOC(HE) classification instead of SOC 2010 major groups. The results were similar: business size was not associated with the likelihood of using skills in any of the models. Once the industry sector was controlled for, there were no significant differences between being employed in expert jobs (reference group) and in the orchestrator or communicator jobs. However, for using degree knowledge, business size remained significant when controlling for jobs (Model 2), and only ceased being significant when industry groups were added (Model 3). Graduates employed in orchestrator and communicator jobs were less likely to report using their degree knowledge compared to those in expert jobs, and those in non-graduate occupations were least likely to report using degree knowledge.<sup>129</sup> Ultimately, business size did not affect the likelihood of graduates reporting that they used their degree skills or their degree knowledge when controlling for occupation, industry and personal characteristics.

### 6.3 Use of specific skills

This Section explores the relationship between business size and the graduates' self-reported frequency of being required to use skills at work. As discussed in Section 3.3.6, the *Futuretrack* survey question listed 11 specific skills, and asked the graduates to select the extent to which they were required to use each of those skills and capabilities out of three options: not at all, some of the time, and a lot of the time. The following hypothesis is tested:

**H2. Graduates working in small businesses will report *different* levels of skill utilisation as measured by the frequency of being required to use specific skills at work, compared to graduates working in large businesses when controlling for occupation, industry and personal background.**

This hypothesis is the most complex to test out of the four hypotheses examined in this Chapter. Two main things complicate the issue. First, the 11 skills were correlated with each other, as discussed in Section 2.3.2. Second, perceived requirements to use skills varied with occupations for some skills but not for others.

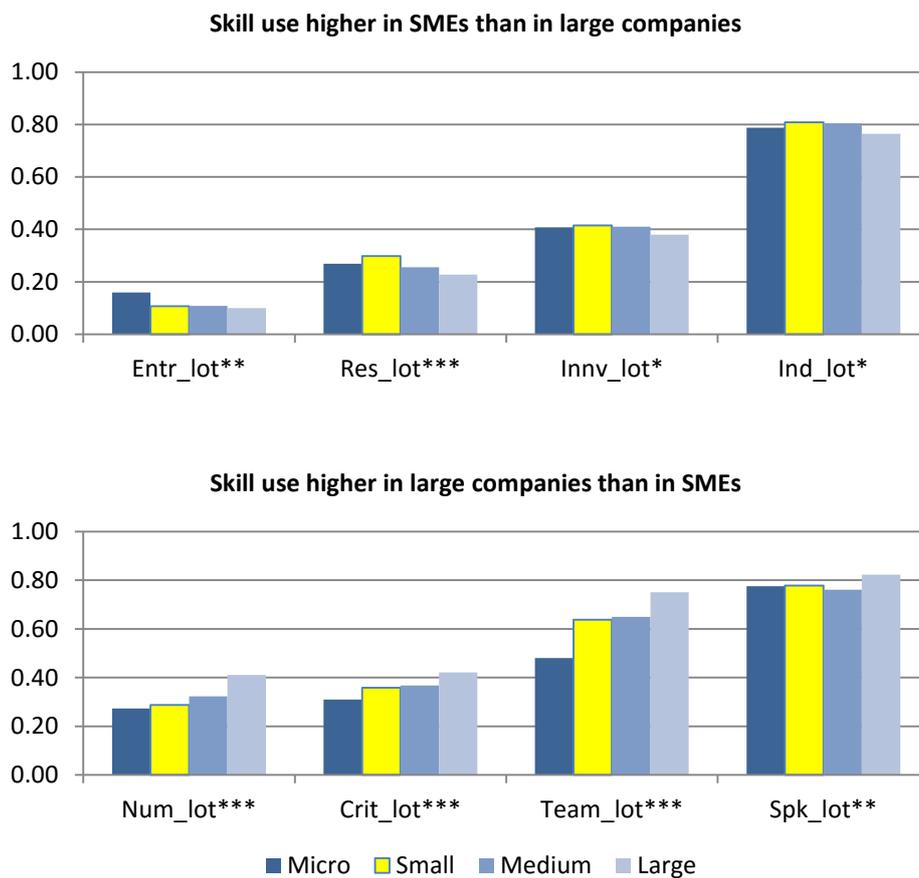
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<sup>129</sup> The pseudo  $R^2$  was lower in the SOC(HE) regressions than in the SOC 2010 major group regressions – this may be because there were fewer regressors in the models (4 SOC(HE) groups compared to 9 major occupational groups) but it may also be because the jobs, particularly non-graduate jobs, were less clearly separated out.

### 6.3.1 Eleven specific skills

When looking at the use of the 11 skills separately, there was some variation across business size for some kinds of skills and less for others. The mean frequencies of skill use scores by business size for the six different skills and capabilities where there was a statistically significant association between the frequency of using that skill and the business size are shown in Figure 6.2. Graduates were more likely to report using spoken communication, numerical analysis skills, critical evaluation, and the ability to work in teams in larger businesses. In contrast, graduates were more likely to report using research skills in small firms, and entrepreneurial skills in micro businesses. There were no statistically significant associations between business size and using other skills and capabilities (see Appendix A Table A.4).

Figure 6.2: Use of specific skills 'a lot' by employer size



Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted proportions of graduates using skills 'a lot'. Statistical association between skill use and business size, \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , design-based F statistic.

The extent to which these skills were used 'a lot' also varied with occupation, but this affected some skills much more than others. In general, the graduate (expert, orchestrator and communicator) occupations had higher proportions of respondents who reported using skills 'a lot' of the time compared to those in non-graduate occupations. However, spoken communication, ability to work in teams, working independently, and time management did not vary much across SOC(HE) 2010 occupations (see Table 6.2). This finding also held for major occupational SOC(2010) groups. From Table 6.2, it is possible to view written communication, numeracy, critical evaluation, research, and presentation skills as those that vary with occupations. In particular they were much more likely to be used 'a lot' in all three SOC(HE) 2010 graduate jobs and in SOC(2010) major groups 1-4 than in non-graduate jobs or in SOC(2010) major groups 6, 7 and 9.

**Table 6.2: Extent of using skills 'a lot' by occupation**

(a) SOC(HE) 2010	Writ	Spk	Num	Crit	Res	Pres	Innv	Entr	Team	Ind	Time	Row Sum
Expert	0.7	0.8	0.5	0.6	0.4	0.3	0.5	0.1	0.7	0.8	0.9	6.2
Orchestrator	0.7	0.9	0.5	0.6	0.3	0.4	0.6	0.2	0.8	0.8	0.9	6.7
Communicator	0.8	0.8	0.3	0.5	0.4	0.4	0.6	0.2	0.7	0.9	0.9	6.5
Non-graduate	0.4	0.8	0.3	0.2	0.1	0.1	0.2	0.1	0.7	0.7	0.7	4.4

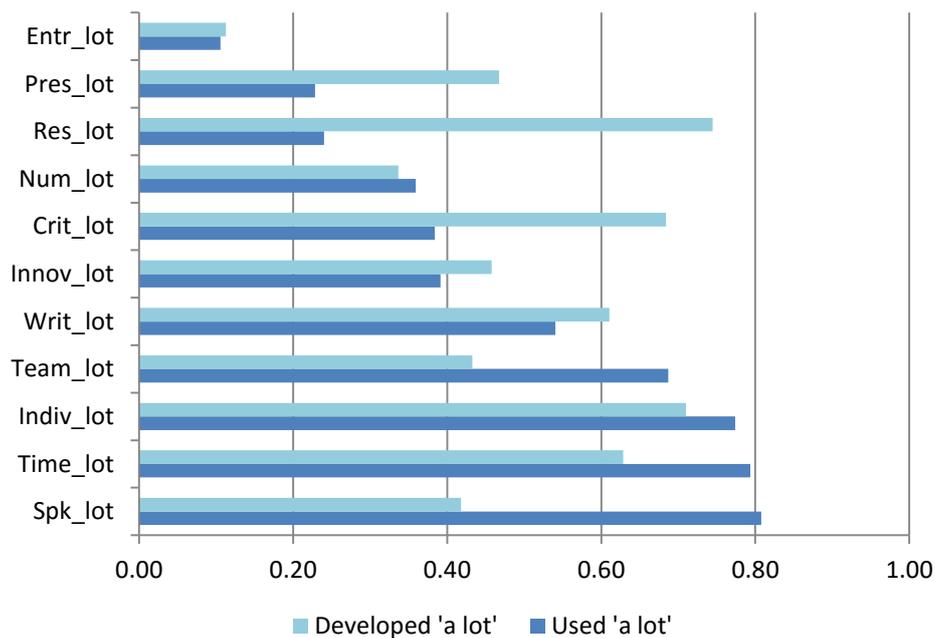
(b) SOC (2010)	Writ	Spk	Num	Crit	Res	Pres	Innv	Entr	Team	Ind	Time	Row Sum
1	0.6	1.0	0.4	0.4	0.2	0.3	0.5	0.2	0.8	0.8	0.9	6.0
2	0.7	0.8	0.5	0.6	0.4	0.3	0.6	0.1	0.7	0.8	0.9	6.3
3	0.7	0.8	0.4	0.5	0.3	0.3	0.5	0.2	0.7	0.8	0.9	6.2
4	0.6	0.8	0.5	0.3	0.2	0.1	0.2	0.1	0.6	0.8	0.8	4.9
6	0.3	0.9	0.2	0.2	0.0	0.1	0.3	0.0	0.7	0.7	0.7	4.3
7	0.2	0.9	0.3	0.1	0.1	0.1	0.2	0.1	0.7	0.6	0.6	3.9
9	0.1	0.7	0.1	0.1	0.0	0.0	0.1	0.0	0.7	0.5	0.5	3.0

Notes: 1 - Managers, directors and senior officials; 2 - Professional occupations; 3 - Associate professional and technical occupations; 4 - Administrative and secretarial occupations; 6 - Caring, leisure and other service occupations; 7 - Sales and customer service occupations; 9 - Elementary occupations. Skilled trades occupations and Process, plant and machine operatives not shown because of low observations.

Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed. Weighted proportions of graduates using skills 'a lot'.

At the overall level (not disaggregated by subject groups or occupations), the correspondence between the skills developed on the undergraduate course and the skills used in one's job was relatively - and in some cases extremely - low, as Figure 6.3 shows clearly. Figure 6.3 can be compared to *Seven Years On* study findings, which compared the skills that graduates developed 'a lot' on their 1995 degree and that were required in their jobs seven years after graduation (Purcell et al., 2004, pp. 14-15). The graduates were most likely to use spoken communication, problem solving, team work, and leadership skills 'a lot,' but were far less likely to develop these skills 'a lot' on their course. Purcell et al. (2004) suggested that the graduates were more likely to use problem-solving and leadership skills as they progressed through their careers. The *Futuretrack* sample graduates were at an earlier stage in their careers than the *Seven Years On* graduates, which may explain why the *Futuretrack* graduates were less likely to use research skills and critical analysis 'a lot' (typically associated with problem-solving skills) than 1995 graduates.

Figure 6.3: Skills developed on the undergraduate course and used at work 'a lot'



Source: *Futuretrack Stage 4 survey*, proportion of graduates who developed the skills 'a lot' on their undergraduate courses and were required to use the skills 'a lot' in their current job. Sorted in ascending order of using the skills 'a lot'.

Business size was significant in some cases, even when controlling for occupation, industry and personal characteristics (Table 6.3). Graduates employed in small businesses were 1.35

times more likely to report using research skills 'a lot' of the time, and graduates employed in micro businesses were twice more likely to report using entrepreneurial skills 'a lot' of the time compared to graduates employed in large businesses. However, for other skills – written and spoken communication, numerical analysis, critical evaluation, presentation, team work and time management skills – working in smaller businesses diminished the likelihood of graduates reporting that they used these skills 'a lot' of the time. Innovative thinking skills and the ability to work individually were not associated with employer size. These results were supported when an ordered logit was carried out on the three-level ('not at all,' 'some' and 'a lot' of the time) skill use variables (see Appendix A Table A.5).

With 11 regressions and 35 regressors discussing the findings is very complicated, so only a few key observations are made here. In general, the results are similar to those reported in Section 6.2 for using degree skills and knowledge. Employment in occupations other than the professional occupations decreased the likelihood of using the 11 skills 'a lot,' with the exception of employment in the managerial occupations, which increased the likelihood of using spoken communication, entrepreneurial, and team working skills. The likelihood of using skills was lowest in the sales and customer services and elementary occupations.

Industry groups had different effects depending on the skills. For example, as expected, working in any industry relative to banking, finance and insurance decreased the likelihood of using numerical skills 'a lot' of the time, while the industry sector was not significant for entrepreneurial skills. Employment in the distribution, hotels and catering sector diminished the likelihood of using certain skills as may be expected, but was not significant for spoken communication, presentation, innovative thinking, team work and entrepreneurial skills. However, this finding highlights that without explicit reference to developing these skills in an HE context, skills such as 'spoken communication' include a wide range of abilities, ranging from high-level spoken communication including negotiation and persuasion, to more routine-level communication, such as adherence to scripts in call centre work (Taylor et al., 2002).

Female graduates were more likely than male graduates to report using written and spoken communication, working in teams and individually, and time management skills, but less likely to report using numeracy, critical evaluation, innovative thinking and entrepreneurial

skills. The odds ratio for high self-confidence was positive and significant, which shows that confident graduates were more likely to report using skills 'a lot' than less confident graduates even when controlling for occupation, industry, and personal characteristics.

Table 6.3: Likelihood of reporting being required to use 11 specific skills 'a lot' of the time (odds ratios)

	Writ	Spk	Num	Crit	Res	Pres	Innv	Entr	Team	Ind	Time
Micro	0.72*	0.80	0.74*	0.64**	1.31	0.78	1.10	1.99***	0.29***	1.14	0.57***
Small	0.90	0.81	0.64***	0.72**	1.35**	0.87	1.09	1.03	0.55***	1.15	0.75*
Medium	0.78*	0.71**	0.76*	0.73**	1.05	0.76*	1.05	1.20	0.62***	1.06	0.69**
Large organization (ref.)											
Managers, directors and senior officials	0.69*	4.78***	0.78	0.54**	0.44***	0.98	0.92	2.15***	1.66*	0.7	0.83
Professional occupations (ref.)											
Associate professional and technical occupations	1.22	1.16	0.76**	0.68***	0.71***	1.11	0.77**	1.35*	0.92	1.01	.
Administrative and secretarial occupations	0.72**	0.69**	0.97	0.37***	0.27***	0.33***	0.25***	0.52**	0.56***	0.70*	0.54***
Skilled trades occupations	0.42**	0.59	0.51	0.30***	0.23**	0.37*	0.47*	1.02	1.12	0.61	2.63
Caring, leisure and other service occupations	0.27***	1.24	0.46**	0.27***	0.11***	0.41**	0.36***	0.41	1.46	0.48**	0.37***
Sales and customer service occupations	0.22***	1.39	0.42***	0.19***	0.12***	0.28***	0.20***	0.54*	0.66**	0.47***	0.22***
Process, plant and machine operatives	0.13**	0.32*	0.13**	0.16**	.	.	0.14**	.	0.26**	0.29**	0.30*
Elementary occupations	0.08***	0.67	0.15***	0.08***	0.07***	0.11***	0.10***	0.34**	1.06	0.29***	0.17***
Agriculture, mining, quarrying (includes gas extraction)	0.88	0.79	0.58*	0.99	0.88	1.08	0.84	1.73	0.62*	1.96*	0.87
Manufacturing	0.86	0.76	0.51***	0.78	0.97	1.08	1.22	1.05	0.67**	1.3	0.78
Electricity, gas, water supply	1.15	0.73	0.62*	0.72	0.72	0.93	0.82	0.62	0.82	0.93	0.64
Construction (includes civil engineering)	1.42	0.96	0.66*	0.84	0.79	1.41	1.09	0.86	1.2	0.9	1.18
Distribution, hotels, catering (includes retail)	0.36***	1.06	0.44***	0.50***	0.54***	0.95	1.03	1.38	0.95	0.66**	0.54***
Transport and tourist services	0.90	2.10*	0.42***	0.54**	0.58*	1.16	1.43	1.57	0.65*	1.72*	0.94
Information and communications sector	1.14	0.59**	0.24***	0.75*	1.16	0.76	1.56**	0.91	0.97	1.34	1.02
Banking, finance, insurance (ref.)											
Business services (includes legal services)	1.55**	0.89	0.40***	0.97	1.60***	1.25	1.37*	1.24	0.71*	1.18	1.21
Education (includes schools, colleges, etc.)	0.68*	1.62	0.15***	0.41***	0.49***	2.68***	1.44*	0.59	0.41***	1.15	1.60
Other public services (local or central government)	0.72	1.47	0.23***	0.52***	0.59*	0.55*	0.93	0.59	0.83	0.99	0.73

Chapter 6 – Graduates' skill utilisation and employer size

Female - dummy	1.45***	1.40***	0.67***	0.66***	1.05	0.95	0.73***	0.79*	1.28**	1.35***	1.78***
Mature student - 21+	0.94	0.88	0.88	1.12	1.07	1.02	0.86	0.96	0.77*	1.06	1.16
Dummy for ethnicity	0.9	0.95	0.98	.	1.05	1.12	1.05	1.23	0.95	1.03	0.78
Routine and manual occupations	0.88	0.96	1.06	0.94	1.03	0.83	0.97	1.04	0.88	0.84	0.79*
Highest tariff (ref.)											
High tariff	0.98	1.14	0.88	0.86	0.87	0.96	0.91	1.05	1.06	1.18	1.05
Medium tariff	.	1.35*	0.99	0.82*	0.86	0.94	1.15	0.94	1.10	1.27*	1.33*
Lower tariff	0.94	1.31	1.10	0.78	1.11	.	1.22	0.90	1.25	0.96	1.34
Other	1.07	1.21	0.86	0.89	1.32	1.60*	1.22	1.02	1.14	0.88	1.12
STEM subject dummy	0.65***	0.76**	1.25**	1.11	0.66***	0.58***	0.94	0.67**	1.17*	.	0.91
High self-confidence	1.27**	1.52***	1.25**	1.56***	1.25**	1.79***	1.55***	1.92***	1.36***	1.33***	1.43***
Observations	3935	3933	3932	3934	3915	3912	3934	3912	3935	3934	3936
Pseudo R-squared	0.159	0.052	0.099	0.135	0.127	0.096	0.109	0.066	0.051	0.057	0.113
Log lik.	-2262.2	-1826.7	-2352.3	-2294.7	-1929.8	-1948.7	-2361.1	-1240	-2267.4	-1942.5	-1667

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Source: Futuretrack 2006, Wave 4 sample, non-missing observations only, odds ratios (exponentiated coefficients).

Base: a male graduate without high self-confidence, who did not study a subject with a STEM component, attended a highest-tariff HEI, and worked as a professional in the banking, finance, and insurance sector in a large business.

As discussed earlier in this chapter, the correlation between these 11 skills and the patterns of skill use in the labour market suggested that there may be unobservable concepts (for example, 'generic' and 'academic' skills (Hogarth et al., 2007)) underlying these skills. Exploratory factor analysis (EFA) was conducted to identify the underlying skill constructs to account for the relationships between the skills (Kim and Mueller, 1978 in: Pett et al., 2003; see Section 3.5.3.3 for methodology). The results from preliminary investigations (not shown) suggested that there may be two or four factors underlying the 11 skills.<sup>130</sup> Both sets of results are presented to compare the findings.<sup>131</sup>

### 6.3.2 Specific skills – two factors

The results for the factor loadings for two retained factors are shown in Table 6.4.<sup>132</sup> All variables except for numerical skills loaded onto the two factors with a loading of at least .4. Uniqueness scores were high for numerical analysis skills, entrepreneurial skills and the ability to work individually so these loadings should be interpreted with caution.<sup>133</sup> The two factors were correlated with each other (a direct consequence of using promax rotation) with a correlation coefficient of .61.

The variables with the strongest association with Factor 1 were research, critical evaluation and innovative thinking skills (loading >.7). Research and critical evaluation skills have been classed as 'problem-solving attributes' in the literature (Nabi and Bagley, 1999), 'cognitive skills' (Arnold, 1994); and 'academic skills' (Nabi, 2003; Chevalier and Lindley, 2009). Innovative thinking, however, was usually classed differently: as a 'key work-related skill' (Westhead and Matlay, 2006), 'dynamism' (Arnold, 1994), or a 'personal attribute' (Nabi

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<sup>130</sup> As discussed in Section 3.5.3.3, prior to analysis the 11 skills (taking all 3 values – 'a lot,' 'some,' and 'not at all') were standardized and a correlation matrix was constructed. This correlation matrix was then analysed using iterated principal factor analysis with two and then with four factors.

<sup>131</sup> Fabrigar et al. (1999) cautioned that there were problems with retaining too few and too many factors. In the former case, variables can incorrectly load onto one factor when they would have loaded onto a factor not specified in the model, and factor loadings can be poorly estimated. In the latter case, having too many factors can lead to development of constructs with low theoretical value and empirical support.

<sup>132</sup> See Appendix A: Additional tables for supporting information (correlation matrix, scree plot, loadings plot, etc.).

<sup>133</sup> Excluding numerical analysis from the EFA did not diminish the uniqueness scores either for entrepreneurial skills or for working independently.

and Bagley, 1999).<sup>134</sup> Factor 1 could therefore be described as 'creative problem solving skills,' which incorporates the concepts of research, critical evaluation, presentation, and innovative thinking.<sup>135</sup>

In contrast, the ability to work in teams and spoken communication were the variables with the highest loading on Factor 2. Communication skills have been (predictably) classed as 'communication' (Arnold, 1994; Westhead and Matlay, 2006), 'key or core skill' (Nabi and Bagley, 1999; Nabi, 2003). Team work has been classed under 'mobilising others' (Salas Velasco, 2010), 'personal attribute/self-reliant skill' (Nabi and Bagley, 1999; Westhead and Matlay, 2006), or 'key/core skill' (Nabi, 2003). Factor 2 could thus be summarised as a 'personal attributes,' 'core skills' or a 'practical approach to work': 'core skills' was selected to emphasise the skills focus of the construct.

Factor 1 tended to vary with the type of job (using the SOC major group) to a greater extent than Factor 2, which suggests that the skills associated with Factor 1 are used 'a lot' much less frequently further down the SOC hierarchy compared to the skills associated with Factor 2. This finding lends further support to the names allocated to the factors, as one would expect creative problem-solving skills to diminish further down the SOC index, while core skills would be less affected moving down the SOC index.

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<sup>134</sup> As will be discussed in Section 8.3.2, interviewed graduates tended to view innovative thinking skills as related to problem-solving and research, which lends some support to grouping these skills in one factor. These skills also grouped together in the four factor case (see Section 6.3.3).

<sup>135</sup> This group of skills is also similar to OECD's Survey of Adult Skills (PIAAC) 'information-processing skills' which included "reading, writing, numeracy, ICT skills and problem solving" (OECD, 2013, p. 143).

**Table 6.4: Rotated factor loadings and unique variances (IPF(2) FA promax rotation)**

Variable	Factor 1	Factor 2	Uniqueness
Written communication (z_Writ)	.54		.47
Critical evaluation (z_Crit)	.79		.36
Research skills (z_Res)	.95		.28
Presentation skills (z_Pres)	.65		.48
Innovative thinking (z_Innv)	.70		.40
Entrepreneurial skills (z_Entr)	.48		<b>.68</b>
Numerical analysis skills (z_Num)			<b>.76</b>
Spoken communication (z_Spk)		.72	.57
Ability to work in teams (z_Team)		.74	.57
Ability to work individually (z_Ind)		.44	<b>.64</b>
Ability to manage my time effectively (z_Time)		.61	.33
<b>Factor name</b>	<b>'Creative problem solving'</b>	<b>Core skills</b>	
<b>Alpha</b>	<b>.81</b>	<b>.61</b>	
<b>Correlation among factors:</b>			
	<b>Factor 1</b>	.	
	<b>Factor 2</b>	<b>.61</b>	.

Source: Futuretrack 2006, Wave 4. N = 4,537. Iterated principal factor analysis, two retained factors, promax rotation, loadings above .4 only. Numerical analysis loaded on Factor 1 with a low loading score (.34) and is not shown in this table. Note that the alpha for Factor 2 is below the generally acceptable range of .7-.9 (Tavakol and Dennick, 2011).

Factor scores were predicted from the above factor analysis (zf1 and zf2). To facilitate interpretation, the factor scores were rescaled into indices with mean 100 and standard deviation 10 (Table 6.5).<sup>136</sup> Comparing mean index scores by business size shows that the creative problem solving factor was perceived to be slightly more frequently required in small and medium-sized businesses, while the core skills factor scores tended to increase with business size (Figure 6.4). The main driver behind this core skills trend appears to be the ability to work in teams (see Figure 6.2 – perception of being required to use the ability to work in teams 'a lot' varied most by business size).

Regressions were run on both factors to see whether business size affected skill utilisation. Note that the indices constructed from the factor scores are continuous variables, and so an OLS regression specification was used (the regressors remained the same). The results indicated that business size was not significant for using skills associated with the creative problem solving factor, however working in a micro, small or medium-sized business

<sup>136</sup> This method is used to facilitate comparisons between index scores. For example, OECD (2013, p. 144) standardised skill-use indicators to have mean=2 and sd=1, while StataCorp (2013) factor post-estimation documentation suggested mean=100 and sd=10. Thus, creative problem solving index =  $(zf1/sd(zf1))*10+100$ ; core skills index =  $(zf2/ sd(zf2))*10+100$ .

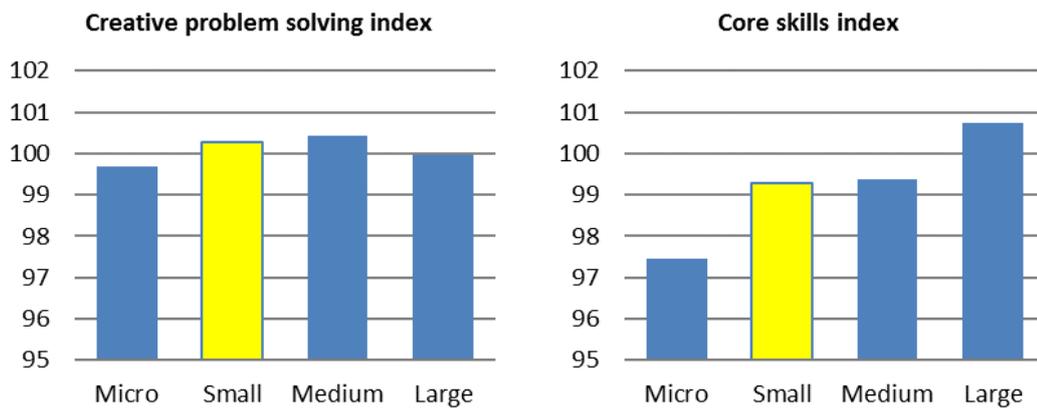
compared to a large business decreased the core skills index score ( $b_{\text{Micro}}=-3.23$ ,  $b_{\text{Small}}=-1.93$  and  $b_{\text{Medium}}=-1.97$ ) (Table 6.6).<sup>137</sup> These effects remained significant even when controlling for occupation, industry and personal characteristics.

**Table 6.5: Summary statistics for raw and rescaled factor scores, two factors**

Variable	Obs.	Mean	Std. Dev.	Min	Max
zf1	4537	0.00	.87	-2.07	1.51
zf2	4537	0.00	.81	-3.94	1.09
<b>Creative problem solving index</b>	4537	100	10	76.18	117.42
<b>Core skills index</b>	4537	100	10	51.07	113.55

*Futuretrack 2006, Wave 4. Factor analysis of the use of eleven skills at graduates' main place of work, two retained factors.*

**Figure 6.4: Mean factor index scores by business size – two factors**



*Futuretrack 2006, Wave 4. Mean factor scores and business size. Factor analysis of the use of eleven skills at graduates' main place of work.*

<sup>137</sup> The OLS regression coefficients (betas) should be interpreted as follows: for core skills, being employed in a micro business relative to a large business decreases the index scores 3.23 units (all other things being equal, the mean score would be 96.77 instead of 100).

**Table 6.6: Business size effects on factor scores, two factors (OLS coefficients)**

Variables	Creative problem solving	Core skills
Micro	-0.07	-3.23***
Small	-0.18	-1.93***
Medium	-0.49	-1.97***
Large organization (ref.)		
Managers, directors and senior officials	-2.45***	1.70*
Professional occupations (ref.)		
Associate professional and technical occupations	-1.53***	-0.14
Administrative and secretarial occupations	-7.09***	-2.94***
Skilled trades occupations	-6.97***	-0.81
Caring, leisure and other service occupations	-9.48***	-3.15**
Sales and customer service occupations	-11.36***	-5.98***
Process, plant and machine operatives	-14.96***	-11.54***
Elementary occupations	-15.55***	-8.45***
Agriculture, mining, quarrying (includes gas extraction)	-0.77	-0.91
Manufacturing	-0.61	-1.22
Electricity, gas, water supply	-1.22	-1.45
Construction (includes civil engineering)	-0.05	0.53
Distribution, hotels, catering (includes retail)	-3.19***	-1.92**
Transport and tourist services	-0.45	0.11
Information and communications sector	-0.36	-0.84
Banking, finance, insurance (ref.)		
Business services (includes legal services)	1.30**	-0.38
Education (includes schools, colleges, etc.)	-1.84**	-0.73
Other public services (local or central government)	-2.65***	-0.99
Female - dummy	-0.33	1.59***
Mature student 21+	-0.24	-0.57
Dummy for ethnicity	-0.23	-0.83
Routine and manual occupations	-0.53	-0.79*
Highest tariff (ref.)		
High tariff	-0.6	0.31
Medium tariff	-0.21	0.89*
Lower tariff	0.37	1.09
Other	1.1	0.17
STEM subject dummy	-1.18***	-0.43
High self-confidence	2.00***	1.98***
Constant	105.52***	102.03***
Observations	3916	3916
R-squared	0.348	0.121
Adjusted R-squared	0.343	0.114

Source: Futuretrack 2006, Wave 4. N = 3,916. Regression results for the effects of business size on rescaled factor scores of the frequency of using certain skills at work, non-missing observations only.

### 6.3.3 Specific skills – four factors

Further analysis found that the smallest number of retained factors at which uniqueness decreased to 0.6 or below for all variables was four. When four factors were retained and iterated principal factor analysis was run, a promax rotation yielded the factor loadings below (Table 6.7). All skill variables loaded onto the four factors with a loading of at least .4 except written communication. Looking at the variables with the highest loadings on each of the factors, and with reference to the factor name discussion in Section 6.3.2, the following four factor names were used: 'creative thinking,' 'mobilising own capacities,' 'critical analysis' and 'mobilising others' (mobilising own capacities and mobilising others were chosen following Salas Velasco's (2010) similar classification of skills).<sup>138</sup>

Following the method Section 6.3.2, factor scores for the retained four factors were predicted (za1-za4, see Table 6.8). These factor scores were converted to indices with mean 100 and standard deviation 10 as before ( $(\text{factor score}/\text{sd}) * 10 + 100$ ) (Table 6.8). The index scores were plotted against businesses by size (Figure 4.15). There was some slight variation between the index scores and business size for each of the four factors. Scores for 'creative thinking' were higher for graduates employed in smaller businesses than those in large businesses, whereas scores for 'critical analysis' and 'mobilising others' were lower for graduates employed in smaller businesses. Scores for 'mobilising own capacities' were similar for graduates working in small, medium and large businesses, but were smaller for graduates employed in micro businesses.

Compared to using two factors in Section 6.3.2, using four factors resulted in more accurate groupings of skills, but the alphas for mobilising own capacities,' 'critical analysis' and 'mobilising others were relatively low (.50 - .66). This suggests that the 4-factor analysis shows a similar pattern to the 2-factor analysis. However, by letting the skill variables that loaded onto the 'creative problem solving' factor to load onto two factors, a relationship was found between 'critical analysis' (numerical and critical evaluation skills) which was

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<sup>138</sup> Note that the variables loading onto 'mobilising own capacities' and 'mobilising others' previously loaded onto 'core skills,' and 'creative thinking' and 'critical analysis' previously loaded onto 'creative problem solving' in the two-factor case.

obscured in the two-factor case. Moreover, retaining four factors was better supported by parallel analysis.<sup>139</sup>

**Table 6.7: Rotated factor loadings and unique variances (IPF(4) FA promax rotation)**

Variable	Factor1	Factor2	Factor3	Factor4	Uniqueness
Research skills (z_Res)	.52				.31
Presentation skills (z_Pres)	.74				.36
Innovative thinking (z_Innv)	.64				.35
Entrepreneurial skills (z_Entr)	.64				.54
Ability to work individually (z_Ind)		.71			.50
Ability to manage my time effectively (z_Time)		.96			.04
Written communication (z_Writ) <sup>†</sup>					.47
Numerical analysis skills (z_Num)			.63		.60
Critical evaluation (z_Crit)			.89		.12
Spoken communication (z_Spk)				.74	.39
Ability to work in teams (z_Team)				.55	.57
<b>Factor name</b>	<b>Creative thinking</b>	<b>Mobilising own capacities</b>	<b>Critical analyses</b>	<b>Mobilising others</b>	
<b>Alpha</b>	.76	.66	.62	.50	
<b>Correlation among factors:</b>					
<b>Factor 1</b>	.				
<b>Factor 2</b>	.55	.			
<b>Factor 3</b>	.60	.59	.		
<b>Factor 4</b>	.33	.43	.36	.	

<sup>†</sup> Written communication had a low loading score (.36) on Factor 2 and is not displayed in the table. (Factor 2 alpha including written communication = .68).  
 Source: Futuretrack 2006, Wave 4. N = 4,537. Iterated principal factor analysis, four retained factors retained, promax rotation, loadings above .4 only. Note that the alphas for Factors 2, 3 and 4 are below the generally acceptable range of .7-.9 (Tavakol and Dennick, 2011). This could be due to a low number of items in the factors, or more likely an indication of weak factors (the alpha for the second factor in the two-factor case was also below .7).

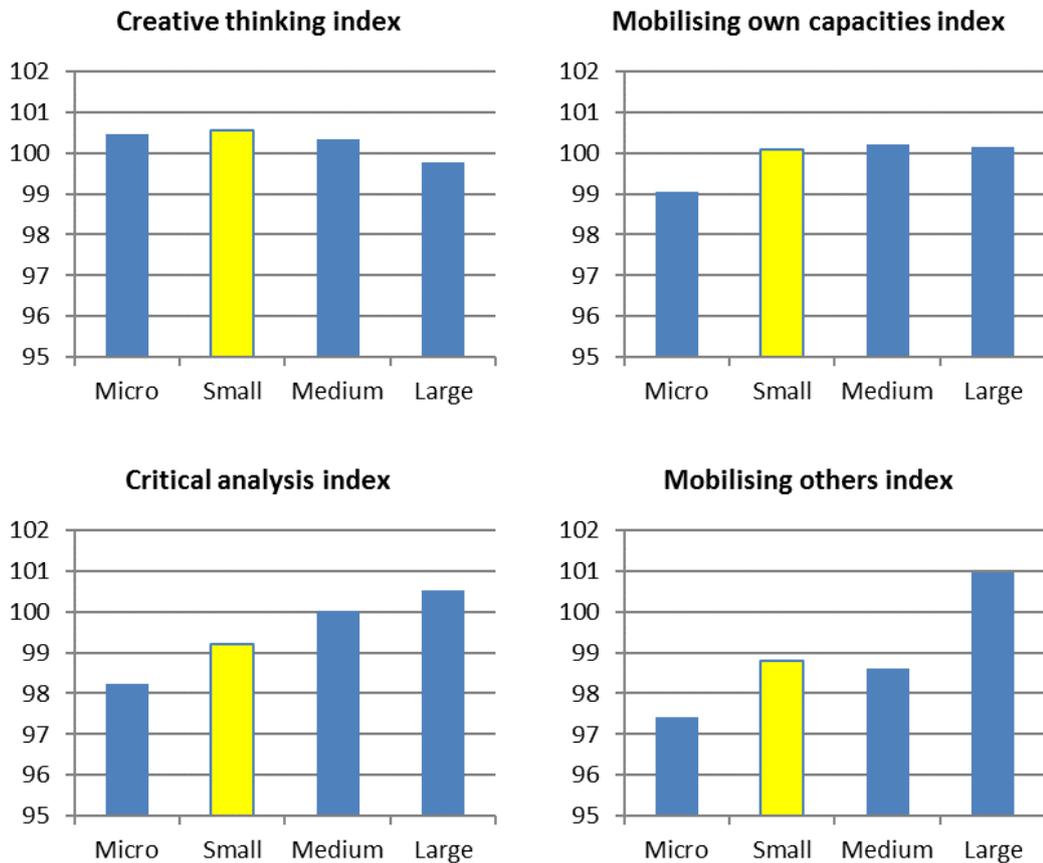
<sup>139</sup> Parallel analysis (PA) (Horn, 1965) is a method based on Monte Carlo simulation (generation of random variables), used to check how many factors to retain. PA assumes that components generated from an empirical dataset which has a valid underlying structure should yield larger eigenvalues compared to parallel components generated from random data with the same number of variables and sample size (Hayton et al., 2004). PA has been recommended as a more robust alternative to the scree plot and the Kaiser criterion (Ledesma and Valero-Mora, 2007). Scree plots can be unreliable when the factor structure is weak (Hayton et al., 2004) – this is likely to be the case in this dataset, as the internal consistencies (alphas) of all but the first factor are fairly low, in both the two- and the four-factor case.

**Table 6.8: Summary statistics for raw and rescaled factor scores, four factors**

Variable	Obs.	Mean	Std. Dev.	Min	Max
za1	4537	0.00	.85	-1.69	1.83
za2	4537	0.00	.96	-3.73	0.78
za3	4537	0.00	.91	-1.88	1.36
za4	4537	0.00	.79	-3.67	1.24
<b>Creative thinking index</b>	4537	100	10	80.1	121.4
<b>Mobilising own capacities index</b>	4537	100	10	61.3	108.1
<b>Critical analysis index</b>	4537	100	10	79.5	114.8
<b>Mobilising others index</b>	4537	100	10	53.5	115.8

*Futuretrack 2006, Wave 4. Factor analysis of the use of eleven skills at graduates' main place of work, four retained factors.*

**Figure 6.5: Mean rescaled factor scores (indices) by business size – four factors.**



*Futuretrack 2006, Wave 4. Mean factor scores and business size. Factor analysis of the use of eleven skills at graduates' main place of work.*

The regression results (Table 6.9) showed that business size was significant and inversely related with the frequency of using skills associated with mobilising own capacities, critical

analysis and mobilising others factors when controlling for occupation, industry and personal characteristics. These are consistent with Salas Velasco's (2010) regression results for mobilising own capacities and mobilising others: working in a large firm increased the likelihood of using both of these capacities compared to working in a firm with fewer than 50 employees.

However, business size was not significantly associated with the creative thinking factor. This could be because of the different relationships between the skills variables loading onto the factor (research, critical evaluation, innovative thinking and entrepreneurial skills) and business size. Compared to the individual 11 skill regressions in Section 6.3.1 (see Figure 6.2 and Table 6.3), it can be seen that while the likelihood of being required to use research skills and entrepreneurial skills 'a lot' was positively associated with smaller businesses, for presentation skills employment in micro and small businesses was not significant, but working medium-sized companies decreased the likelihood. For innovative thinking skills there was no significant relationship by business size. Therefore, aggregating these different skills into one factor could obscure the relationship between perceived requirements to use *individual* skills and business size.

The results for all three sets of regression (11 skills, 2 factors, 4 factors) should be interpreted carefully. For instance, the models explain very little variation in the likelihood of using spoken communication, and ability to work in teams and individually (pseudo  $R^2=.05$ , see Table 6.3)<sup>140</sup>, and in the mobilising others factor (adjusted  $R^2=.05$ , see Table 6.9).

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<sup>140</sup> The pseudo  $R^2$  (McFadden's) is an indicator of model fit for logistic regressions, and can be considered as analogous to the OLS  $R^2$ . However, it does not measure the proportion of the variation in the dependent variable explained by the model. Instead it is defined as  $1 - \text{ratio of the log likelihood with intercepts only (no predictors) / log likelihood with all predictors}$ . A model with poor predictors will have a pseudo  $R^2$  close to 0.

**Table 6.9: Business size effects on skill factor scores, four factors (OLS coefficients)**

Index scores (mean = 100, sd = 10)	Creative thinking	Mobilising own capacities	Critical analysis	Mobilising others
Micro	0.79	-1.61**	-1.60**	-2.98***
Small	0.28	-1.00*	-1.33***	-1.98***
Medium	-0.27	-1.07*	-0.94*	-2.09***
Large organization (ref.)				
Managers, directors, senior officials	-1.02	-0.66	-2.32**	4.10***
Professional occupations (ref.)				
Associate professional & technical	-0.89*	-0.43	-1.85***	0.33
Administrative & secretarial	-7.61***	-2.31***	-5.30***	-1.55**
Skilled trades occupations	-6.74***	1.3	-6.21***	-0.59
Caring, leisure and other service occupations	-8.58***	-4.52***	-7.52***	0.34
Sales and customer service occupations	-9.88***	-7.41***	-9.29***	-1
Process, plant and machine operatives	-14.82***	-7.87***	-10.50***	-9.28***
Elementary occupations	-13.50***	-10.06***	-12.93***	-2.42**
Agriculture, mining, quarrying				
Manufacturing	-0.7	-0.13	-0.75	-1.4
Electricity, gas, water supply	0.28	-0.86	-1.73**	-1.47*
Construction (inc. civil engineering)	-1.03	-1.24	-1.3	-1.47
Distribution, hotels, catering (includes retail)	0.61	0.03	-0.88	0.21
Transport and tourist services	-1.23*	-2.73***	-4.30***	-0.08
Information and communications	1.3	-0.35	-2.75***	0.62
Banking, finance, insurance (ref.)	0.36	0.42	-2.30***	-2.55***
Business services (inc. legal services)				
Education (inc. schools, colleges, etc.)	2.02***	0.66	-0.59	-1.54**
Other public services	0.94	0.56	-5.42***	-0.82
Female - dummy	-1.4	-0.93	-4.03***	-0.29
Mature student - 21+	-0.26	1.87***	-1.37***	1.02**
Dummy for ethnicity	-0.49	0.45	0.03	-1.05
Routine and manual occupations	-0.01	-0.96*	-0.09	-0.52
Highest tariff (ref.)	-0.80*	-0.66	-0.05	-0.48
High tariff	-0.41	-0.02	-0.92**	0.53
Medium tariff	-0.24	0.88*	-0.76*	0.93*
Lower tariff	0.16	1.11	-0.24	1.01
Other	1.54*	-0.06	-0.08	0.15
STEM subject dummy	-1.79***	-0.42	0.11	-0.3
High self-confidence	2.26***	1.05***	1.86***	1.91***
Constant	103.82***	101.96***	106.79** *	100.63***
Observations	3916	3916	3916	3916
R-squared	0.279	0.158	0.272	0.059
Adjusted R-squared	0.273	0.151	0.267	0.052

Source: Futuretrack 2006, Wave 4. N = 3,916. Regression results for the effects of business size on rescaled factor scores of the frequency of using certain skills at work, non-missing observations only.

## 6.4 Degree requirement and high job appropriateness

This Section explores whether business size affected the likelihood of graduates reporting that they needed a degree for their jobs and whether business size affected the likelihood of graduates reporting that their job was very appropriate for someone with their skills and qualifications. The following hypotheses are tested:

**H3. Graduates working in small businesses reported *different* levels of *skill utilisation*, as measured by whether the job required a degree (qualification match), compared to graduates working in large businesses when controlling for occupation, industry and personal background.**

**H4. Graduates working in small businesses will report *different* levels of *skill utilisation*, as measured by self-reported job appropriateness, compared to graduates working in large businesses when controlling for occupation, industry and personal background.**

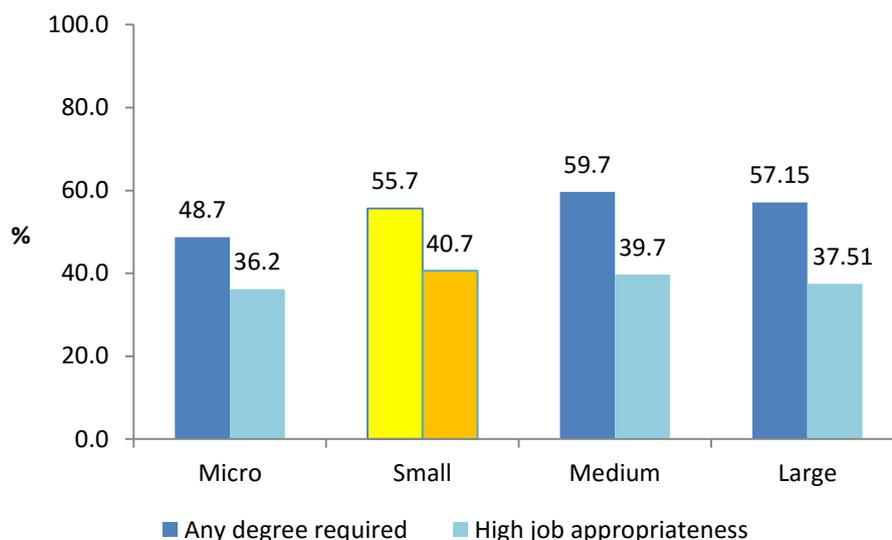
The proportions of graduates who reported that any degree was required and that their job was very appropriate are shown in Figure 6.6. Business size was negatively associated with whether the job required a degree.<sup>141</sup> This is most likely due to graduates employed in micro businesses being less likely to report that any degree was required for their job. However, there was no significant association between business size and the graduate agreeing (scoring 6 or 7 out of 7) that their job was very appropriate for someone with their level of skills and qualifications.<sup>142</sup>

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<sup>141</sup> Uncorrected  $\chi^2(3, N=4252)=12.86$ ; design-based  $F(3.00, 12747.58)=3.19$ ,  $p=.023$ .

<sup>142</sup> Uncorrected  $\chi^2(3, N= 4479)=3.64$ , design-based  $F(3.00, 13426.59)=0.93$ ,  $p =.428$

Figure 6.6: Degree qualification and high job appropriateness by employer size



Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, weighted percentages. N (degree) = 4,252; N (appropriateness) = 4,479.

Regression results supported the above findings for both perceived degree requirement and high job appropriateness (Table 6.10). Working in micro or in small businesses decreased the likelihood of the graduates reporting that the job required a degree by 0.56 and 0.68 times respectively relative to employment in a large business. However, business size was not being significant for high perceived job appropriateness.

Similarly to results presented in Sections 6.2 and 6.3, working in any occupation relative to the professional occupations decreased the likelihood of reporting both degree requirement and high job appropriateness, especially in sales and customer services and elementary occupations. Unsurprisingly, employment in distribution, hotels, catering, and in transport and tourist services relative to banking, finance and insurance also diminished the likelihood of reporting both degree requirement and high job appropriateness.

Graduates who were mature students (aged 21 or more at September 30, 2006), and graduates from routine and manual occupational socio-economic backgrounds were less likely to report that their jobs required a degree, while non-white ethnic group graduates were less likely to report that their job was very appropriate. Having studied at non-highest tariff HEIs decreased the likelihood of reporting that the job required a degree, but was much less important for high job appropriateness. Lastly, having studied an undergraduate

subject including STEM and high self-confidence increased the likelihood of reporting high job appropriateness, but were not significant for degree requirement.

The results for the likelihood of a degree being required for the job were checked using a multinomial logistic model, comparing the differences between general and specific degrees relative to all other qualifications (no degree). The results showed that employment in a small business decreased the likelihood for both types of degree (relative risk ratios <1), however, the relative risk ratios for specific degrees were closer to 1 than those for general degrees and were also less statistically significant ( $p > .05$  compared to  $p > .001$ ).<sup>143</sup> This suggests that graduates employed in smaller businesses were slightly less likely to report that their job required a specific degree, but much less likely to report that their job required a general degree compared to graduates employed in large businesses and relative to no degree being required.

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<sup>143</sup> The exponentiated coefficients of general multinomial logistic models are the ratios of relative risks – “the ratio of the relative risk for a one-unit increase in  $x$  to the relative risk when  $x$  is unchanged” (Gould, 2000, p. 27). Looking at Appendix A Table A.9, the relative risk of a general degree being required compared to no degree was 0.73 for graduates employed in small businesses relative to those in large businesses, and for a general degree relative to no degree – 0.60 for those in small businesses relative to large businesses.

Table 6.10: Whether job required a degree and whether job was appropriate (odds ratios)

	Degree (any) required		Job very appropriate	
	Model 1	Model 6	Model 1	Model 6
Micro	0.671***	0.562***	0.906	0.848
Small	0.866	0.658***	0.954	0.85
Medium	1.042	0.799	1.003	0.851
Large organization (ref.)				
Managers, directors and senior officials		0.175***		0.539**
Professional occupations (ref.)				
Associate professional and technical occupations		0.279***		0.466***
Administrative and secretarial occupations		0.085***		0.184***
Skilled trades occupations		0.025***		0.278***
Caring, leisure and other service occupations		0.045***		0.212***
Sales and customer service occupations		0.021***		0.060***
Process, plant and machine operatives		0.015***		0.037**
Elementary occupations		0.007***		0.061***
Agriculture, mining, quarrying (includes gas extraction)		1.519		0.944
Manufacturing		1.411		0.842
Electricity, gas, water supply		0.938		0.949
Construction (includes civil engineering)		1.097		0.91
Distribution, hotels, catering (includes retail)		0.391***		0.322***
Transport and tourist services		0.609*		0.350***
Information and communications sector		0.97		0.925
Banking, finance, insurance (ref.)				
Business services (includes legal services)		1.367		0.807
Education (includes schools, colleges, etc.)		0.652		0.389***
Other public services (local / central gov't)		0.665		0.854
Female		1.046		0.896
Mature student 21+		0.591***		0.971
Non-white ethnic group		1.18		0.727**
Routine and manual occupations		0.780*		0.938
Highest tariff (ref.)				
High tariff		0.580***		0.85
Medium tariff		0.419***		0.796*
Lower tariff		0.264***		0.886
Other		0.559**		0.998
STEM subject dummy		0.945		1.199*
High self-confidence		1.111		1.264**
Observations	3930	3930	3939	3939
Pseudo R-squared	.003	.372	>.001	.200
Log lik.	-2611.7	-1645.3	-2681.6	-2146.1

Source: Futuretrack 2006, Wave 4. Regression results for the effects of business size on the likelihood of graduates reporting that the job they were doing required a degree, nonmissing observations only.

## 6.5 Did business size affect skill utilisation?

### 6.5.1 Hypotheses

This chapter tested whether business size affected skill utilisation measured by: (1) whether the graduate used their (a) skills and (b) knowledge developed during their degree at work; (2) the likelihood of being required to use specific skills at work; (3) whether the job required a degree; and (4) graduates' self-reported job appropriateness. The results indicated that business size did not usually affect any of the four measures of skill utilisation when controlling for occupation, industry and personal background, except in some cases, as discussed below.

**H1. Graduates working in small businesses will report *different* levels of *skill utilisation* as measured by (a) using skills that they developed during their undergraduate degree, and (b) using subject/discipline knowledge that they developed during their undergraduate degree, compared to graduates working in large businesses when controlling for occupation, industry and personal background.**

There was no evidence that business size was associated with graduates' responses to using skills they developed during their degree in their job, but there was some weak evidence that graduates were more likely to use the subject or discipline knowledge if they were employed in small or medium-sized businesses. The effect of being employed in small and in medium-sized businesses relative to large businesses was positive and significant in the restricted model, however business size ceased being significant as soon as occupations were added into the regression model. This hypothesis was not supported.

**H2. Graduates working in small businesses will report *different* levels of *skill utilisation* as measured by the frequency of being required to use specific skills at work, compared to graduates working in large businesses when controlling for occupation, industry and personal background.**

The extent to which graduates reported being required to use the eleven skills and competences varied by the type of skill. The graduates' responses for being required to use each of the eleven skills were correlated with the other skills in the list. This suggested that graduates reported using some groups of skills together in their jobs. Exploratory factor analysis suggested that either two or four underlying factors could be used to model the underlying structure of skill use. Retaining four factors gave better patterns of skill use than

two factors, and was also more closely supported by parallel analysis. The four factors were named 'creative thinking,' 'mobilising own capacities,' 'critical analysis,' and 'mobilising others.'

Employment in micro, small, or medium-sized businesses was not significantly associated with the creativity factor, but was negative and significant for mobilising own capacities, critical analysis and mobilising others. On the one hand, these results contradict other findings in the literature which suggest that skill utilisation may be higher in smaller firms (e.g. the importance of self-reliance skills in SMEs (Hawkins and Winter, 1996), or that graduates in small firms were less likely to report underutilisation of skills (Nove et al., 1997). On the other hand, the evidence here is consistent with other research (e.g. Salas Velasco, 2010).<sup>144</sup>

However, there were within-factor differences: when the 11 skills were considered individually, the skills loading on the creative thinking factor had different patterns with respect to business size. Working in small businesses increased the likelihood of being required to use research skills and working in micro businesses increased the likelihood of being required to use entrepreneurial skills 'a lot,' but working in medium-sized companies decreased the likelihood for presentation skills. For innovative thinking skills there was no significant relationship by business size. These differences make the results difficult to interpret.

**H3. Graduates working in small businesses will report different levels of skill utilisation, as measured by whether the job required a degree (qualification match), compared to graduates working in large businesses when controlling for occupation, industry and personal background.**

Business size did have a significant and negative effect on the likelihood of graduates reporting that their job required a degree at the aggregate labour market level, for those

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<sup>144</sup> However, innovative thinking and research skills were investigated further in the Qualitative phase rather than mobilising others: partly because previous regression model specifications in preliminary versions of this analysis pointed to the conclusion that the likelihood of using these skills was higher in smaller businesses than in larger ones. As discussed in Section 3.2.3 this was a particular challenge in carrying out sequential mixed-methods research. Aspects relating to the 'mobilising others' factor do come through in some of the interviews, particularly in the reasons some graduates employed in small companies gave for changing jobs.

employed in micro and in small businesses. These findings held both for any degree type and for specific and general degrees (more so for general than for specific).

**H4. Graduates working in small businesses will report *different* levels of *skill utilisation*, as measured by self-reported job appropriateness, compared to graduates working in large businesses when controlling for occupation, industry and personal background.**

Business size did not significantly affect the likelihood of the graduates reporting high job appropriateness.

### 6.5.2 Discussion

Compared to findings from the Nove et al. (1997) study, which suggested that graduates working in smaller firms were less likely to report that their skills were under-utilised, the *Futuretrack* sample findings presented here indicated that there was no obvious difference between skill utilisation as measured by the likelihood of using degree skills and knowledge when controlling for the occupational group, industry sector, and personal background.<sup>145</sup>

Occupation, and to a lesser extent, industry, appear to be the variables which have the most important effect on skill utilisation. This is consistent with Allen and van der Velden's (2011) findings that the use of degree knowledge at work was primarily associated with 'classical professional' and 'semi-professional' occupations (these may be viewed as similar to professional and associate professional occupations (SOC 2010), or to expert and communicator jobs (SOC(HE)2010).<sup>146</sup>

A key finding was that graduates' perceptions of being required to mobilise their own capacities, mobilise others, and to use critical evaluation were lower for those working in small firms than in large businesses. The OECD (2013) Survey of Adult Skills (PIAAC) reported similar findings: "the use of information-processing skills [reading, writing, numeracy, ICT, and problem solving] increases with establishment size across all the domains," and co-operation at work (may be considered similar to mobilising others) was

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<sup>145</sup> Some positive association was found with the perceived likelihood of using entrepreneurial skills and research skills.

<sup>146</sup> Allen and van der Velden's (2011) REFLEX study looked at the employment and skill and knowledge use of university leavers graduating in 1999/2000 five years after graduation in 16 countries.

also less commonly found in smaller establishments (p. 166). It should be noted that the likelihood of use of research skills was higher for graduates employed in small businesses compared to large ones. OECD (2013) also found that self-organising skills also did not seem to vary much across establishments of different sizes - this was partly supported by the finding in this thesis that working individually did not vary with business size, but time management, and the factor onto which both these skills loaded, mobilising others, decreased with business size.

Thus, it appears that for graduates employed in small and large businesses, from the perspective of skill and knowledge use there are no clear differences. From the quantitative phase analysis the following questions for qualitative investigation emerge:

- Why was the proportion of graduates reporting using degree skills lower than those using degree knowledge? What do graduates understand by degree skills and knowledge?
- What do graduates understand by research and innovative thinking skills, and how do they use these skills at work?
- Given that high levels of job appropriateness scores did not appear to be affected by business size, were there any skills and knowledge that the graduates wanted to be able to use at work but did not have the opportunity to do so?

Chapter 8 investigates these issues in more detail using a qualitative approach focusing on graduates employed in the associate professional occupations predominantly in the business services sector.

## 7 Qualitative phase

The following chapters discuss the findings from 20 interviews conducted with predominantly highly-qualified graduates from highest- or high-tariff universities, *elite graduates*,<sup>147</sup> who were employed in business and public service associate professional occupations at the time of the *Futuretrack* survey (SOC 2010 minor groups 354 and 356). Thirteen of the respondents worked in small companies and seven in large companies. For an overview of the graduate interview sample, see Section 3.5.4.2. The interviews explored how these university graduates experienced their jobs and the challenges they faced. The graduate participants were selected specifically to focus on the ways in which elite graduates were able to use opportunities in such businesses and whether there were any differences by business size. The group of interviewed graduates is referred to as ‘elite graduates’ in this Section.

The quantitative analysis in Chapter 6 raised several questions that have been investigated in the qualitative phase of the study. First, what did graduates mean by degree skills and subject knowledge and how did they use degree skills and degree knowledge at work? Second, what did graduates mean by, and in what ways did they use, some of the specific skills listed in the *Futuretrack* survey (research and innovative thinking)? Third, did their employer specifically recruit graduates? And last, did the graduates think that they had any skills or knowledge that they did not have the opportunity to use at work? These questions are addressed in Chapter 8.

The *Futuretrack* quantitative analysis presented little information about graduates’ perception of career development (see Section 5.3.5), and so this topic was discussed in the interviews. Chapter 9 presents graduates’ accounts of their experiences of work, particularly regarding their early career development in terms of taking on more responsibilities, experiences of promotion and changing jobs.

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<sup>147</sup> See Section 3.3.5.2 for a rationale of selecting these graduates and for the description of the sample selection process.

## 8 Use of knowledge and skills at work

### 8.1 Introduction

This chapter presents the qualitative investigation of several key quantitative results discussed in the previous chapter. The following questions are explored:

- What did the graduates interviewed understand by skills and knowledge? How did their conceptualisations vary? (Section 8.2)
- What did they understand by research skills and innovative thinking skills? How, if at all, did their perceptions of using research and innovative thinking skills vary? (Section 8.3)
- Were these graduates' employers specifically recruiting graduates? (Section 8.4)
- Were there any skills and knowledge that these graduates did not have the opportunity to use at work? (Section 8.5)

The graduates' responses were treated as one main body of data. As discussed in Chapter 3, once the coding had been completed, the results were analysed to see if there were any patterns within the responses, in particular with regard to employer size. The findings are discussed in Section 8.6.

### 8.2 Use of degree skills and knowledge at work<sup>148</sup>

The *Futuretrack* 2006 Wave 4 survey asked whether graduates used their subject knowledge and the skills that they developed on their undergraduate degrees in their current jobs.<sup>149</sup> The analysis in Chapter 6 showed that when controlling for occupations, industries and personal background, business size was not associated with the likelihood of using degree skills or degree knowledge.<sup>150</sup> These findings raised the question of what the graduates understood by degree skills and knowledge. In the interviews, the graduates

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<sup>148</sup> An earlier version of the analysis presented in this Section appeared as an article in HECSU's Graduate Market Trends, (Luchinskaya, 2014).

<sup>149</sup> "Do you / Did you use the subject or discipline knowledge that you acquired on your undergraduate degree programme in your current job?" and "Do you / Did you use the skills developed on your undergraduate degree programme in your current job?"

<sup>150</sup> The likelihood of using degree knowledge was only associated with small and medium-sized businesses when business size was the only variable in the model.

were asked: “In the *Futuretrack* survey, you said that you used / did not use your subject skills and / or subject knowledge at work. Can you explain what you meant by that?”

Looking at the interview participants' responses to the *Futuretrack* survey, 18 out of 20 graduates said that they used the skills they developed during their degree in their job: 11 out of 13 graduates employed in small businesses and all seven graduates employed in large businesses. However, only 11 out of 20 graduates said that they used their subject knowledge: 8 out of 13 in small businesses and 3 out of 7 in large businesses. These findings are consistent with the quantitative finding that the sample of first degree graduates reported using their degree skills in their job more frequently than using degree knowledge, irrespective of business size (see Section 6.2). However, the interview accounts gave different interpretations of skills and knowledge, which offered an explanation into why some graduates said that they used their degree skills and their degree knowledge while others did not. These interpretations are discussed in the following Section.

## 8.2.1 Meanings of degree knowledge

### 8.2.1.1 “Background knowledge” / “understanding”

One theme emerging from the accounts was of degree knowledge as something that was useful at work in an indirect way. In the majority of these accounts, the graduates had also reported that they used their degree knowledge in their work at the time of the *Futuretrack* survey. In three further accounts, graduates who, in the survey, reported that they did not use their degree knowledge, in the interviews admitted that they may have used their knowledge indirectly, or to a very limited extent (discussed below). Among examples of using knowledge in an indirect way was using it to understand how particular processes worked. For example, Jane very clearly articulated how her background knowledge of science enabled her to understand something specific (i.e. the science behind how a drug works) and explain it to non-scientists in her company. She thought that communicating this kind of information could help the market research company market their product more effectively.

*I suppose [using degree knowledge] that's to a lesser extent than in some jobs that you might go on to, but I do still feel like when, for instance I'm working on a cardiovascular drug at the moment [...] and I found that actually, **understanding***

***the science behind the drug really enabled me to talk more effectively about how the company should market it [...]*** I was trying to explain it to one of my directors today who doesn't have so much of a science background, [the director] was like, "Oh, I understand it now, because you've explained it to me and I didn't get it before," and I think I said to [the director], literally today, "Oh I sometimes forget that having a science background perhaps makes it easier for me," and that's the only time [knowledge] comes in. [...] ***But I don't need to, on a day to day basis, call on my science knowledge*** [emphases added].

(Jane, natural sciences graduate, employed as a research executive in a small market research company talking about how she used her degree knowledge in her new job as a senior research executive in a medium market research company)

Although the example in Jane's quotation was about using knowledge in her new job, it was clear from the interview that she saw a connection between her market research work and her science knowledge in the job she was doing at the time of the *Futuretrack* survey, as shown in the quotation below.

***[B]ecause of my science background, I liked the drugs which focused on mode of action, and look at the drug pathways, which relates back to my science*** [emphases added], *these were the interesting things. So I think for me the interesting thing was actually doing the research, it's what I enjoy the most.*

(Jane, on what she found interesting in her old job as research executive in a small market research company specialising in healthcare)

Another point in Jane's account further illustrated her perception of how degree knowledge could be used in market research work. Jane described how a graduate colleague who had studied anthropology took a more ethnographic approach to market research, whereas Jane herself was more interested in the clinical aspects having done a science-based degree. Jane thought that her degree may have influenced how she approached her job, but that she also considered herself to think in a "sciency" way:

*[P]erhaps if I had done a different degree I would look at my job on a day-to-day basis in a different way, but perhaps it's just because that's the way I've always –*

*I've always had more of a sciency brain and that's the way I think, it's just that now **it's kind of become intuitive** [emphasis added].*

(Jane, on whether her degree subject had influenced her perception of using degree knowledge)

In a similar way to Jane, but less focused on communication and explanation, Bryony also said that she used knowledge indirectly:

*[In my degree] I did a lot of work on drugs and alcohol, delinquency, offending, all of that sort of stuff was a really strong basis for [my] interest in youth. **On a conceptual level** it meant I knew things about different schools of thought around alcohol and drinking and drug life course and that sort of stuff. So that helped, and **it meant I'd have background knowledge** [emphases added].*

(Bryony, social studies and law graduate, on using degree knowledge in her work as research executive at a small social research agency)

Three graduates who, in the survey, reported that they did not use their degree knowledge at work, when asked about this in the interviews, said that some aspects of what they considered to be their degree knowledge were useful at work (Victoria and, to a lesser extent, Susanna (below) and Dana (see quotation on p. 174)), for example through being able to apply “*foundations*” of a certain kind of knowledge (in Victoria’s case, statistics), or having an “*analytical view of things.*” These examples are shown in the quotations below, which read in a similar way to Jane’s example of using knowledge at work above. In Victoria’s quotation, she distinguished between knowledge of mathematical concepts (i.e. the things she had studied on the course, see also Section 8.2.1.3) and the foundations of statistical knowledge in her work as an analyst.

*There isn't really much call for in-depth knowledge of mathematical concepts as an analyst, but **it does help to be highly numerate** [...] the statistics that I did do didn't directly apply to the work that I do but **the foundations of that sort of statistical knowledge could be applied** [emphases added].*

(Victoria, mathematical and computer sciences graduate, employed in a small market research company as a research analyst)

Susanna's perception was slightly different because her definition of degree skills overlapped slightly with degree knowledge, as shown below. Susanna used her example of the ability to read complicated material as an example for both the degree skills that she developed at university and the degree knowledge. The way in which Susanna described both skills and knowledge is similar to the way in which some respondents described using their degree skills (see Section 8.2.2.3).

*I found that I was using those kinds of skills [how to read a lot of complicated material] for **being able to see the wood for the trees** and to **pick out what was the important information** in a document or a book **and then simplify that**, and that was something I really enjoyed and wanted to do in healthcare communications. And I do find that **having developed that ability has helped me in my job**, because a lot of the things I'm talking about are very scientific written by scientists, so they are not for public consumption. Once you sit there and read them you think this is really cool, **how do I make it so that other people can see that?** So I think I do use that. [...] [Regarding using subject knowledge] Let me think... **Apart from having this analytical view of things, no, I'm not sure that my knowledge of [the subject] has been used, but [subject] thinking - perhaps, but I think that's stretching it** [emphases added].*

(Susanna, humanities and languages graduate, employed in a small healthcare PR agency as account manager)

For one graduate (Rob), the word 'discipline' in the *Futuretrack* survey was crucial to his understanding of 'discipline knowledge.' Rob viewed the knowledge as the "approach" (see also degree skills as approach in Section 8.2.2.3), and being able to express key information and structure an argument, in a similar way to Susanna's explanation above.

*The key there, the word for me there that flips how I might answer the question is 'discipline.' So obviously 'discipline' can be used to mean the discipline that is English or the discipline of doing English, and I read it very much as the latter. Frankly I think that's the more accurate way to read it. [...] Obviously I can't remember my mindset when I answered this question, but my personal instinct is*

*that I would have included within that phrase the... approach. [...] So you can be good at English in that you can look at a text and almost immediately figure out what it's about and how it's working, but then there's **the discipline of being able to get the evidence for it and being able to express that, to structure your argument in a clear manner that is logical and flows well, articulate complex ideas in simple ways, and also do the legwork, the research, the wider reading** [emphasis added].*

(Rob, humanities and languages graduate, employed in a large social data marketing start-up company as an account executive)

### 8.2.1.2 “Develop a rapport with the client”

Another example of graduates’ interpretations of using degree knowledge in an indirect way was related to building a rapport between people. Brendon’s example mentioned how degree knowledge was useful for him “occasionally” in terms of communication, but in a different way to Jane. While Jane’s example focused on understanding and explanation, Brendon emphasised the contribution of his subject knowledge to “frame thinking” or to get on with clients (see also Sam’s quotation below). However, Brendon noted that whether or not he used his knowledge depended on the disposition of the client towards “academic references,” with the implication that “practical” and “on-the-ground” clients may not be impressed by philosophical concepts.

*[W]hat has been quite useful has been to anchor, or to **bring in some kind of academic reference [...] which can sometimes help to unlock ideas, or frame some thinking. I guess that's quite useful occasionally** [emphasis added]. It's not very academic much of the time, but sometimes it's quite nice to be able to bring in a bit of academic direct bit of research, or a bit of high-level conceptual thought, if that's appropriate at the time, it can be quite good. So using that stuff that I learnt during my degree does come into play occasionally. [...] It depends on the client as well [...] with philosophy, I was in a meeting once, and one guy got quite into describing something as Cartesian, and it was quite good at that point to start doing that, whereas [with] someone a bit more practical and 'on-the-ground' it probably isn't really going to work.*

(Brendon, humanities and languages graduate, employed as a marketing associate professional in a small advertising company)

Similarly, Ruth, whose degree was in the natural sciences area, and who was working as a specialist recruitment consultant, said that having knowledge of the subject made it easier for her to talk to the scientists she recruited because she knew what they were talking about when they used specialist language or mentioned specific concepts.

Perhaps the reason that the graduates conceptualised knowledge as something which they used indirectly was that they were working in jobs that required a general degree, rather than in jobs that specifically made use of factual degree-based knowledge. Purcell et al. (2002) reported that employers recruiting graduates tended to be divided into two types: those who required a specific degree in order to make use of graduates' specialist skills, and those who required a degree in any subject, to screen applicants and as a proxy for general skills and abilities (see also Section 8.4). Sam, who said that he used his knowledge indirectly, compared his own job with those of other colleagues who were working in a role that, in Sam's opinion, directly related to their degree at university.<sup>151</sup> His example of other jobs in which he thought graduates would be more likely to use degree knowledge also echoes Jane's qualifying phrase that she thought that she used her subject knowledge "to a lesser extent than in some jobs that you might go on to."

*For me, knowledge from a degree and using it in the workplace, would be for example, there are some of us in this company with a psychology degree and they're now business psychologists, so **obviously they are using the day to day stuff they learnt in their degree for their role** [emphasis added].*

(Sam, social studies and law graduate, employed as a marketing associate professional at a large research company)

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<sup>151</sup> Sam's example of using knowledge was similar to Brendon and Ruth. He thought that his degree subject developed his communication skills, which was useful in his work: "it is important for me to develop a rapport with the client."

Sam's example of using knowledge was similar to Brendon and Ruth. He thought that his degree subject developed his communication skills, which was useful in his work: *"it is important for me to develop a rapport with the client."*

Sam's idea that graduates used their knowledge in a direct way when their job was more connected to their degree can be contrasted with the experiences of two respondents who had done degrees relating to psychology: Claire and Dana. Dana, who studied interdisciplinary subjects including STEM, was working as a marketing and product development executive in a large insurance company at the time of the survey. In the survey, Dana said that she did not use degree knowledge at work. When probed further, Dana mentioned that she used her psychology background: *"for example, I was deciding on designs for emails the other day and I was trying to decide whether to go for something informative or a bit of a shock value in the subject line [...] and I was using my background in psychology to think that people are more interested in the shock value and The Sun-type headlines that they would like to read."* But she emphasized that apart from that she did not use her university psychology knowledge. Dana explained that although marketing contained an *"element of psychology,"* she did not use the *"kind of psychology"* (e.g. eating disorders) that she learnt on her degree. She also thought that marketing mainly required *"common sense."*

In contrast to Dana, Claire said that while she *"didn't use a huge amount"* of psychology knowledge, her job required applicants to have psychology as a degree to ensure *"a genuine interest in the way people think [...] and behave."* Interestingly, one of the things Claire wanted to do more of was to use her psychology background to do research. Claire explained that because the vocational trainers in the company were selected for their interest, she and her colleagues were very passionate about psychology and wanted to apply their knowledge to research, but that there was no time for them to do it in addition to their main tasks and responsibilities.<sup>152</sup>

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<sup>152</sup> Claire was working as Instructional designer at a training services company, and her job involved working with clients to determine their training needs and coming up with a tailored session for them, working with designers and printers and *"getting it out of the back door,"* but not delivering the course itself.

These two examples are consistent with other research which has questioned whether knowledge developed on degrees connected to/related to employment was perceived as useful in the graduates' jobs (e.g. "accounting graduates were [typically] fairly scathing about the applicability of their degree knowledge" (Chillas, 2010, p. 166)).

### 8.2.1.3 "Things I have studied" / "actual topics of lectures"

The most popular definition of degree knowledge in the interview accounts was something that was related to the content of the degrees, such as lecture slides, seminar topics, and dissertation papers. Similar definitions can be observed in the *Class of '99* study (Purcell et al., 2005).<sup>153</sup> More than half of the interviewed graduates defined degree knowledge as the content of their undergraduate degrees. In contrast to the graduates who said that they did use their knowledge at work, and gave definitions and examples of using degree knowledge in indirect ways as discussed above, most of the graduates who defined degree knowledge in terms of course content said that they did not use it at work.

For example, Helen, who did a natural sciences degree and was employed as a business development analyst at the time of the survey, explicitly related subject/discipline knowledge to lecture topics: "*I ended up specialising in chemistry in my degree, and in the business development analyst role there was no chemistry involved at all, so **none of the actual topics of lectures come up** [emphasis added]."* (Similarly Karen, \*Brendon, Julia, \*Victoria, Amy, Dana, Helen, Matt, Alex, \*Susanna).<sup>154</sup> Alex explained that he did not use his undergraduate course knowledge, but that he had done a master's degree in HR management which he saw as being more applicable to his job.

*[T]he knowledge I developed in terms of history, there's very little, I would probably say **none of that that I actually use** - the Cold War and the Suez crisis doesn't come up in the world of work outside university, but it's very interesting all the same [...]*

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<sup>153</sup> E.g. (Purcell et al., 2005, p. 197): "I think it's more the analytical skills that you build up and the logical thinking and the approach, perhaps more so **than some complicated calculus or whatever...** the skills rather than **the material**, if you like [emphasis added]." (Female maths and computing graduate, research assistant, education).

<sup>154</sup> \* It should be noted that while Brendon defined his knowledge in terms of "*that stuff that I learnt during my degree,*" he also explained that sometimes this knowledge helped him connect with clients or come up with new ideas. See also alternative meanings of knowledge in Victoria and Susanna's interview accounts in Section 8.2.1.1.

*Knowledge for me, based on my degree, would very much be about the arguments and the facts and the historical events that I learnt about. [...] . I guess if I put that into the context of the masters that I had done since which is in HR management, what I've developed through that is **a knowledge of HR theory, and I obviously can apply that to my day to day work as well** [emphasis added]. (Alex)*

#### 8.2.1.4 “Technical aspects”

Another slightly different interpretation was Chris’s view of using his degree knowledge in his example of writing courses for school children. Chris worked in a company which provided courses for children underperforming at school. As trainer, he would lead the classes or support another lead trainer. At the time of the interview, Chris was a team leader, managing and training other trainers, although he still delivered some courses “*from time to time.*” It is interesting that Chris viewed subject knowledge not as the things he had learnt but rather as the “*mechanics*” and the “*technical aspects.*” This is similar to the ‘understanding’ and ‘background knowledge’ theme, and is slightly different from the ‘actual topics’ theme described above.

*If I'm writing a course, I would say I am using my subject knowledge if [the course is] English or Film, **because I know about English and the mechanics of it and the technical aspects of it.** So that's the knowledge - the things I know about English being put to use [emphasis added].*

(Chris, humanities and languages graduate, employed as a trainer in a small educational services company)

#### 8.2.2 Meanings of degree skills

Compared to the varied definitions of degree knowledge discussed above, most of the interview accounts were consistent in their definitions of degree skills. The majority of responses in the interviews defined skills as something “*practical,*” and some respondents explicitly stated that the skills they developed during their degrees were “*non-subject specific,*” or the “*skills that everybody learns at university.*” Most accounts gave examples of what the graduates considered to be their ‘degree skills.’

### 8.2.2.1 “Practical” / “non-subject specific”

Alex’s quotation below is typical of the practical and non-subject specific definition of degree skills. Alex’s account explicitly conceptualised degree skills as something non-subject-specific (also Karen, Julia, Victoria and Matt).

*Knowledge for me, based on my degree, would very much be about the arguments and the facts and the historical events that I learnt about. **Whereas skills is very much the practical side, it's almost non-subject-specific, I would suggest** [emphasis added].*

(Alex, humanities and languages graduate, employed as a human resources analyst in a large multinational oil and gas company)

Another variation on the “practical” theme was degree skills as the ability to do something, as illustrated in Chris’s quotation.

*Skills - being able to communicate, is something that is a skill rather than something you know, because **it's something you develop**. You can know how to communicate, but **knowing it and doing it are two different things**. Everyone can understand on an abstract level that good communication is this this and this, but just because you know it doesn't mean you can do it [emphasis added].*

(Chris, humanities and languages graduate, employed as a trainer in a small educational services company)

Other accounts gave some examples of what degree skills might be. For example, Amy listed writing, researching, and presentation skills: “So obviously a lot of the [subject] degree is **writing, researching, constructing an argument, and I do all of that every day. I also do presentation** [emphasis added].” The most frequently mentioned types of degree skills were writing, mentioned in 11 cases, analytical thinking – 9 cases, and research and presentation skills – 8 cases. Karen’s quotation below explained how these skills related to her degree, and is representative of other graduates’ accounts.

*I think I'm obviously not doing anything specifically related to history of art now. I loved the subject and I loved the degree, but I think a lot of the skills are*

*interchangeable [i.e. the skills do not depend on the subject]. So **research skills and being able to go to the right place for the right information and being able to think analytically about what people are really saying, and then to apply that to back up your argument is essential for marketing.** So if you wanted to create something about your product you would go and find out things about it and things that other people have done, and then you use that as evidence for your argument. So I'd say that that's interchangeable. **And writing. One of the things I've had to learn a lot more from work is obviously with essays you need to get to the point, but you've generally got a fairly generous word count, whereas often I'll be given 150 words, so... But definitely writing skills. And presentation skills. I do some online presentations, but I would like to use that more** [emphases added].*

(Karen, humanities and languages graduate, employed in a small education services company as a marketing manager)

That graduates tended to pick out examples of skills such as writing, analytical thinking, research and presentation as the skills developed during any degree relates back to the factor analysis in the previous chapter and the grouping of certain skills into 'academic,' 'cognitive,' or 'problem-solving' skills (see Sections 6.3.2 and 6.3.3). Similar types of responses discussing 'academic' skills have also been observed in earlier graduate cohort studies, such as the *Class of '99* (Purcell et al., 2005).

#### **8.2.2.2 "Graduate skills"**

Another definition that was related to the 'skills that everybody learns at university'/ 'non-subject-specific' concept, was 'graduate skills.' Like other definitions discussed above, Matt contrasted his degree knowledge (content-based definition) with the skills he developed while gaining that knowledge, but he also grouped skills such as research, independent learning, presentation skills and collaborative working under the term 'graduate skills,' unprompted.

*[T]he skills that I acquired while gaining that knowledge [...], such as being able to do research, being able to use Google and to satisfy yourself that certain things are correct, that kind of skill, presentation skills, **even the usual graduate skills,** I believe they were useful. [...]*

**Q: What would you say the usual kinds of graduate skills are?**

[...] [W]e try and talk to employers, skills agencies, people who set benchmark standards... . So our definition of graduate skills is **the skills that are going to find you a job basically** [emphases added].

**Q: So if a non-graduate is looking for a job, what kind of skills do they have?**

Well, it's more about what they don't have I suppose. Which would be research skills, independent learning, presentation skills maybe, group work to an extent, working collaboratively I suppose is a better definition of what I mean.

(Matt, natural sciences graduate, employed as a business development manager in a company providing education services (small business unit owned by large parent))

Whether graduate skills were primarily gained from studying at university, attending university in general, or could be developed elsewhere was not an issue that was discussed in the interviews.<sup>155</sup> However, Dana brought up what she saw as the difference between an academic approach and a non-academic approach to working on projects, contrasting her own experience with the example of her sister who had done a creative writing course.

*My younger sister had done a creative writing course [...] it's completely different to doing an academic course, and you can definitely tell, in the way in which we approach things, everything that we do is completely different, and [...] when I help her with various projects, I refer back to the stuff I did at uni, so those skills were quite valuable [...].*

(Dana, interdisciplinary subject including STEM, employed as a marketing and product development executive in a large insurance company)

### 8.2.2.3 “Methodological process” / “approach”

Another theme in the accounts presented degree skills as a “process” or an “approach,” which differed from the “practical” theme discussed above because it framed the skills as a way of doing something, rather than as a combination of different type of “practical” skills developed at university. Anna, for example, viewed skills as “a particular process you go through when you are performing analysis, grouping, coding, and all these kinds of things.”

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<sup>155</sup> Graduates were asked whether their job required a degree, see Section 6.4

Anna’s conceptualisation of skills as a process is also similar to Dana’s definition of degree skills:

*In [my degree] there was a lot of research, a lot of reading, a lot of writing and putting together your ideas and forming arguments and writing concisely and effectively. [...] [W]hat I did learn at university was how to write and how to research and how to read, and though it's not always directly relevant, I suppose when I do research [...] it's a process you learn, not just diving straight in [...] **you learn that kind of methodological process to approaching problems** [emphasis added].*

(Dana, interdisciplinary subject including STEM, employed as a marketing and product development executive in a large insurance company)

These accounts of skills as “*approach*” or “*process*” are similar to other accounts’ conceptualisations of degree knowledge (see Section 8.2.1.1). For example, Susanna talked about skills as the ability “*to see the wood for the trees and to pick out what was the important information in a document or a book and then simplify that,*” and about knowledge as “*having this analytical view of things,*” similar to Dana’s “*methodological process [...] to approaching problems.*” This finding suggests that in some cases the distinction between skills and knowledge was less than clear-cut. This supports the tacit and explicit view of knowledge and the relationship between skills and knowledge discussed in Section 2.4.2: that particular skills may be seen as a type of tacit knowledge, in contrast to the subject content as codified, explicit knowledge.

### 8.2.3 Using degree knowledge and skills at work

#### 8.2.3.1 Narrow vs. broad conceptualisations of ‘subject/discipline knowledge

There were some patterns in the interview data regarding graduates’ interpretations of degree knowledge and the survey data of whether they reported using degree knowledge at work. Of the 11 graduates who, in the survey, said that they used their degree knowledge at work, in the interviews, three defined it primarily as ‘background’ which helped their understanding; a further three – as ‘conceptual’ and useful to establish a “*rapport*”; and others – as an approach to problem-solving, as the technical aspects of a subject, or as knowing how to do something. None of the graduates who said that they

used their knowledge at work said that they used it in a direct way, and some, like Sam, gave examples of what they considered to be other graduates applying their knowledge more directly.

In contrast, all but one of the nine graduates who, in the survey, said that they did not use their knowledge at work, in the interviews defined knowledge almost exclusively in terms of the course content (e.g. “quantum mechanics,” “the actual topics of lectures”). In several cases, when this was discussed during the interview, the graduates supposed that their degree knowledge may have been used indirectly – this was the case with Victoria, who said that it *“the foundations of that sort of statistical knowledge could be applied [...] being numerate does help one trying to come up with models.”* Susanna and Dana also said that they may have used their knowledge indirectly, but they both emphasised that only a small part of their degree knowledge was useful for their jobs and that they used it only occasionally.

This pattern suggests that where graduates’ definitions of degree knowledge were not limited to subject content and included aspects such as *“understanding,” “foundations,”* or an *“approach,”* they were more able to articulate how they used degree knowledge in a work context. And, in a few cases, although the graduates defined their knowledge in terms of course content they were able to explain how they used it at work in an indirect way.

### ***8.2.3.2 Did degree subjects influence conceptualisations of subject knowledge?***

What might affect the way which graduates interpreted ‘degree knowledge’? There is no straightforward answer to this question. There was some evidence in the interviews that the degree subject affected the way in which graduates thought of degree knowledge more than degree skills, partly directly mentioned in accounts (see below), and partly because the definitions of degree skills were more similar to each other than the definitions of degree knowledge. For example, like other respondents, Richard differentiated between degree knowledge and skills in terms of theory and practice. However, his definition of degree skills was related to film-making whereas degree knowledge was related to writing,

researching and presenting – activities which most other respondents described as skills in less practice-based courses.<sup>156</sup>

***[T]he skills side of things very much was understanding the practical production process [...] I did a lot of Photoshop® work, things like that [...]. [B]ecause I'd learnt it at university as a practical side of things, those skills meant I could pick [the job] up straight away, and hit the ground running [...]. In terms of the knowledge, because between the media studies and the media production side of the course, there was a lot of presenting work I had to do, having had a basic understanding of communications, and also having to try and argue, with clients, make rationales for things [...]*** [emphases added].

(Richard, humanities and languages graduate, employed in a large international advertising company as a marketing associate professional)

However, the degree subject studied may only have a limited influence. The analysis in Section 6.2 showed that the majority of the variation in the likelihood of reporting that one used degree knowledge was due to the occupation and industry in which the respondents were employed, whereas the degree subject (STEM dummy) was not significant. In these interviews, however, the graduates were doing a similar type of job, which 'controlled' for some of the variation between occupations.

Among the interview respondents, five of those who did humanities and languages subjects viewed degree knowledge in terms of the course content. Of the five graduates who studied natural sciences, three defined degree knowledge as something which helped them with understanding or communication, and two defined it in terms of the course content. Moreover, Jane (p. 170) mentioned that she thought she had always taken a science-based approach: *"I've always had more of a sciency brain and that's the way I think."* This suggests that the degree subject affected only part of the way in which graduates viewed degree skills and degree knowledge. The limited influence of disciplinary background has

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<sup>156</sup> Richard's course was split between practice and theory, in contrast to other graduates who studied disciplines such as history or physics. While several respondents had done work placements as part of their degrees, in Richard's case the practice element was a fundamental part of the degree itself. For the respondents who had done work placements, they all found the experience of work extremely valuable.

also been documented in another study of academics' understandings of graduates' attributes (Barrie, 2006), which found that academics from similar disciplines exhibited different conceptualisations of graduate attributes, and those from different disciplines – similar ones.

The different interpretations of 'degree knowledge' discussed in this Section may provide an explanation for why a higher proportion of graduates in the *Futuretrack* survey were more likely to say that they used the skills gained during their degree than their knowledge in their jobs. Even within sub-major group 35 (business and public service associate professionals), 84% of respondents said they used their degree skills and 57% – degree knowledge. The interview data showed that where graduates reported using knowledge, they often mentioned that it was helpful in an indirect and in an occasional way. The indirect usefulness of degree knowledge also came through in two interviews where the respondents did not report using knowledge in the survey. This suggests that the graduates may be underestimating using degree knowledge at work.

### **8.2.3.3 Differences between *Futuretrack* survey responses and interviews**

Regarding degree skills, in the *Futuretrack* survey, two graduates reported that they did not use their degree skills at work (Ruth and Chris). When asked about this, Chris said that he did not know why he gave that response in the survey: *"I am wondering that as well, because I think I use both [skills and knowledge] [...] So regarding that answer, I use both the skills and the knowledge from my degree subject."* In contrast, Ruth explained that she thought that going to university hardly developed her skills such as verbal communication:

*I think the main thing with uni and school is that there's no one-on-one tuition, there was no verbal feedback. **I could work very well written, I could write essays, but if I was asked to argue verbally, make comments and things like this, there was no training in this whatsoever in uni, it was all written really** [emphasis added]. Except for a little time when I was in [a European country for an international year abroad], that university year was really good, that upped my skill level as opposed to what I was doing in the UK which just marked the skill level I already had, I just applied it to different essays.*

**Q: That's interesting, because of the people I'd spoken to, most said that they used their skills but not their knowledge.**

*Really? I don't know what skills I developed at uni to be honest. I was a bit older when I left than before uni, but I think the work I did in my final year I could just as easily have done in my first year.*

(Ruth, natural sciences graduate, employed in a small recruitment company as a human resources officer, on skills developed at university)

While the skills developed at university was not a topic that was discussed in the interviews, Ruth's account quoted above shows that perceptions of the "skills that everybody learns at university" vary even between respondents from similar backgrounds, and questions the umbrella term of 'graduate skills.'

No patterns were found between the definitions of degree skills and knowledge and small and large businesses. This finding also supports the results in Chapter 5 that working in small businesses did not significantly differ from large businesses in affecting the perceived probability of using degree knowledge at work. Regarding the use of degree skills, there was less variation in the meanings of degree skills compared to degree knowledge. Again, there was no apparent divide between graduates' conceptualisations and examples of degree skills and the size of the business in which the graduates were employed.

### 8.3 Using specific skills in work

In Chapter 5, the analysis of the relationship between business size and the self-reported frequency of using specific skills revealed that there was evidence of a relationship in some cases, even after controlling for occupation, industry and personal characteristics (see Section 6.3). In the interviews, the graduates were asked to explain what they meant by research skills and innovative thinking skills, and to give examples of how they used these skills in their work. The graduates were asked the following question: "You said that you use research skills and innovative thinking skills a lot of the time in your current job. Could you explain what you meant by that?" The graduates' responses usually included an explanation of what they considered research and innovative thinking skills to be and examples of how they used these skills at work.

#### 8.3.1 Research skills

The graduates tended to define research skills in more concrete terms than those used in relation to innovative thinking, which they found harder to pinpoint (see Section 8.3.2). Fourteen of the twenty graduates were asked about research skills.<sup>157</sup> The main themes, discussed below, related to finding out information, learning new processes or skills, and research skills as a skill developed during the respondents' undergraduate degrees. Frequently, the graduates mentioned multiple aspects of research skills in the same answer.

##### 8.3.1.1 Picking out what's important

The most typical definition of research skills included phrases such as "to find out facts" or "getting information from external sources" (11 cases). The accounts also usually mentioned repackaging or reprocessing information to be shared with their managers, colleagues or clients, using the ability to "pick out what's important," to "look in the right place" and to summarise or explain information. Desk, or secondary research, was also frequently cited (6 cases), and graduates emphasised looking at different sources of information to get to the right findings. Amy's quotation is typical of responses constituting this theme. Like Brendon and Victoria, Amy found research skills easier to define than

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<sup>157</sup> The remaining six graduates were not asked about research skills because they had given a detailed description of their main tasks and responsibilities at work that involved the use of research skills.

innovative thinking skills. For her job she was required to research different industries using a variety of sources, including the internet, and also had to pick out key information.

*Research is probably the most obvious one [compared to innovative thinking]. So on a daily basis we do a lot of research into different industries. I guess a lot of it is **desk research**, so you might read articles about a certain industry or company, you might read website comments, statistics, reports about an industry, a lot of delving into the history of something, **picking out what's important** [emphases added].*  
(Amy, humanities and languages graduate, employed as a marketing associate professional at a small advertising agency)

In two cases (Richard and Bryony) the graduates mentioned that they did less desk research as they progressed through their roles, however this was not necessarily the case with other graduates in research jobs. These quotations about using research skills to pick out important things echo quotations from earlier graduate cohorts (e.g. *Seven Years On*, Purcell and Elias, 2004).<sup>158</sup>

### 8.3.1.2 Learning about new things

Another theme was using research to learn new processes or skills, or to understand specific situations. Alex's quote was representative of those graduates for whom research was more about learning about new things, including work processes, programming languages, new products and so on. Alex in particular was concerned with understanding employee relations for his job as HR officer.

*Researching, I think there is that element as well, in the employee relations area. The sites that I worked at aren't new sites, there's history there, [...] **[t]here's certainly a researching element in talking to others within the business and going back through the company records to make sure you have an understanding of***

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<sup>158</sup> E.g. Purcell and Elias (2004, p. 6) "A lot of the work I do is document based, so it will be **writing summaries of research and recommendations for the brand** - in terms of how we market, how we commercialise the brand and the brand strategy - and a lot of the work in my history degree was based on the same way...which is: **get your sources together, get your material together, pull together your conclusions**, that is, your hypothesis of a situation [emphasis added]..." (Male, 29, History degree from old university, working as a brand manager for a household products manufacturer).

*past agreements and be able to respond to current queries or requests that might be made against them and it's not something that you are familiar with because it happened before you were there. I think the other bit in a HR sense where research is important is probably where you get into the kind of **employment law and policy** type things [...]. [C]ase law, when it comes to employment law, is an area which you need to have an understanding of and occasionally go and **trawl through the case law to decide the best way to handle that situation** [emphases added].*  
(Alex, humanities and languages graduate, employed as a human resources officer in a large multinational oil and gas company)

In explaining how he used research skills, Alex emphasised that in his role in HR, the need to do research into case law was something that was usually done by colleagues who had more experience in the area, but that he sometimes had to do it. Other graduates who mentioned using research skills to learn new things were Matt and Chris.

Matt's quote below further expands on the above issues.<sup>159</sup> Matt identified time availability as a factor that constrained his ability to use research skills. This point is also found in Claire's case, where Claire explained that she would have liked to make use of more research skills to look in psychology journals to inform her work, but that there was not very much time. There were other cases where graduates mentioned that they were under a lot of time pressure (e.g. Jess, Anna), but they did not explicitly connect this pressure to their use of research skills. In his answer to using research skills, Matt also referred to his degree knowledge and articulated the need to supplement that with his own research into how to do things. This can be viewed as an example of self-awareness and commitment to lifelong learning aspects of self-reliance skills (Hawkins and Winter, 1996).

*I think I could do a lot more if I had more time to use research skills, but **it's just a case of having the time. I use research skills every day to an extent because if I need to know something I'll just Google it and then learn it like that**, so a particular programming language, or more recently, because I'm working on a*

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<sup>159</sup> Note that in this case Matt considered his company to be a small-sized company, despite the fact that it was owned by a series of much larger parent companies and was coded as 'large' in the *Futuretrack* survey. See footnote 60 on respondents' perceptions of company size.

*project trying to understand how market segments can be better, and what I want to do is some kind of structured survey and then to do some kind of statistical analysis having to cluster various variables which share the same traits, and then using this information to figure out the kinds of customers we have. Now I haven't done any kind of statistical analysis really, apart from a bit in physics, which was not really useful because it's not descriptive. So I've spent a week, maybe more than that, just reading and researching into how to do that, how to design surveys, how to analyse the results, check how it's significant, etc. So that kind of research. But **also doing secondary research**, looking into similar studies that people have done and published, so looking into those results and bringing that into the strategy as well. So yeah, **I do use research all the time, but in different forms** [emphases added].*

(Matt, natural sciences graduate, employed as a business development manager in a company providing education services (a small business unit owned by a series of parent companies))

### **8.3.1.3 Research skills and degree skills and knowledge**

In some of the interviews, the accounts directly linked the research skills used at work to the skills and knowledge acquired on one's undergraduate degree. One way in which this took place was graduates who used 'research' as an example of the skills they developed at university (8 cases, see Section 8.2.2.1 for more information). All of those eight graduates defined the skills acquired during their degree as being non-subjects specific or practical in nature, and all eight had said that they used research skills in their roles, either 'a lot of the time' or 'some of the time.' When asked what research skills meant to them, they mentioned "*being able to go to the right place for the right information and being able to think analytically about what people are really saying*" (Karen, and similarly Julia, Amy and Sam); and "*if I need to know something I'll just Google it and then learn it like that, so a particular programming language [for example]*" (Matt).

Other graduates defined research skills they used at work as an approach to solving problems, which overlapped with some definitions of using degree knowledge, where knowledge was defined in conceptual rather than subject content terms, e.g. "*it's a process you learn, not just diving straight in and you [...] don't really know where to head, [... but]*

*you learn that kind of methodological process to approaching problems”* (Dana; see also Section 8.2.2.3).

In addition, even the graduates who did not explicitly mention research as an example of the skills they learnt at university identified connections between the knowledge and skills they developed at university and the research skills they used at work. For example, Brendon mentioned *“try[ing] to spot an angle on things that hadn't quite been realised before”* as a skill acquired at university, and then explained research skills he used at work as spotting *“interesting or useful things or opportunities in quantitative data, usually customer surveys.”* These direct and indirect linkages between using research skills at work and developing them at university have also been found in earlier graduate cohort studies, *Seven Years On* and *Class of '99* (Purcell and Elias, 2004; Purcell et al., 2005).

### 8.3.2 Innovative thinking

While most graduates in the interviews found it fairly easy to give a definition and examples of what they meant by 'using research skills,' some graduates found it difficult to pin down the concept of innovative thinking skills and to give examples of what they thought constituted 'using innovative thinking skills' at work. As with research skills, multiple categories of definitions of innovative thinking skills sometimes appeared in the same response. Three main themes were identified among the responses: (1) developing new products, processes or business ideas where no prior product or process exists (9 cases), (2) solving problems in different or creative ways (7 cases), and (3) thinking of new ways of presenting data or of communicating with clients (6 cases). Another issue raised in the interviews was adapting to unpredictable situations (Chris), which may be viewed as a way of solving a particular problem or dealing with certain unpredictable obstacles in different or creative ways.

#### 8.3.2.1 “Thinking outside the box”

Given that, at the graduate labour market level, as discussed in Chapter 5, there were strong positive relationships between using research skills and using innovative thinking skills (polychoric correlation coefficient,  $\rho$ , 0.59), critical evaluation ( $\rho = 0.63$ ), written communication ( $\rho = 0.62$ ), and presentation skills ( $\rho = 0.57$ ), it was interesting to observe interview accounts mentioning these concepts together with research skills, as discussed in

the previous Section, and with innovative thinking skills, as discussed below. Some of the most frequently mentioned phrases associated with innovative thinking skills were "thinking outside the box," and "thinking of new ideas." Effective communication was also mentioned in examples of using innovative thinking skills, as will be shown below.

In some cases it was quite easy for graduates to come up with examples of using innovative thinking at work because they had experienced situations where they were involved in developing a new product or process "from scratch." The theme uniting these interpretations is the novelty of what the graduates were producing, and is consistent with a widespread typology of innovation (product and process innovation (e.g. Knight, 1967)). The following quotations illustrate the typical kinds of responses where novelty was important. Three quotes were selected to show novelty in the context of new products (Karen), processes (Brendon) and workflows (Ruth).

Although Karen was not involved in programming to develop the new product (a new English language training platform) she and her colleagues had to liaise with the developers to communicate how they thought it should work. Karen thought that because this new product was unprecedented she had to be innovative because she and her colleagues were responsible for solving these problems.

*Innovative thinking would be... one of the things I am involved with at the moment is, it's not exactly public knowledge, but it's not a huge secret either, we're developing a new training platform, virtual world platform... . So our developers are actually building our own thing, different environments to teach English in. **And thinking innovatively about that is thinking, and effectively briefing the tech team with a couple of my colleagues on how we think it should work.** So when the user arrives there, how do we teach them how to use the software, because these people may be in their fifties and may not be familiar with gaming. ... And for that – we can speak to the project manager to get people to help us, but with that, unfortunately, we are the experts on how to do that, because that's what the company has been doing for a long time now, so yeah, **innovative really, when there isn't anyone to ask about how to solve a problem, just doing your best.***

(Karen, humanities and languages graduate, employed in a small education services

company as a marketing associate professional, on innovative thinking as developing new products)

In contrast, Brendon mentioned “*creative ways of spreading messages*,” in relation to advising clients about their business processes, and also in a process that he and his colleagues had come up with when working on a particular project.

*[O]ften we'll have the oversight on giving recommendations around not just how the company should communicate, look and feel, but also **what the business model, or what their products should be, or where they should emphasise things like R&D or what they might want to change.** [...] If you use the term 'innovative thinking' you could push it to mean looking at **creative ways of spreading messages.** Once we were doing a naming project for a [technological product], and we made an algorithm that could spit out names with the same structure, that was pretty weird and out there, but it was the right thing to do.*

(Brendon, humanities and languages graduate, employed in a small advertising company as a marketing associate professional, on innovative thinking as thinking of new work processes, for clients and internally)

Lastly, Ruth emphasised noticing “*unusual*” things and in particular developing her own workflows in a small company. Ruth mentioned that there were no workflows at the specialist recruitment company, which is consistent with other research about the lower incidence / absence of formal processes in small firms (e.g. Storey et al., 2010). That she used her initiative to develop her workflow is again reminiscent of the self-reliant graduate and the SME (Hawkins and Winter, 1996).

*That's just what I do extra [...] **[t]hese are the things that I hear and I go, well, that's unusual, but put it together and propose that we do it this way, and that's innovative thinking.** [...] You know, that kind of thing, trying to develop your own workflow, because there are no workflows already developed here, you have to think about it. And if you're not thinking about it then it won't happen, because **it's not already laid out for you really, in a small company** [emphases added].*

(Ruth, natural sciences graduate, employed in a small recruitment company as a human resources officer, on innovative thinking to develop her own workflow)

### 8.3.2.2 *Creative approach to solving problems*

Another theme, distinct from the theme above, was the ‘creative’ ways of solving problems when participants were facing certain obstacles or constraints. In some ways, this could be viewed as being an application of problem-solving skills. The *Futuretrack* survey did not list problem solving as a skill in the list of eleven specific skills and the interviews did not ask graduates explicitly about problem-solving skills.<sup>160</sup> It is therefore interesting that some graduates associated innovative thinking with problem solving in their responses.<sup>161</sup> Some examples of constraints graduates faced included working within a limited budget, dealing with difficult clients or working in new contexts. The following quote from Amy is typical of this type of creative problem solving response.

*And innovative thinking, I guess I saw it more as thinking about problems in different ways, or more interesting or unusual ways, and that's what advertising is about, a lot of the time, especially for an account planner. It's sort of taking a business problem, and finding a creative solution to it, so how do you get around that business problem, what factors are coming into play, how do you mitigate those factors or make the most of those factors. And I think you do a lot of that in a [humanities and languages] degree, because you construct an argument, and you think of all the different instances and factors that have led up to an historical event, and then you think about the consequences, how that could have been different, or how people could have reflected on it, how it influenced other things. And I think the best kind of work that you do in [the humanities and languages] is always when you've got that interesting innovative argument, when you're able to see something a different way. I think that's why I do my job, probably.*

(Amy, humanities and languages graduate, on innovative thinking as a way of solving problems in unusual ways)

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<sup>160</sup> Problem-solving skills were, however, included in the *Futuretrack* Stage 4 Pilot survey.

<sup>161</sup> This may also mean that there are no consistently shared codes of understanding skills (Holmes, 2000), and that the boundaries between ‘innovative thinking’ and ‘problem solving’ are fluid.

In addition, one interview account explicitly connected research and innovative thinking skills. In Sam's example of using innovative thinking he related it to conducting research and presenting the new findings to his clients.

*Innovative thinking that would be [...] being able to detect new ways of doing things [...] I'm doing a research job, we are constrained, we are finding out facts and reporting to the clients so, research is research, and we won't know what we find until we find it out [...] **you can give suggestions and recommendations to clients that other researchers wouldn't do** [emphasis added].*

**Q: That's interesting, so you think it complements research skills.**

*Oh yeah, I think it's very hard to be in research without thinking outside the box.*

(Sam, social studies and law graduate, employed as a marketing associate professional at a large research company)

### **8.3.2.3 Innovative thinking as communication**

One theme which arose unexpectedly from the interviews was that of using innovative thinking to communicate with clients or colleagues, and particularly to present information in new or interesting ways, e.g. through using infographics.<sup>162</sup> While there is arguably a case for this theme to be a sub-section of developing new products or processes, it merits its own distinct section because of the emphasis on making communication interesting.<sup>163</sup> Presenting data in different ways was linked to the graduates' jobs where working with research and data formed a large part of their daily tasks and responsibilities. The graduates who mentioned this issue were employed as research executives (SOC 2010 unit code 3543), apart from Matt, who was a product manager (3545). Victoria's quote below is typical of responses which mentioned this theme.

*For different topics you were going to get **lots of different sources of information**, you're not necessarily going to find things in the same places every time. And it's **finding new ways of presenting data in your reports, not just using the same old graphics**. Creating infographics is quite difficult, and people don't have time to read*

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<sup>162</sup> There are some similarities between this theme and between using subject/discipline knowledge to create a rapport with clients or colleagues (see Section 8.2.1.2).

<sup>163</sup> It can also be viewed as similar to Sam's quotation about research being linked to innovative thinking.

*now, they'd like to see a nice snazzy picture that precisely explains all these complicated concepts. So there's a lot of that.*

(Victoria, mathematical and computer sciences graduate, employed in a small market research company as a research analyst, on using innovative thinking skills to think of new ways of presenting data)

Tying all these three themes together is the 'creative problem solving process' (Mumford et al., 1997) which incorporates the stages of problem construction, information-gathering, the combination and reorganisation of that information, and the implementation of the solution to the problem. The authors pointed out that not all jobs and not all organisations "place a premium on creative thought" (1997, p. 14) but that creative approaches to solving problems are more likely to be encouraged among employees in "boundary role positions" (p. 8, see also Aldrich and Herker, 1976), which include marketing staff. Thus, this lends an explanation as to why the graduates in this interview sample described innovative thinking and to an extent research skills as linked to the process of solving problems.

## **8.4 Other graduates in the company**

The results in Section 6.4 showed that there was a relationship between business size and whether the job required a degree, with employment in small businesses compared to large businesses having a negative effect on the likelihood of a general or a specific degree being required, even when controlling for occupations, industries and personal characteristics. In the interviews, the graduates were asked a question similar to the following: "In the *Futuretrack* survey, you said that your job did / did not require a general / specific degree. Are there other graduates in the organisation? What do they do? What about non-graduates?"

### **8.4.1 "I don't know anybody without a degree"**

In the interview sample, half of the respondents said that in the organisation in which they worked, their colleagues and most of the other staff had university degrees. For example, "I don't know anybody without a degree" (Amy) was a typical response. There did not seem to be a division between small and large businesses, as illustrated by the quotations below, generally representative of these kinds of responses.

*I think we're all at a similar age at my level, there's a couple of people a bit younger than me, a couple of people a bit older than me, everyone's still in their 20s, graduates. There's quite a few people from abroad, so not all are graduates from British universities, but yeah, everyone who does something similar to me is definitely a graduate at a similar sort of age.*

(Brendon, humanities and languages graduate, employed as a marketing associate professional in a small advertising company)

*Pretty much everyone on my team has got a degree in some form. I'm not sure if the marketing manager has a degree but she has a lot of experience. But everyone who is my age in the business has a degree. There's journalism and sports science, some business, the IT guys have IT... I think if they were recruiting new people they would probably look for someone with more of a marketing or business focused degree. But I didn't come in through the recruitment office, I came in a different way and was quite fortunate to get the role.<sup>164</sup>*

(Dana, interdisciplinary subject including STEM, employed as a marketing and product development executive in a large insurance company)

#### **8.4.2 “A degree is not a requirement”**

Other accounts mentioned that a degree was an advantage, but was not required for the job. These accounts mentioned that there were sometimes non-graduates doing their kind of job in the company. However, according to these accounts, those with degrees tended to outnumber those without. This suggests that even when the graduates thought that a degree was not a requirement it appeared to be the norm. The quotations below are typical of these responses.

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<sup>164</sup> After completing her 3-year degree in interdisciplinary subjects including STEM in 2009 (2.1, medium tariff university), Dana worked at an establishment that was part of a large company in recreational services, continuing the job she had been doing part-time while at university. To get more experience, she did an internal transfer to admin and client-facing roles in the workplace. While in this role, Dana found out about a marketing assistant job at a very large insurance company (1000 or more employees), and was able to get it on the basis of her skills, without having “traditional” marketing experience. In the insurance company, Dana progressed to a marketing and product development executive.

*No, although I think having a degree, especially because my degree is a first, as well, it definitely helped me. But even now a degree is not a requirement. Of the team leaders, three of us have got degrees, but one hasn't, so it's not a requirement really to do the job that I'm doing now. But then again 75 per cent of the people who are doing it have one, so it's an advantage but not a requirement.*

(Chris, humanities and languages graduate, employed as a trainer in a small educational services company at the time of the survey, employed as team leader at the time of the interview)

*Yeah, so they don't specifically point out any degrees. They wanted a degree with a 2.1. [...] It depends on the role. There are some people focused on more technically minded roles in the job, like building online systems, they often have degrees specific for that role. In my department there was not a specific degree required for joining. Interestingly [there are non-graduates doing the kind of work that I do]. I mentioned the girl who just joined. She doesn't actually have a degree, but we interviewed her and decided that she was capable enough to join even though our requirement was a degree. That shows that we're flexible to change the requirement because we thought she was the best candidate. So I would say officially the requirement for most roles is a degree, but I wouldn't say every role does.*

(Sam, social studies and law graduate, employed as a marketing associate professional at a large research company)

In Richard's account, quoted below, he mentioned that those joining the company without a degree would tend to start on a lower level and catch up to the graduate employees' level. Interestingly, although Richard emphasised that the "grad programme" was not called as such because it was "in theory [...] open to everyone," throughout the interview he referred to it as a graduate programme, and mentioned that the majority of people doing his type of job had a degree.

*The grad programme doesn't have any age requirements on it, and it isn't called a grad programme because in theory it's open to everyone. Mostly it's people who come straight out of university but there are a few people who have joined from*

*other walks of life, and it's just because we want to have the most diverse set of people we can joining the agency so we don't just close it off only to graduates. [...] They're generally not at the same level, they'll generally be an account exec if they are my age without a degree. There's not too many of them, about 80 or 90 per cent have a degree. [...] It tends to be the case that if you are on the grad programme you tend to progress a bit quicker anyway. So if you joined as an account exec without a degree, there's a certain mileage that's standard for an exec before you move on to account manager, and then after that it's pretty much a meritocracy.*

(Richard, humanities and languages graduate, employed in a large international advertising company as a marketing associate professional)

#### **8.4.3 “The admin team were all graduates as well”**

Although investigating graduate employment in the administrative occupations did not form a part of this thesis, some of the interviews with the graduates employed in associate professional occupations discussed the administrative staff in the organisation as part of the ‘what do other graduates do’ question. Two main points are noted here. First, in several cases the graduates reported that some or all of the administrative staff had degrees (e.g. *“the admin team were all graduates as well”* (Victoria); *“The admin people were young, somewhere between 19 and 22 [...] They also had degrees”* (Rob); and *“we've got graduates in quite low-level jobs in some ways, the role initially started just as an admin assistant”* (Helen)).

Second, Helen’s interview provided an opportunity to discuss what the graduates employed as administrative assistants were doing, in her employer’s organisation. Helen gave an almost archetypical ‘job upgrading’ account (see Harvey et al., 1997, p. 46-48). The interesting points in Helen’s example are first, that it was both through the *“calibre”* of the graduates and through the employers’ initiative that the administrative assistant role was changed to create a career progression route through the company, which is a combination of employer-led and individual upgrading (Mason, 2002). Second, Helen mentioned that the company, and especially her team, was growing, which opened up opportunities for these ‘admin’ graduates to move into. Business growth and its relations to the interviewed graduates’ career progression is discussed in the next chapter.

*We found that **the calibre of people [graduates] that take on the [admin assistant] job has actually expanded it a bit more and they've made that job more interesting.** [...] I think they started just to do data entry. And when we were interviewing everyone was quite surprised at the calibre of people who were actually applying for the role. And then when they started, they were doing all of that work very quickly, and a lot of them have realised that they find it quite interesting. [...] Quite a lot of them have said, 'Actually, yes, I want to be a buyer,' which is a few levels above where they are now, **but they can see that progression. And it's beneficial for us as a team because we are growing and we know we are going to need more people above, so quite a lot of work is going in to help them develop and learn the skills they need to move on.** And I don't know, but I doubt the company reflects it in pay, from what I know of the company. This is not a very good thing about the company; I think they know they can get away with paying people less sometimes. [...] I think they've changed the job title of the role, it started off as administrative assistant, and it's now been changed to assistant buyer, and then changed the names of a few of the structures. So it's just to make it less of an administrative role, there is still a large chunk of that, but **it's to try and make it clear that the next step up from assistant buyer is junior buyer, and from then you can go buyer, and then buying manager, to try and help people to do that progression through** [emphases added].*

(Helen, natural sciences graduate, employed as a business development analyst at a very large online grocery business)

#### 8.4.4 “They're quite elitist in their hiring”

Some respondents explicitly pointed out that they thought that their employers were targeting elite graduates: those who had attended “top universities” and/or those with good degree results.

*They're quite elitist in their hiring, I think that might have calmed down now, but when I was there they only wanted people who had firsts and only went to the top universities, but that was purely one of the directors. [...] The other directors*

*weren't so fussed about that, especially one of them, she didn't have a degree at all, so she had worked her way up through her experience and being good at her job.*

**Q: Do you think that was to do with creating a reputation for the company?**

*Maybe. I don't know if they thought it was quite a tough subject and you had to be a driven individual, so they only wanted people who achieved the highest grades. I don't know.*

(Susanna, humanities and languages graduate, employed in a small healthcare PR agency as account manager; also Jane and Claire)

However, Susanna described the perils of relying on elite HE credentials when hiring without considering how well the prospective employee could do the job:

*It was kind of obvious when some people came in that they had managed to talk their way and impress [the director who was keen on good degrees], but not the other directors, and then [the new employee] didn't last very long, **because they could talk the talk but they couldn't actually do the job. So that happened quite a lot and led to quite an unstable team** [emphasis added].*

(Susanna)

These findings are to some extent consistent with “competing for ‘the best’” as discussed in Brown and Hesketh (2004, p. 81), although the reasons for why employers were particularly looking for elite graduates were outside the scope of this thesis. It also connects with the theme discussed below, of using a degree as a “proxy” for hard work or for intellectual capability. However, what these findings show is that, based on the graduates’ perceptions, small employers were not averse to hiring graduates, and were among some of the employers looking for the ‘best’ graduates.

#### **8.4.5 Degree “as a proxy for hard work”**

In addition to the graduates who mentioned that their employers were specifically recruiting elite graduates, some mentioned that their employer used a university degree as a proxy or as a minimum requirement. Some of these graduates thought that this was true of employers in general:

*Everyone apart from one person in the company in the team of [10-24 people] is a graduate or had been to university [...] I get the impression now that for any kind of recruitment it's like a checklist that people expect to see a degree, from a reasonably good uni, at least a 2.1 or higher. I think if someone had the right experience we would consider someone who didn't have a degree, but generally it's just expected.*

(Karen, humanities and languages graduate, employed in a small education services company as a marketing manager)

This “checklist” could be viewed as employer ‘screening’ (Stiglitz, 1975) of prospective candidates, and setting a degree as a requirement not because of the contribution of HE to firm productivity, but to ensure a certain type of worker with desirable characteristics. However, like in the ‘elitist hiring’ theme, in some cases the respondents thought that a degree was inappropriate or insufficient as a sorting tool in recruitment:

*The reason our company has been hiring graduates and asking for degrees is that they see it as a proxy for hard work, someone who's at a certain intelligence level. But what we're finding, speaking with the boss in [another country] last week, is that the graduates who haven't done any other kind of work before, they are coming into a small business expecting to be spoon-fed as if it's a large business, and they're expecting higher base salaries without necessarily having the success that we need in order to give them the higher salary. So actually my bosses are beginning to think that maybe in our area we need to look for qualities in a person as opposed to having a degree because they are finding that it sets expectations wrong.*

(Ruth, natural sciences graduate, employed in a small recruitment company as a human resources officer)

These findings contrast with previous research which has tended to agree that small firms are reluctant to hire graduates (e.g., Woods and Dennis, 2009; Martin and Chapman, 2006). A major explanation for this discrepancy is likely to be that the businesses examined here are a type of what may be broadly called ‘professional service firms’ (PSFs, see Von Nordenflycht, 2010), defined by knowledge-intensity (intellectually skilled workers), low

capital intensity, and a professionalised workforce.<sup>165</sup> Some existing research found that SMEs in high level services, such as media and communications and advertising, marketing, and PR, were more likely to hire graduates than those in other industries (Hart and Barratt, 2009; Yorke, 1999). Time may be another reason – the SME research cited here and in other parts of this thesis tended to be from the 1990s and the 2000s. It is possible that through the increase in the number of graduates in the labour market and through initiatives to encourage graduates to seek work in small firms and for small firms to take on graduates (e.g. Westhead et al., 2001), more small firms are keen to hire graduate employees than before. The industry in which the graduates were employed is likely to be the main factor explaining why among the responses employers sought graduates, but no conclusive reason can be drawn.

## 8.5 Skills and knowledge graduates did not have the opportunity to use

The results in Section 6.4 showed that there was no significant association between business size and ‘job appropriateness.’<sup>166</sup> In the interviews, the concept of appropriateness was investigated further with a specific focus on skills and knowledge. The interview respondents were asked: "In the *Futuretrack* survey you agreed / slightly disagreed / disagreed that your job was appropriate for someone with your level of qualification and experience. Are there any skills and knowledge that you have that you would like to use more than you currently do in your job?" Variants of this question in different interviews sometimes asked whether the graduate had any skills or knowledge they would have liked to use and not had the opportunity to use. All but one of the graduates was asked this question.<sup>167</sup> While there was a group of graduates who thought that they did not think that they could be using any more skills or knowledge than they were currently doing, others thought that compared to university their jobs were less intellectually stimulating. These groups of responses are discussed below.

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<sup>165</sup> Von Nordenflycht (2010) suggested that advertising agencies and management consultancies may be called ‘neo-PSFs’ because they met the criteria of knowledge-intensity, low capital intensity but had weakly professionalised workforces. A professionalised workforce, in von Nordenflycht’s terms, was to do with the control and regulation of the knowledge base in the profession, and the professional codes of ethics and norms in the profession.

<sup>166</sup> “On a scale of 1 to 7, where 1 means ‘ideal’ and 7 means ‘very inappropriate,’ how appropriate do you think your current job is for someone with your skills and qualifications?”

<sup>167</sup> Susanna was not asked owing to time constraints during the interview.

### 8.5.1 “I don’t think so”

Six graduates reported that they thought they didn't think that they could be using any more skills or knowledge at their work. However, the reasons behind their statements were different. For several people, either they could not think of anything they could be using more (e.g. *“I don't think so. I generally have been quite proactive”* (Victoria), also Amy, Anna), or they felt satisfied using their current skill set (Alex, Brendon). However, it should be noted that Brendon thought that it would be difficult to find a job where one could make the most of the knowledge gained through his degree without doing a specialist job which was, in his opinion, directly making use of his degree skills or knowledge: *“If you do philosophy or a predominantly philosophy degree I don't know if you can really hope for much more than the use I get out of it now unless you become a philosopher.”*

Ruth mentioned another reason for being satisfied with using her current skill set. She wanted to pursue her interests and skills as a geologist in her spare time rather than at work: *“I'd quite like my job to be my job, and to have space to do my own research and things in whatever subject I fancy outside of work.”* This answer raises an interesting point about whether one can use 'too many' skills in work, and connects to wider issues related to skill utilisation, such as work engagement literature. If skill utilisation is viewed as being linearly related to outcomes such as job satisfaction, it follows that employees should be able to make use of *all* their skills and experience. However, this assumption overlooks the fact that some people may prefer to keep some of their skills (in a broad sense) away from work to be used in their spare time. Such ‘over-utilisation’ may be viewed as similar to ‘over-engagement,’ in which too much engagement can lead to an increased incidence of working overtime, interference with work-life balance, and burnout (the “dark side of engagement” (Bakker et al., 2011, pp. 17-18)).

Having stated the caveat that some graduates did not consider using all of their skills at work as a desirable state of affairs, and having explained that some graduates did not think that there were any skills they could be using more of in their work, other graduates did name some things which they would have liked to use more at work. While some of the responses included specific examples, such as: having more creative input, developing business skills, team work, and presentation skills, and pursuing specific interests, one

theme, having the opportunity to encounter 'intellectual challenges' was shared by a number of graduates. Six respondents mentioned the "intellectual side of things" – this term included analytical skills, critical thinking, research and degree knowledge (Julia, Claire, Dana, Jane, Helen, Bryony), described below.

### 8.5.2 "The intellectual side of things"

The common trend running through these responses was that the graduates enjoyed the kind of intellectual stimulation they were exposed to at university, and could get bored doing routine work that did not give them room to think. Claire, for example, mentioned her psychology knowledge. Earlier in the interview she stated that the job she applied for specifically asked for a psychology degree to ensure that employees were committed to the subject. However, Claire thought that in practice, the job did not actually draw on her knowledge of psychology "properly" in a way that she expected: "*All of my colleagues and I on my team all had a passion for psychology, and we never had enough time to properly draw on it in our designs.*"

Julia gave another example, referring to the ability to exercise critical evaluation on advertising products:

*I was not using the knowledge I learnt, and that I **wasn't really practising the intellectual side of things there** [...] I actually wanted to do a masters after I graduated, but I wasn't able to get funding for it, so I was keen to continue at least a little bit in academia when I graduated, so I suppose that might be what I was referring to. [...] I suppose my thing at the [employer] was that they're obviously pro-advertising and are not particularly critical, and so I suppose **those critical skills that you develop at university, and being able to criticise an idea or a piece of work was more difficult to do there because I was limited as to what I was able to criticise** [emphases added].*

(Julia, humanities and languages graduate, employed as a junior research executive at a small trade association)

However, others mentioned that they doubted that they would have enjoyed their job if they had to do the kinds of intellectual challenges they did at university all the time, for instance, Jane:

*[A]ctually, I don't think I would enjoy my job if I was always challenged like that [academically] all the time [emphasis added], you've done that through school, and you've got a good grounding of things, [...] there are some skills that are for academia, and I think the skills I like to use most [are] my people skills and conversational skills, and managing people and managing projects, [...] you don't get taught good project management at school, but I'd much rather be exerting those skills rather than being successful at solving a mathematical problem from day to day [...]. I learnt effective ways to argue a question in terms of the science, building up who said this and that for the supporting argument, but I don't miss doing those kind of skills and I think the skills that are, that we spoke about earlier, the more transferable kind of skills, are more the ones I want to be using on a day-to-day basis.*

(Jane, natural sciences graduate, employed as a research executive at a small market research company)

This view connected with Ruth's position discussed earlier, on keeping work and other interests separate (see Section 8.5.1). The qualitative results discussed here are broadly consistent with existing research on graduates' perceptions of their early career. The graduates in this interview sample who said that they missed intellectual challenges may be viewed as consistent with other research which found that early career graduates tend to experience less skill use, but more autonomy than they expected (e.g. Arnold and Mackenzie Davey, 1992). Unmet expectations, for example limited opportunity to conduct challenging work, could be viewed as violated *psychological contracts* (individuals' beliefs regarding the terms and conditions of a reciprocal exchange agreement between them and another party) could be associated with intention to leave the current employer and actual employment turnover (Robinson and Rousseau, 1994).

## 8.6 Discussion

This chapter explored the dimensions of skill utilisation used in the *Futuretrack* survey analysis in Chapter 5 in a qualitative way, focusing on the graduates' meanings and experiences. The findings suggest that for these predominantly elite graduates, employed in business and public service associate professional occupations at the time of the *Futuretrack* survey, there was no perceptible difference between employer size and the utilisation of their HE-acquired degree skills or degree knowledge, nor between business size and research or innovative thinking skills, nor between whether a degree was required for the job (indeed, several of the small companies were reportedly elitist in their hiring), nor between any skills or knowledge that the graduates did not have the opportunity to use. These results broadly support the quantitative analysis in Chapter 5. This finding notwithstanding, there were interesting differences between the accounts regarding the meanings of the above concepts.

The interviewed graduates expressed different definitions of subject knowledge, such as using it to understand processes, or using background knowledge indirectly in their work; using their knowledge to communicate with clients to build up a rapport or to “unlock” new ideas, as well as the substantive content of the course (i.e. the lecture content, etc.). In contrast, degree skills were usually defined as being practically orientated, often supplemented with examples of skills such as writing, research, presentation and formulating arguments. A subset of graduates explicitly defined degree skills as being non-subject-specific. In addition, there was some overlap between the definitions of skills and knowledge developed during undergraduate degrees regarding the “methodical process” to approaching problems, which suggests that the difference between skills and knowledge was ambiguous, and relates to the discussion about conceptualising skills and knowledge in Section 2.4.2.

While there was no obvious difference between the ways in which graduates conceptualised using degree skills or degree knowledge by business size, there did seem to be a link between those graduates who defined their degree knowledge in broader terms than just the degree subject content and reporting that they used their degree knowledge at work. Other research has found that where generic attributes (similar to the ‘skills’ listed in the *Futuretrack* survey) were viewed as “integral to the disciplinary content and culture,”

they tended to be deliberately and systematically taught (Jones, 2009, p. 188). However, across university education in general the generic attributes have tended to be “de-disciplined” (2009, p. 186) and separated from the discipline knowledge. This insight sheds light on the responses of graduates who viewed their degree skills as not subject-specific, and on the responses which defined degree knowledge and skills in a similar way, and viewed their skills as intrinsically linked to their degree knowledge.

Similarly, there was no obvious difference between graduates’ definitions of research skills and innovative thinking skills and business size. However, analysis of the accounts given by the graduates provided a fuller understanding of their perceptions of these skills with respect to their jobs. Research skills meant not only finding out facts, but also processing information to “pick out what’s important,” and learning new skills or processes independently. Innovative thinking skills were frequently defined as developing new products, processes or new ideas, but were also defined as having a creative approach to solving problems, and creative or novel ways of communicating or presenting data. Some accounts identified a link between research and innovative thinking skills relating to problem solving. Examining these definitions gave a more detailed understanding of how these graduates used these skills at work, and provided examples of the “creative problem solving process” (Mumford et al., 1997).

The above two main results show that there was a plurality of views among the graduates about what they considered to be degree knowledge and degree skills, and research and innovative thinking skills. The lack of clear consensus view about the meanings of these attributes is consistent with other research investigating the meanings of graduate attributes (e.g. Barrie, 2006) and the notion of skills in general (Holmes, 2000). One question arising from these findings is whether the graduates’ different understandings of degree skills and knowledge affected their job performance. This question is not investigated here and is a subject for further research.

The majority of interviewed graduates said that a degree had been required or, if it was not technically required, it was the norm in their employer’s organisation and non-graduates in their kinds of jobs were a minority. Often it was reported that even the administrative positions were filled by graduates, although in one case (Helen) the employers were able to

introduce a career progression route for such graduates employed in “low-level” jobs. In several cases, it also emerged that the graduates thought that their employers were deliberately elitist in their hiring practises, only looking to hire graduates from the top universities and/or with the highest grades; in other cases employers were reportedly using a degree as a proxy for desirable characteristics. However, in two cases (Ruth and Susanna), graduates explicitly stated that using a degree, even an elite degree, to screen out applicants did not result in recruiting the best people for the company. The emphasis on university degrees, and especially elite ones is consistent both with a screening hypothesis (Stiglitz, 1975) and with the “war for talent” (Brown and Lauder, 2004), but could also be viewed as a response to an increase in the number of graduates applying for jobs, particularly during the economic recession. It should also be emphasised that small firms in the high-level services industries, such as the graduates’ employers in this interview sample, are and have been more likely to employ graduates than small firms in other industries (e.g. Hart and Barratt, 2009), and are unlikely to be representative of small firms in other industries in this respect.

There was also no difference between the skills and knowledge that graduates did not have the opportunity to use and business size. However, one main theme arising from the interviews was that some graduates considered that they were not being challenged in an intellectual way as they had been at university. While these graduates appreciated that it would not be appropriate to engage in such intellectual work on a daily basis, the implications were that they could get bored if their job was not challenging them enough. Whether this perception exists across the graduate cohort as a whole or whether it is predominantly expressed among elite graduates was not investigated in this thesis and is an issue for further research. Existing research has found that graduates tend to report less skill utilisation in their early careers than they expect (e.g. Arnold and Mackenzie Davey, 1992) or have inflated expectations of the kind of work that they think they will find in the transition from university to employment (e.g. Perrone and Vickers, 2003). However, it is unclear to what extent these findings apply to the sample of elite graduates interviewed, who were generally employed in “communicator” graduate jobs and had been in the labour market for at least two years after graduation (the interviews took place over 2013 and 2014, see Section 3.5.4.4).

Lastly, with respect to the three graduates whose jobs were classified as non-graduate using the SOC(HE) 2010 classification (Jess, Chris and Claire), based on their responses to the interview questions above, there is little reason to class them as non-graduate jobs. Part of the reason may be related to the fact that the graduates completed the survey responses two or three years before the interview, and so were evaluating their jobs from a more junior position compared to their positions at the time of the interviews.<sup>168</sup> Another reason may be to do with the job titles that the graduates gave and the Cascot coding process. Job titles such as ‘vocational instructor’ and ‘trainer’ may encompass a wide range of responsibilities and demands for knowledge and skills depending on the business of the employer and the industry in which the company operates. This is worth bearing in mind when conducting future research.

The following chapter investigates graduates’ experiences of work that were not captured in the *Futuretrack* survey. In particular, it considers how graduates made use of or created opportunities for developing their jobs by taking on additional responsibilities, how graduates experienced promotion, and how they thought their experience of work affected their career development. While this chapter did not find business size differences between graduates’ accounts, the next chapter shows that business size, together with other factors, can affect graduates’ experiences of work.

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<sup>168</sup> At the time of the interviews two to three years had passed since the survey was carried out, and the respondents were speaking as had more experienced employees with hindsight about their previous jobs.

## 9 Career development in small and large businesses

### 9.1 Introduction

This chapter presents the interview findings about the elite graduates' perceptions of their career development. While the quantitative analysis in Section 5.3.5 gave only a very limited insight into *Futuretrack* graduates' views of career development, the interviews provided an opportunity to ask graduates about their experiences in detail. The interviews focused specifically on graduates' experiences of work after graduation.<sup>169</sup> The question about respondents' views of career development was asked broadly, and no explanation of the term 'career development' was given to the respondents.

As discussed earlier, career development can be broadly understood as the process by which individuals manage progression in learning and work (adapted from Watts, 2004), which also includes individuals' experiences of work. Graduates' career development as defined in this thesis includes aspects such as: increasing levels of responsibility and promotions, or a change in the range of activities within a company, as well as going to work in a different company or taking on a different role in a different industry sector. This broad conceptualisation emphasises the role of the individual and the role of the organisation in the shaping of career development (Baruch, 2006) and connects to literature about non-traditional career paths, such as boundaryless careers (Arthur and Rousseau, 1996) and career adaptability (Bimrose et al., 2011; Savickas, 1997).

This chapter investigates this broad area of work experience through focusing on the following questions:

- How, if at all, did the graduates' perceptions of opportunities for taking on additional responsibility and taking initiative for developing their own job role differ between those employed in small and in large businesses? (Section 9.2)
- Which organisational contexts facilitated or impeded graduates taking on additional responsibilities? (Section 9.3)
- Which graduates changed jobs and why? What did graduates think about the effect their experience of work had had on their career development? (Section 9.4) How, if at all, did this vary between those employed in small and in large businesses? (Section 9.5)

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<sup>169</sup> Respondents sometimes mentioned other issues, such as work placements or childhood aspirations, in the course of the interviews, but these did not form the focus of the study.

The main findings are discussed in Section 9.6.

## 9.2 Taking on additional responsibilities...

The graduates were asked about their perceptions of opportunities available at their employers for taking on responsibilities at work. At first glance it seemed that all graduates were able to take on responsibilities in addition to their main job. However, on closer inspection, what emerged was a possible distinction between graduates who *took* opportunities and those who *made* opportunities to take on additional responsibilities. This does not mean that the graduates who *took* opportunities were doing so passively. In fact, most of the respondents described how they actively shaped their jobs and developed their roles in the company: for example, *“So [the job] wasn’t well defined, but also through the opportunities I got, I made it my own anyway”* (Matt). However, graduates who *made* opportunities tended to emphasise that they themselves arranged to take on additional responsibility. Examples of taking and making opportunities are discussed in Sections 9.2.1 - 9.2.3 below. Taking and making opportunities can be viewed as graduates’ strategies for developing their careers in the post-hierarchical organisational career progression in an organisational context (e.g. Baruch, 2006): factors facilitating and impeding graduates’ career development are discussed in Section 9.3.

### 9.2.1 Taking opportunities

In the case of *taking* opportunities, the graduates were encouraged by their employers to take on additional responsibility, go on training courses, develop their skills and build up their experience. In the interviews, this theme came through in such expressions as: ‘We were encouraged to’ / ‘They gave me responsibility.’ For example: *“Because I was in such a small team, I got given quite a lot of responsibility”* (Julia, junior research executive at a small trade association), *“Each time they gave me more responsibility I stepped up to the challenge”* (Susanna, account manager at small PR agency).

Richard’s example shows how his employer, a large advertising company, encouraged the graduates on their graduate programme to take on additional responsibilities: *“[T]hey give you the facilities to do what you want to do if you want to take it on. [...] There’s a lot of [...] side projects that people are encouraged to take on and run with.”* One of his side projects was running a part of the company’s graduate programme, which he said he chose to do because a friend at a more advanced stage on the graduate programme suggested that it

would be a good experience of the recruitment process and project management: *“In general it's just really good experience for practising things that you will be doing much later in your career, doing them at an early stage and proving you can do them, [...] and demonstrating that you can progress quickly.”*

Victoria's example also illustrates how she was encouraged to *take* opportunities. She compared her experience of working as a research analyst in a small research company and in a large research company doing a very similar kind of job. Victoria thought that the large company actively pointed out opportunities for staff development, which the small company did not do. She thought that it might have been beneficial for such opportunities to have been emphasised at the small research company.

*I work as a research analyst now but for a much bigger firm, and my competencies are broadly similar. [...] **At the [large] company I work for now, we're all very encouraged to be aware of any opportunities where we might have failed needs and that really wasn't emphasised at my previous employers** [emphasis added]. And I think perhaps being more interested or more aware of who our potential clients were might have given us more of an edge in actually writing the reports.* (Victoria, on the difference between the approach to staff development between her old (small) and new (large) employers)

In particular, Victoria mentioned that at the large research company, there was more focus on training: *“If I want to have training on social media usage, then I can go and do that if I want to.”* At the small research company training was more limited and *“ad hoc”*: *“[The training] was literally being given an old report and told, ‘Have [a go] at it, show it to your manager when you finish the chapter.’”* These comparative examples showing differences in training are consistent with other SME research (e.g. Kotey and Folker, 2007; Belfield, 1999) which generally found that the extent of training opportunities was lower in small firms than in large companies. However, in this sample, some graduates employed in small businesses did point out that they thought that the training and support was good, and their experiences add to understanding of the complexity of size dynamics. For example, Susanna (account manager, small PR company) had access to *“a lot”* of internal training and a budget for external training. She said that the company directors thought it was important to train staff. She thought the internal training sessions run by the directors

themselves were useful because the directors had a lot of experience in the area: "They knew what they were talking about."

Rob also emphasised the role of the company in helping him take opportunities to develop his job. Rob's quotation below describes his experience of working as a at a large media agency as a paid social media manager. His previous jobs were all in much smaller companies (medium-sized, but owned by larger parent companies), and in his experience, he did not have so many opportunities to take on such levels of responsibility in the smaller companies as he did in the large company.<sup>170</sup>

*What I have seen continually is that small businesses fold, that they are unable to address the market, to adapt quick enough [...] or recognise the younger talent. [...] Whereas at this current large company, they absolutely recognised it – when I asked for a pay rise they gave me one. When I asked for more responsibility they gave me it. Actually I didn't ask for more responsibility, it just kind of came, it happened that way, but if I did ask for it they'd give it to me. **They've constantly pushed me, and as a result I've grown.***

(Rob, on developing his job as a paid social media manager at a large media agency and comparing his experience to his work in smaller companies)

While Rob's example is consistent with other research which reported that large companies can have more financial and other benefits for employees, and also with the results of the *Futuretrack* survey discussed in Chapter 4, other graduates who described how they developed their jobs in small businesses, presented in this chapter, show that this distinction does not always hold in practice. From the accounts, no clear associations could be identified between the ability to *take* opportunities to take on additional responsibilities and the size of the business. However, the accounts emphasised the encouragement of the employer for employees to take opportunities. The contexts conducive to taking opportunities are discussed in Section 9.3.

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<sup>170</sup> Part of Rob's experience of witnessing small businesses "fold" could be related to the economic recession. Small firms may be particularly vulnerable to economic downturns, although the evidence for this has been mixed (e.g. Smallbone et al., 2012).

### 9.2.2 Making opportunities

On the other hand, graduates' accounts of taking on additional responsibilities without being explicitly encouraged to do so by their employers could be described as *making* opportunities. These graduates talked about developing their role as the business grew, inventing job titles, designing their own work processes, and so on, using active language, such as: *"I have also taken on other roles"* (Jess, relocation consultant at a small relocation agency), or *"I've got involved with different areas of the business"* (Karen, marketing manager at a small educational services company), or *"my role can be whatever I want it to be"* (Anna, current job as sales and marketing manager at a small food retail company).<sup>171</sup>

*Making* opportunities was particularly clearly articulated in Ruth's account. Ruth worked as a recruitment consultant in a small recruitment agency and thought that in a small company, employees were almost obliged to be imaginative, see ways in which things could be improved, and spot opportunities for developing their own roles. Ruth described how, through her own initiative and changes she had made to the job, the managers rewrote her job specification. As a recruitment consultant, Ruth's main responsibilities were in the *"office supporting role"*: she made sales calls to candidates seeking jobs and forwarded their CVs onto her agency's clients. She said that although she could have done her standard role, she used her initiative to develop her job:

*[T]hat's one of the things about why I am interested in talking to you about this – in a small company you can do as much as you want or at least as much as you are capable of. So I have since [starting the job] been involved in training other staff, [...] I got involved in our system upgrades and recommendations for how to improve the computer system that we use. I'm not management, I've only been in the company a couple of years and I'm quite a new graduate, but the management do rely on me in certain ways like that [...] they actually rewrote the job specification [of my basic job] for researcher after I'd been in it for a year based on the way that I was doing it, because it was working. [...] Is it easy to do these things? [...] It's easy if you see the way to do it and then try and find your own solutions and propose your own solutions I think the managers are quite grateful and responsive to that [emphases added].*

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<sup>171</sup> See also Ruth, Helen, Susanna, and Chris. Note that Anna's experience of work at the employer she was with at the time of the *Futuretrack* survey did not include the possibility of *making* opportunities, see Section 9.3.4.

(Ruth, on developing her job as recruitment consultant in a small specialist recruitment agency)

In the example above, Ruth mentioned that the managers accommodated and welcomed her initiative and rewrote the job specification. Ruth explained that when she was hired as recruitment consultant, she focused on the work and developed her own workflows which then became part of staff training. Her job description was updated to include new skills, and Ruth herself became involved in training new employees at the company using her own workflows:

*[The managers] just sharpened focus a little bit. [...] I specialised and focused and developed my own workflows, and these sorts of workflows are what people are being trained on now, so it's kind of come into the job, to follow these workflows, that's part of the training. They've also added in skills in the job spec[ification]. Skills like tenacity and imagination, they weren't really there before but they see them as valuable now.*

(Ruth, on how her recruitment consultant job description changed as a result of her initiative in a small specialist recruitment agency)

In the interview Ruth said that she had the opportunity to stay in the company and continue with the training aspect of her job.<sup>172</sup>

*What [the managers] were talking about for me was an international trainer developer. I've already been to [another country] to train the guys there, the company is hopeful about growth and about opening up other international offices, so it would be something along the lines of me developing a training course and training people that come in, passing some of my responsibility as researcher onto someone more junior.*

(Ruth, on the potential to carry on in the role she developed in the small specialist recruitment agency)

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<sup>172</sup> However, owing to external circumstances Ruth was planning to leave the company: her long-term partner lived abroad and she was planning to move there. Otherwise, Ruth would have stayed in her company for a long time: "I could quite happily work here forever, because I enjoy it and it's challenging in a lot of the right ways for me."

Jess's account gives another example of growing a job. She started working at the small relocation agency as an administrative assistant on a temporary contract.<sup>173</sup> Her main responsibilities at that point were *“answer[ing] the switchboard, search[ing] for information, generally do[ing] what administrative assistants do.”* Two months into her job, Jess started to interact with clients and was *“gradually trained as relocation consultant,”* becoming a permanent employee six months after starting at the company. As relocation consultant her main tasks were assisting multinational companies' staff with moving for work purposes: *“I look for properties, do the negotiations, plan the itinerary, [...] the coordination of their visits as well as everything after that [...] so that it coincides at one time when they get the keys to the property.”* However, in addition to that, Jess took over other tasks: *“I have also taken on other roles, I've taken on a lot of administrative tasks, I've continued to be in switchboard, and also shortly after that I also took on the responsibility of organising the invoicing for the office.”*

Jess used her job title of relocation consultant in general business affairs, but her formal title in the contract remained unchanged: *“My contract is, I think, still written as administrative assistant [...] In all the emails I am considered as a relocation consultant and a senior one at that [emphasis in original] with the responsibility I have with the global relocation company.”* This type of experience has been observed in other studies (Hall and Rabinowitz, 1988; Feldman and Brett, 1983).

Jess explained that although she was using her degree knowledge and skills at her job, as a consequence of being labelled an administrative assistant, her contract stated that she had a qualification equivalent to an A-level rather than a degree. When she raised this with the person responsible for HR she was told that it *“didn't matter.”* However, Jess later found out that it had implications for the company's taxes: *“It's their way of paying less social security contributions on my behalf.”* While some other graduates also reported a mismatch between their job title and job content, Jess was the only one who suggested that there was a particular rationale behind this. Dana mentioned a similar job title-job content mismatch: *“My job title now is a marketing and product development executive, however that's not really what I do. I changed it to digital marketing although technically on my actual job description it's not, although that's what I do. I pretty much just work in digital marketing, I don't do much product development. I did when I first started, but my*

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<sup>173</sup> The relocation agency was based in a European country.

*role within the company has changed since I've been there.*" She thought that her employers were "quite lax" about internal administration and did not mind her changing her job title.

As Jess continued to gain experience she received increasing levels of responsibility in the company: "I would say I have second-most responsibility in the office – not counting the manager, there's the line manager and then there's me," and became a 'go-to' person: "Everyone comes to me when they have problems [...] especially when our manager isn't there." She thought that partly as a result of her input she not only developed her own job, but also contributed to the company's performance:

*[W]e're winning awards for the relocation work that we do, and that is partly my input as well, not that I'm going to blow my own trumpet, and we have grown to be a respected company in the region. It is a small company but it has been growing a lot despite the financial crisis [...] and I have been of the local office here, and that shows. So I suppose young graduates who are enthusiastic and are ready to work hard, can drive, along with a good manager, a small business like that.*

(Jess, reflecting on her contribution to the relocation agency)

Jess's experience of developing her administrative assistant job to become a relocation consultant can be compared with Helen's account of the graduates at her employer's company working as administrative assistants and upgrading their jobs (see Section 8.4.3). However, as will be discussed in Section 9.4, although Jess was able to develop her job, she also found the work stressful and was thinking about changing jobs.<sup>174</sup>

Both Ruth's and Jess's examples of developing their jobs can be compared to existing studies of job upgrading. For example, Harvey et al.'s (1997) study cited a quotation of a

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<sup>174</sup> Stress was an important theme that was emphasised in some accounts. In Jess's and in Anna's case it was part of the reason they changed or were about to change jobs. Jess mentioned that she was recently ill because of the stress of the job, Anna also emphasised that at the small market research company she had too much to do, and was working weekends and long hours to keep up with the work that she thought was not her responsibility. Other graduates also pointed out that they were working long hours (e.g. Bryony, Karen) but did not raise the issue of stress as a deterrent to working in the companies. However, the incidence of stress was not a main research question in this thesis. It does connect to the broader issue of over-utilisation of skill (discussed in Section 8.5.1), and could be investigated further, for example using the job demands-resources model (Bakker and Demerouti, 2007).

graduate ‘growing’ an administrative assistant job that highlights similar points to Ruth and Jess.<sup>175</sup>

### 9.2.3 Taking and making opportunities

The distinction between taking and making opportunities was not always clear-cut. For example, at the time of the *Futuretrack* survey, Matt was working in an educational services company as a product manager, but he first started at the company on a temping job developing software for one of the company’s operations, and was later made permanent as IT operations manager, and then became a product manager – doing a completely different role: “I suppose what I did was start to get more interested in all parts of the business, and that kind of led to me to become part of the management team.” The process through which Matt became product manager was partly through help and encouragement from his managers and mentors, but on the other hand, Matt also managed his own career development through seeking out opportunities to move into a more management-orientated role, as shown in his quotation below:

*My first boss was pushing me to become more senior in IT, he saw my potential there in my technical side [...and got me involved in doing an IT strategy review at the parent company level, but ...] I was worried about being too IT orientated. I love programming and I'm a solid software developer, but I thought I had the opportunity to move into something a bit broader, a bit more business management focused. So I was a bit reluctant to do that and then [... my] current boss got the job, and he'd come from a product management background and he basically said, "I don't see you in the role of IT operations manager, you're going forwards, I understand that there are some responsibilities left with that job, you have got somebody who can take some more of that on, but what we do need in this business is a product manager, and from what I've seen and from your understanding of the wider business and what you'd like to get involved in this is something for you."*

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<sup>175</sup> E.g. “It’s only an administrative assistant job, it’s like a clerical assistant really. It’s a lot of photocopying and that’s quite frustrating. But I have made the job my own. I have got involved with things that were not in the job description just because I found the job as it stood quite boring [...] I’ve taken over writing the bulletin which was something I wouldn’t have been given if I’d just been an admin. assistant without a university background.” (07C: executive officer, regional arts board) (Harvey et al., 1997, p. 48).

(Matt, employed as a business development manager in a company providing education services (small business unit owned by large parent))

In addition, Matt described how he made his IT operations manager job his own, by finding ways of making improvements, similar to Ruth's example in Section 9.2.2. Both Ruth and Matt said that in addition to finding ways in which things could be improved, the managers in the companies were supportive of their ideas.<sup>176</sup>

*It was wherever I felt there was a need for improvement. One of the earlier things I did was to take a closer look at [...] the process of taking enquiries through our website, [...] I realised [from the experience of my first job as software developer] there were ways we could improve the process, monitor better reports, use IT to improve the way we do business. And **it was just being able to do that and having a senior management team where you could say, "Look, let's make some improvements here."** And nobody was reticent about you looking through their processes and the way they operate their teams, they were happy about that kind of improvement, [emphasis added] so it was a case of finding out where I could be useful and making myself useful there. That's pretty much how I operate [now], that's pretty much my role as general manager.*

(Matt)

Similarly, in Bryony's case, although there was some monitoring and support provided by the company at the start of her role: *"they train you up [...] you're never leading stuff,"* she was able to take initiative and grow her job as the business grew. However, Bryony emphasised that self-promotion was important and that shyer colleagues found it difficult to work in such an environment: *"There are people I've worked with who are quite shy, and I think that really works against you, it's not a good environment for a shy person, you need to be very bold."* Self-promotion, alongside high flexibility, leadership motivation, and other attributes, has been found to be associated with graduates' post-traditional career orientations (Mayrhofer et al., 2005). This further connects with the post-organisational career management and career adaptability, and with self-reliance, not only in SMEs (Hawkins and Winter, 1996) but in the labour market as a whole (Schein, 1996).

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<sup>176</sup> See Section 9.3.1 for examples where such support was lacking.

*[Y]ou almost have to choose a skill and be good at it in our company, [...] and that becomes your niche. [...] Particularly if you show that you are reading around a topic or researching it online, and you're [...] sharing emails when you [come across interesting things], that is how you know there is a difference, **by carving yourself a niche**. The youth job that I've got now, because I spent so much time looking into youth stuff, trying to work on youth projects, talking to and telling people that this is what I wanted to do, **it's very self-starting and there is a big element of self-promotion [...] you can in a way use your interests to grow your own job** [emphases added].*

(Bryony, employed as a research executive and currently as a strategist in a small social research company)

Graduates' accounts of taking, but especially making opportunities to take on additional responsibilities can be viewed as a way of 'upgrading' or 'growing the job' (Purcell et al., 2004; G. Mason, 2002; Harvey et al., 1997), where either through employers changing the job design and/or through employees taking on additional responsibilities through their own initiatives the nature of the job changes to become more complex.<sup>177</sup> This concept overlaps with the 'job crafting' construct in organisational psychology, in which employees (pro)actively change the boundaries that define their jobs (Wrzesniewski et al., 2013; Wrzesniewski and Dutton, 2001).<sup>178</sup> However, one of the limitations to the job crafting construct was the lack of emphasis on the organisational context. This limitation has since been partly addressed through exploring how organisational context constrains or facilitates employees' job crafting (Berg et al., 2010) and by integrating job crafting into the job demands-resources (JDR) model (Tims et al., 2012; Bakker and Demerouti, 2007). However, little has been done on the labour market outcomes of job crafting outside the organisational psychology literature. Existing qualitative research on 'growing' the job, however, explicitly highlights the joint role of graduates' initiative and the organisational

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<sup>177</sup> See also Helen's description of job upgrading for graduates in administrative-level work in her employer (Section 8.4.3). Alternatively and/or concurrently, taking on additional responsibilities within the graduates' current employers can be viewed as a way of increasing *external* employability (King, 2003, p. 15) – which was particularly found to be the case for graduates at the early stage of their careers. This point relates to the discussion in Section 9.5 regarding those graduates who had changed employers.

<sup>178</sup> Particularly as "task crafting," where employees pick and drop the tasks they do, adjust the time they spend on tasks, and redesign aspects of tasks, for example through learning new technologies or methods (Wrzesniewski et al., 2013, p. 283). See also Kulik et al. (1987) for job design changes through employee- and/or employer-led initiatives to improve person-environment fit for similar ideas.

culture: “Growing the job’ requires a willingness and confidence on the part of the graduate to develop the allocated role *as well as a desire by managers to see the role grow and to facilitate and encourage the process* [emphasis added]” (Harvey et al., 1997, p. 47). The interaction between the organisational context and graduates taking on additional responsibilities is discussed below.

### 9.3 ...In an organisational context

From the accounts discussed above, graduates who talked about taking opportunities also tended to emphasise work environments conducive to career development in the companies, either formal, such as a graduate development programme, or informal, such as the company managers encouraging employee development, which facilitated such opportunities, e.g.: “*there’s certainly the opportunity and almost the expectation to develop things*” (Alex).<sup>179</sup> The following Sections discuss other aspects of the environment that can affect graduates’ ability to take on additional responsibilities.

#### 9.3.1 Freedom to make suggestions

One aspect, particularly highlighted in Ruth’s, Matt’s and Bryony’s examples of developing their jobs discussed above, was that managers were responsive and welcomed the graduates’ ideas, (see also Jess, Karen, Susanna’s cases, among others). In contrast, Jane’s example describes one of the reasons impeding taking (or, indeed making) opportunities: that a company was “*set in its ways.*”

##### 9.3.1.1 “Set in its ways”

Jane was working as a research executive in a small market research company with two directors, one of whom had a “*hands off*” management style while had a specific way of doing things that employees had to learn: “[it was] *his way or the highway.*” Jane explained that over time she learnt to write reports and other documents in the director’s preferred style. Her quotation below shows her perception of this limited her ability to take on opportunities, compared to her experience at her new, larger, employer.

*I feel I have more room to be creative at my new [large] company. [The small company] was quite set in its ways, it knew what its clients liked in terms of what its*

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<sup>179</sup> Alex worked as a HR analyst in a large manufacturing company on a graduate scheme, and thought that while employees had discretion over which additional responsibilities they took on and how they developed them, the company culture actively encouraged this kind of attitude.

*successes were, and it didn't really push for innovative stuff, it was more like: "We know what works well, we know what's going to get the business, so we're just going to keep doing that." [...] [B]y the end of my time [at the small company] I used to get very few amendments to my work but it would literally be because I had adopted [the director's] style rather than putting my own stamp on things.* (Jane, on her experience in a small market research company as a research executive compared to her new employer doing the same kind of work)

The director expressing a preferred style for the type of work did not always prevent graduates from taking on additional responsibilities. For example, Susanna, talking about her experience as an account manager at a small PR agency, also stated that one of her company's founders insisted that *"work should be done her way or no way"* and that *"quite a few people 'got their heads cut off' for not doing things."* Susanna learnt to work to her director's specifications because she had no previous employment experience: *"I was so 'green' that I just did everything the way she wanted it and the way she told me to."* But, Susanna was also able to make opportunities in the PR agency because there was a climate conducive to making suggestions: *"If someone had an idea about how to improve something then everyone wanted to hear it."* Similarly, Sam also raised this point: *"There is definitely a culture [at the company] that encourages people to speak up if they feel something can be done differently."* However, some graduates thought that their employers were open to employees making suggestions emphasised that the freedom to make suggestions did not necessarily lead to the company implementing them.<sup>180</sup>

### 9.3.1.2 A lack of slack

Another reason that prevented graduates from making suggestions was a high volume of work coupled with few staff. For example, Victoria explained how, as a research analyst at a small market research company, there was a set amount of work that the company needed to get through, but only a few research analysts to do it, which left very little time for diverging from the company's core work.<sup>181</sup> At her new job in a large market research

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<sup>180</sup> E.g. Claire: *"We had strategy days [...] where we discussed changes we wanted to make in the business, but nothing really came out of them. So we talked [...] came up with all these brilliant ideas, but then none of them really got implemented."* She thought that the managers wanted to convey a sense of openness and approachability, but in practice were not receptive to suggestions.

<sup>181</sup> In particular, the number of analysts decreased over the time that Victoria was working there. According to Victoria, part of the reason for staff leaving the company was the employment relations with the manager, who: *"if he got annoyed he would shout, he would ask unreasonable*

company, making suggestions was encouraged, but there were many more analysts: “*there are maybe 50 of us on our floor.*” This finding relates to the concept of organisational slack, particularly how spare resources in the company can facilitate innovation (e.g. Nohria and Gulati, 1996; Rosner, 1968).<sup>182</sup>

*There wasn't a lot of opportunity [at the small company] for putting yourself forward for things, the nearest you could do was suggest new areas of research. But they had certain titles that their clients expected to see every year. [...] If you've got [only a few] analysts and you need to get through a certain amount of titles it really limits the opportunities to look at new areas of research. [In] the position that I am in now [at a large company] it's very encouraged, "If you see something that you think would be of interest to our clients, speak up and say. It's time to do it."*  
(Victoria, on the ability to make suggestions at the small market research company)

In Victoria's example, suggesting new areas of research or new ways of producing content (her employer had “*a very old fashioned way of producing reports*”) could be viewed as a type of product innovation, which she thought was difficult to achieve at the small research company because of limited resources. This point also extends to the possibility of using creative problem solving (Section 8.3.2.2): like innovation, the creative problem solving process also requires time, experimentation, and contains an element of uncertainty (Mumford et al., 1997) which can be difficult to accommodate in a company with limited spare capacity.

In addition, the lack of slack at Victoria's employer also led to her taking on more junior administrative functions in addition to her main workload. Victoria thought that this kind of extra responsibility had negative effects on her pay grade and on her skills development.

*We had a lot of people quit over a period of about [1-2 years], and some of those job tasks were quite essential – you need to publish reports, you need to get journalists to pick those stories up, you need some form of promotion, and I ended*

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*things, and he would tell analysts they were wrong about things they'd spent quite a lot of time looking at and interviewing people about.”* See also Section 9.3.1.3.

<sup>182</sup> Slack, broadly defined as an organisation's spare capacity, enables an organisation to finance costly innovation, withstand failures, and explore new ideas as well as working on its core business (Rosner, 1968) although both inadequate and excessive amounts of slack can be detrimental for innovation – in the latter case due to potential complacency (Nohria and Gulati, 1996).

*up doing a lot of that function. I was editing press releases, scheduling press releases, dealing with admin functions for our blog. [...] It became quite burdensome. [...] **it wasn't "Hands up, who wants to do it?", it was "Somebody needs to do this!", and it meant that I lost a day a week to things that weren't really my responsibility, they lowered my pay grade, they weren't giving me any experience** [emphasis added]. Some things you don't mind doing if you know it's going to help your career ultimately, but I knew that these wouldn't.*

(Victoria, on having to take on extra work due to a lack of spare capacity at the small market research company)

In the interviews, the lack of organisational slack also featured in Rob's case, in a job he had prior to his job at the time of the *Futuretrack* survey. Rob mentioned how he was working as an account executive in a medium sized communications company, which lost business and staff to become a small company. He explained that the company became "*top-heavy*" as a result, retaining the senior people at the top but making other staff redundant, including two administrative assistants who were doing things like "*setting up the meeting rooms.*" The work that the admin staff used to do was then transferred to "*the guys at the bottom,*" which included Rob, who became "*incredibly stretched*" as a result:

*[T]he execs then had to do all this stuff that didn't teach them anything, didn't make them better at their jobs, it was just busy work that had to be done. [...] Basically it was outside our job description but in the **wrong** way as opposed to the **right** way [emphasis added].*

(Rob, on his experience of working in a struggling medium-sized communications company as account executive)

Whether business size was related to organisational slack was outside the area of research in this thesis, however, other research has generally found that small firms' barriers to growth include external factors such as financial constraints and lack of staff, but also internal factors such as a lack of motivation to grow (Storey, 1994). The interview findings suggest that in some circumstances having too few staff to cover the main functions of the business led to difficult working conditions for the graduates, and did not only diminish the

opportunities for developing their jobs, but also gave them additional responsibilities which detracted from their main work.<sup>183</sup>

This was also related to companies taking on too much business for their staff to cope. For example: *“the company has a high attrition problem [...] I think people found the work too hard, there was too much pressure and not enough appreciation.”* (Claire, whose CEO was *“obsessed”* with growing the company (see following Section)). Claire pointed out that her experience of working in the small company was not entirely what she envisaged: *“I guess if you go into a company with a fun office and a fun atmosphere you expect it's going to be fun, and so sometimes people's expectations are a bit mismatched if they're working late or under pressure.”* This point is related to violated psychological contracts (Robinson and Rousseau, 1994; Rousseau, 1990), and provides another example of the importance of organisational environments for career development.

### 9.3.1.3 Employment relations

The relationship of the graduates with their managers and colleagues also contributed to graduates' perceived abilities to make suggestions. On the whole, responses were very positive. Fourteen out of twenty graduates got on well or very well with their colleagues and managers, both in small and in large businesses. Some of the graduates even said that they made very good friends at their companies and were still in touch with their ex-colleagues even after they changed jobs (e.g. Julia, Claire, Susanna). Jane and Susanna, who mentioned that they worked with directors with prescriptive working styles (see Section 9.3.1.1); both reported having good employment relations at their companies. These accounts of positive employment relations are consistent with the research on the informal nature of small firms, that it is usually the case that small firms, owing to informality, have direct, personal, and close working relations conducive to mutual respect, that lead to a good experience of work (e.g. Tsai et al., 2007).

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<sup>183</sup> It should be added that Brendon also mentioned that his employer also lost staff, but he felt that that it enabled him to take on more responsibility, but in the 'right way' rather than the 'wrong way,' to use Rob's terms. In Brendon's case, having fewer people at the company did not involve him having to do work at a more junior level, but rather being able to take on more responsibilities in his role. *“[The company] was doing all right, and then, luckily after I got my job, they lost their biggest client, so a few people left after that. I probably got more responsibility because they had less people there all of a sudden, and it was like you could have a go at that, you could probably do it and see what happens and it turned out ok.”*

However, four people identified some problems in their employment relations. Victoria and Claire both mentioned that their MD or CEO caused some frictions in the workplace and with other staff, though they themselves had a working relationship with the company managers. In Victoria's case, she said that she had a fairly good relationship with the MD, but that lots of people in the company didn't. Despite this working relationship, and despite a "really good" relationship with her colleagues, Victoria also mentioned that her MD's personality influenced part of her decision to change jobs.

*"[W]e kind felt that in other companies he wouldn't have been given so much of a managerial role because he really wasn't good at managing people, but because it was his own company, he got to be king of the castle. [...] He just was a very abrasive person. [...] He just was a very abrasive person. [...] And it was sort of part of the reason why I ended up leaving, he just wasn't a very good manager and had not really that much of an idea of how to get the best out of people."*

(Victoria, on some of the problems the MD of her company created for the employees)

In Victoria's situation, dealing with this employment relationship was difficult because the key staff, such as the line manager and the person responsible for HR, were friends with or married to the MD: *"That's part of the downside of working for a sort of 'mom and pop' company, that if there are problems you have very few people to complain to."*

Similarly, Claire, working as a vocational instructor at a training services company, got on very well with her colleagues and with the superiors of her team, but thought that there was quite a high turnover of staff because they were under too much pressure and did not feel appreciated, and that the CEO of the company was *"obsessed with growing [it.]"* While she did not have tensions with the CEO herself because she didn't have to deal with him much, *"there was a general feeling in the office that people were a bit fed up with him making rash decisions and being obsessed with growing the company at the expense of other people's wellbeing."* Similarly to Victoria, there was little that Claire and her colleagues could do: the company had an online engagement survey but *"there was a feeling that it wasn't really received, nothing was really done."* Despite this, and in contrast to Victoria, Claire thought that the CEO's personality did not really affect the way in which the company worked because there was a supportive culture in her team:

*[W]ithin my team everyone supported each other and got on really well. That was part of the draw for me and was probably why I stayed [at the company] so long. [...] There was an amazing culture despite the relatively high turnover among the employees. They were looking out for each other and working really hard and that continued regardless of him. It was quite easy to ignore him and just carry on. I think that was partly due to my team – he wasn't really involved in my team – when he did get involved it could be quite stressful for people but on the whole the head of my team had a much better control over what we did and we liked her a lot.* (Claire, on managing the employment relations with her CEO through having a supportive team environment)

Ruth, on the other hand, got on with managers “quite well” and with colleagues – “all right.” She particularly mentioned that she appreciated having contact with the managers and “seeing what drives them,” and commended them for being open and approachable. However, Ruth also acknowledged that the business was also shaped by the managers’ personalities: sometimes they were “giving mixed signals without realising it and sometimes it’s quite difficult to communicate upwards.” Regarding colleagues, Ruth explained that there were sometimes tensions when the business was not going well, or when she thought some people were not performing, because “I think it can be difficult to be amazingly cheery with everyone when you need people to pull their own weight, otherwise they are just coasting and we all impact on that.” Ruth thought that this was “one of the things that affect the dynamic in a small company.”

Anna did not have a particularly good experience of employment relations, employed as a research executive at a small market research company. She thought that the company “wasn’t the right corporate fit” for her and that she had a “big personality clash” with her line manager. She eventually left the company to work in a micro-sized food company (see also Section 9.3.4 for Anna’s accounts).

### 9.3.2 Expectations of work

In some cases, the graduates thought that taking on additional responsibilities were a part of their job. This view is discussed below in relation to two groups of graduates who, in the interviews, were asked whether they had to do tasks beyond their job description, either at a more senior or a more junior level. The formal job descriptions for most of the associate

professional jobs the graduates did were usually very broad. However, in 14 out of 20 cases the graduates reported being required to do tasks above and/or below their formal job description on a regular basis.

### 9.3.2.1 “[E]veryone has to do everything”

Some graduates’ accounts mentioned having to do everything around the office as part and parcel of working in a small business, and something that was expected of all the employees. ‘Doing everything’ really involved *everything*, from taking on administrative tasks, or “*sit[ting] in on board meetings where we would be talking about where the research is heading,*” but also “*packing bin bags for example, or sitting at the reception for an event*” (Julia). Amy’s quotation below contains some particularly colourful examples:

*All the time! I wrote the CEO’s [child’s] dissertation last week. Lots of stuff. Probably less so now than when I first started. Oh god, I helped decorate the office when we changed offices. I helped to organise company trips away, lots of different things.*

(Amy, account planner at a small advertising agency, on ‘doing everything’)

The graduates who experienced this kind of ‘doing everything’ thought that they were able to participate in higher-level responsibilities as well as lower-level responsibilities, but the majority of the additional tasks tended to be at the lower level. Some accounts (Amy and Bryony) mentioned that the expectation that they would do everything diminished as the graduate spent more time in the company, but other accounts did not report experiencing this alleviation of responsibilities. Karen, for example, was “*starting to lose patience with small businesses and **having to fix everything all the time***” [emphasis added]. The graduates did not always have discretion over what they would do around the office, and the work tended to be on a “need” basis, however, it was more varied compared to Rob and Victoria being required to take on additional lower-level administrative responsibilities.

### 9.3.2.2 “I kind of do different bits and bobs”

Other graduates described an organisational context where they did things outside their job description on an occasional basis (both Brendon and Chris mentioned doing “*bits and bobs.*”) Brendon’s quotation in particular is shown below as it illustrates his employer’s relaxed attitude to employees doing other tasks in the business.

*I'm quite happy to do bits and bobs. I run the company Twitter account, I don't think that's in my job description. I don't think I'm really technically meant to be a writer, but I write stuff occasionally. Stuff for the website or for clients. I pick music, if we're making a film, because of my background in that. Yeah, bits and bobs here and there, **it's quite relaxed like that, if anyone wants to have a go they can** [emphasis added].*

(Brendon, on doing 'bits and bobs' as a brand consultant in a small marketing agency)<sup>184</sup>

In Helen's and Richard's cases doing "bits and bobs" was explicitly framed in a career development language, where they specifically chose aspects of the business with which they could become involved. Helen's quotation illustrates both the initiatives she took on in addition to her job (specifically, the talks she organised), which developed her role as a company employee, and her research of packaging, which was helpful for a project she was working on.<sup>185</sup>

*One of the things that I do, which isn't really part of my job at all, is we have talks on a [weekday] lunchtime which I organise, so I've found speakers within the big business, invite them to come speak, organise the lunch at the time. [...] Because I've not had a very narrow job description, it's been quite a broad 'get involved with whatever work and development projects that are needed,' there has been other things. I think I mentioned the packaging. I learnt quite a lot about plastic bags, I went on a tour of a plastic bag factory and did quite a bit of work on deciding what bags we should have, the number of colours, all of that sort of stuff, which isn't really related to anything else but was a project that needed doing.*

(Helen, on doing tasks beyond her job description as a business development analyst at a large grocery business)

These responses differed from the 'doing everything' theme because the 'bits and bobs' graduates saw their extra responsibilities as being additional to the job rather than being a necessary condition of the job, and had more autonomy in deciding what they could do.

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<sup>184</sup> Brendon had some experience writing music: "For my first job I was making music for computer games. I've been doing that while at university, and when I finished university [the computer games company] offered me a full-time job."

<sup>185</sup> See Section 9.2.1 for Richard's quotation.

Their discretion over which additional tasks to do was associated with taking on responsibilities with a view to progressing in their careers.

### 9.3.3 Organisational change

Another theme interacting with the opportunities for taking on additional responsibilities was organisational change. All organisations experience change (By, 2001) however there are few clear definitions of what organisational change actually is (Quattrone and Hopper, 2001). This Section focuses on three kinds of change: company growth (through taking on new business and more staff), company takeover, and restructuring.<sup>186</sup> In some cases, graduates were able to use the change to their advantage, for example through being involved in the change process and developing their jobs. These findings are consistent with management of change literature, for example, adopting a participatory approach and involving employees in the change (Kotter and Schlesinger, 1979). However, in other cases the uncertainty accompanying the change and the lack of control over the change made opportunities for career development difficult to see.

#### 9.3.3.1 Employer growth

In eight cases the graduates' employers grew through a combination of taking on more business and employing more staff (Jess, Karen, Julia, Claire, Richard, Helen, Bryony, Chris). The extent to which graduates were able to 'work with the growth' was affected by the duration of employment at the company and the role the graduate had in the growth of the company. For example, Bryony was one of the longest-serving people in the small social research company. She joined it when it was a micro-sized company and witnessed it grow to become a small company, and very much felt that she was a part of that change. In her quotation below, she emphasised both her key role in the change of the company, and acknowledged that it may have been difficult for people who joined the company during the change, not being a part of the change process.

*I feel quite comfortable in the company, I know what I'm doing, I really like it, it's a nice place to work. It's much easier to know your place when you've seen that [growth] transformation happen. And I think it must be quite alienating as a new*

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<sup>186</sup> In ten cases the company in which the graduates were working in at the time of the *Futuretrack* survey grew. In six of those cases the graduates were able to 'work with the growth': for example either directly through their own contribution to the business, but also through making use of new business needs and new job opportunities, or through becoming more senior in the company (Jess, Karen, Julia, Helen, Bryony and Chris). Five out of those six were small companies.

*person to come into the company that's obviously changing an awful lot and to enter during that process. Whereas for us who have been here for a long time and who had seen that process through, **you feel like you are part of that change** rather than trying to retrospectively fit into it [emphasis added].*

(Bryony, on being part of the small social research company as it grew)

Susanna reported a similar experience to Bryony. By the time she left the small PR agency, she was one of the longest-serving members of staff there and thought that her opinions were “*definitely*” taken on board. Similarly, Jess and Karen had also contributed to the growth of the businesses in which they were working and had become some of the core 'go-to' people in their company for problem-solving.

This finding was not confined to graduates employed in small businesses: in fact there were several examples of small businesses being quite 'stuck in their ways' and not growing, or not adapting to the growth (Victoria and Jane's cases). There were also examples of large businesses that had started new operations. For example, in Helen's case, she was one of the first few people in a new team that was developing a new business direction for a large grocery business, rather than one of the longest-serving people in the company as was the case with the previous graduates' accounts. Her experience echoes some of the graduates' working in small businesses where their role developed as the business grew.

*[W]hen I started I was only the third person in the team and now we're about [25-49 employees], so the team itself has changed quite a lot.[...], the whole time I was there, and because I was there from the start, what happened was that just my role became four people's roles as there was more that people had to do, I got to steer it slightly and say what I'm more interested in, that I'd like to focus on that [...].*

(Helen, on the ability to influence the direction of the new business as one of the first team members)

Another factor that affected taking on responsibilities and managing careers was the ability to negotiate. Opportunities for negotiation sometimes arose when companies took on new projects. Even in cases where graduates did not directly influence the project bid, in some circumstances they could position themselves to improve their job outcomes. This was particularly well illustrated with Richard, who negotiated his progression through the

company's graduate scheme, and through a combination of luck and contacts managed to develop his role.

***When you move between the years on the grad scheme it's always a bit of a dialogue, you can't just pick any account; it has to be work that needs doing*** [emphasis added]. So I heard a few months before my second year placement that they started saying, "There's this opportunity, and this opportunity." There were two other [opportunities] that were presented to me, but then I'd heard from someone I'd been working with on a pitch that we were pitching for this [product name] company, and I would have loved to work on it if we won it. And then as it turns out we did win it, and because I'd flagged it earlier on they said, "Ok, there's room, we're building a team, do you want to be part of it." So I joined that way. So it is what's on offer but you can influence it.

(Richard, on negotiating his career development in the graduate scheme)

These graduates' experiences describe career management in the context of organisational change. Other research has shown that employees take on more responsibility for their careers during organisational change (Lips-Wiersma and Hall, 2007), however the study also found that the organisation supported employees in their career management during the change.<sup>187</sup> The importance of organisational support for individual career management especially in periods of organisational change has been well-discussed (e.g. Clarke, 2008). For example, in a study of young Australian professionals at an early stage in their careers Lattuch and Young (2011) found that although organisational change was related to psychological uncertainty and stress, a high magnitude of organisational change was positively related to employees' job satisfaction.<sup>188</sup> But, Lattuch and Young also found that emotional stability, openness to new experiences and *leader support* were important coping mechanisms to alleviate the effects of stress. This finding further reinforces the joint importance of the role of the individual and the support of the organisation in career development and managing change.

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<sup>187</sup> Note that the authors conducted semi-structured interviews with a range of employees but in just one organisation in New Zealand, which limits the application of their results to other contexts.

<sup>188</sup> The authors suggested that younger employees were more likely to accept change, and possess values associated with the post-organisational career and individual career management.

### 9.3.3.2 Change 'from above'

In contrast to the previous group of graduates, Brendon and Dana experienced organisational change that happened at the managerial level and that the employees were expected to adjust to. In Brendon's case, at first the company had lost a client and had to make people redundant, but was later taken over by a larger company. He mentioned that before the takeover, the small marketing consultancy in which he was working was "quite a trendy relaxed small company" but was currently "in the transition phase," facing pressures to adopt new, more formal ("more square and less aesthetically attuned") ways of working from the new parent company.<sup>189</sup>

*Whereas we would put a lot of effort into making sure that [a presentation] looks good and well-designed and put together, when we look at the parent's work it is often a load of text on a slide and is often impossible to understand without a long explanation full of jargon. [...] They've got score cards and a proper formal review process, and every project goes through a kind of feedback loop monitoring everyone's performance, which is all tied in to the bonus that you get at the end of the year [...] We are gradually taking on their pricing models and ways of working. There's a lot of cultural pushback from us, because they're from a more management consultancy and [another country] cultural background, which doesn't match up with the way that a lot of us were working. [...] It's an interesting process which leaving a lot of people thinking – should I be thinking about leaving, or should we be trying to influence the whole way the larger company runs, or should we be taking it as an opportunity to learn stuff. So at the moment I'm not sure how it's going to play out really. It is an unusual situation.*

(Brendon, on the current resistance and adjustment in his employer following a takeover)

In particular, Brendon was unsure of his career development in the company following the takeover. Brendon started as a junior brand consultant in the small pre-takeover company and would have been promoted to a mid-weight one: "It was quite a flat structure; you were given as much responsibility as you earned on things, and it was quite relaxed." After the takeover, he was transitioning to the new owner's organisational hierarchy: "In the new

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<sup>189</sup> Note also the use of 'we' and 'they' which further underscores the perceived division that between the small market research company and the new owners.

owner's system I'd be put in at the bottom rung but told that I am [... some] months down the line from moving up to the senior level of that bottom tier." He thought that the new parent still provided the opportunity for career development: "Even in the new company you earn your responsibility and people give you more stuff if they think you can handle it." However, Brendon was not sure how that career development would take place compared to his experience of working in the pre-takeover company:

*I would say [the opportunity for career development has] been pretty good, particularly when it was smaller. In a smaller business, as you said earlier, people tend to take on stuff that is going on, and so I think they quite liked me and they seemed to be happy with what I was doing, so the opportunity was almost immediately there for me to move on to take on more responsibility and learn more things [..., it] has probably generally been really good. With the company now being ten times bigger I'm slightly worried that **that** won't quite be the same any more, but we'll see what happens [emphasis in original].*

(Brendon, on his perceptions of his career development following the takeover)<sup>190</sup>

Dana expressed similar concerns to Brendon regarding change 'from above.' Dana was leading on a big internal project at the same time as the company was undergoing change in management personnel, which created uncertainty around her career progression. Many people had left, including some of her team members, her manager and her MD. Dana expressed a concern that her work might not get the "recognition it deserves" and that she could miss out on a promotion. At the same time she was "not holding [her] breath":

*It's a funny one because obviously everything is changing and the potential is quite high. I'm getting to know new people; I'm still trying to find my seat with the new structure. The career progression has become more of an option recently but also at the same time it could go horribly the other way. I knew my old MD liked me, and I knew I had attention, but as a company they are renowned for not promoting people and not giving pay rises, and if they do it's never more than ten per cent which is rubbish. So [...] I am not holding my breath. I am holding my ears open for other roles.*

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<sup>190</sup> It should be noted that Brendon did not attribute taking on responsibility to the growth of the company as a result of the takeover, but rather to having fewer employees (see Brendon's quotation in Section 9.3.1.2, footnote 183).

(Dana, on her perception of her career development in the context of restructuring)

Both Brendon’s and Dana’s cases may be described as change instigated by factors outside their direct control. These findings are broadly consistent with implications from the management of change literature, which suggests that in a company undergoing change, the sense of being in control can mitigate the impact of uncertainty on psychological strain (Bordia et al., 2004). This can be applied to the graduates who were at least partly participating in and in control of the change described in the previous Section who got to ‘steer the ship.’

### 9.3.4 Too little support?

Lastly, some graduates found it difficult to work in informal and unstructured environments where work processes were not clearly defined. Even graduates who fared well in an unstructured environment pointed out that it would not necessarily be suitable for everybody. For example, Victoria explained how for other people at the business the lack of structure and support made it difficult for them (but not for her): “[S]ometimes, and I did find this with one of my colleagues, you can feel quite lost if you are not being supported in your development.”<sup>191</sup>

For example, Chris and Anna thought that they did not have enough information or guidance to do their jobs. In Chris’s case, he and three other colleagues had to design a new job for them to do, which did not exist in the company before. The job design that Chris and his colleagues first came up with was not what the managers in the company had envisaged, which caused some initial problems:

*[O]ur boss said to us, “We need to design this job of team leader,” which I don’t think was the best way to go about it. The company should have designed the job and then told us what we were going to do. There was some direction: you need to*

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<sup>191</sup> Also Bryony: “Across the board training is informal, I have friends who are always getting sent off on these one-day training courses, and part of me is jealous, and then part of me is just like – maybe I’d rather learn on the job. **Maybe I’m so indoctrinated into this ‘do-it-yourself,’ ‘get-yourself-out-there’ mind-set that I don’t really care as much. I think it could be a very unnerving environment if you’re not confident and if you’re not very self-starting. I don’t think it would suit everybody** [emphasis added].” See also Section 9.2.3, p. 218 for Bryony’s quotation about self-promotion being harder for shy colleagues.

*train the staff, keep a track of what they're doing. But personally, **if I was my boss or managing director, I would have more of a structure in place [...]** rather than having [some] people who haven't done that job before, it never existed, [...] agree on what that job should be and how it should be done. And then you can start to go off on tangents that the company don't necessarily want you to off on, but they haven't realised that you've gone off on those tangents and then they have a stop because **you're not doing what they want you to do and you're like, "But you haven't told me what you want me to do."** [emphases added].*

(Chris, on the difficulties of having to design the new role of team leader with his colleagues)

In a similar way to Chris, Anna mentioned that she did not have any advice or suggestions about how to do her job in her first job as a marketing executive at a small leisure agency. Anna said that although the company had expectations of what she was supposed to do, there was nobody she could learn from how to do the tasks they wanted. This was similar to Chris's experience, that his employer had expectations of what that job would involve but did not share those expectations with Chris and his colleagues.

*I was on my own as a graduate, I had nobody to learn from, nobody to show me the way. I was expected to think of and implement campaigns on my own [...] and there was a lot of political red tape in that kind of place [...] it was hard for me to implement more modern ideas.*

(Anna, on her first job in a small leisure agency)

In addition, in her job as a junior research executive at a small marketing company, Anna thought that she and her colleagues were given too much responsibility and too little guidance. Moreover, as mentioned before, Anna did not get on well with her line manager (see Section 9.3.1.3), who was partly responsible for the training.

*My main responsibility would have been performing interviews and focus groups and analysing the results, writing the deliverables, but then it would get to the point where it would just be myself and the other junior that had started, we did not kick off the project, that would be started by somebody senior, but we would carry out all the research, and all the analysis, and write the entire final deliverables. And I*

*thought that somebody who had been working in market research for a few months should not be responsible for the final deliverables for a major client. So it was a huge responsibility. [...] Our line managers took us through how to analyse in this way and that way but that's as far as it got.*

(Anna, on her responsibilities as a junior research executive at a small market research company)

Chris, but especially Anna's accounts above emphasise the importance of perceived organisational support to graduates' experiences of opportunities for career development. Anna's case particularly highlights how the post-traditional career emphasis on the onus on the individual to take responsibility for career management can have negative effects when there is a perceived lack of organisational support, which complicates the view that graduates will be successful if they are 'self-reliant' (Hawkins and Winter, 1996).

This finding connects to the broader discourse of 'employability' and the emphasis on individuals to develop skills, qualities and experience to compete in the labour market, which can overlook the existing economic and social inequalities present (Moreau and Leathwood, 2006).<sup>192</sup> The authors suggested that a critical framework could help make such inequalities explicit and mitigate this individualising discourse. In both Chris's and Anna's cases, the graduates were aware of the perceived failings on the part of the organisation as well as any of their own weaknesses. For example, Anna herself mentioned that she struggled with statistical analysis: *"until you specialise in a certain area of market research it's very academic, and so I did struggle in a lot of the areas, like the statistical side of market research, I really failed there."* However, she was also aware of the lack of support at her employer, and made some critical suggestions about how it could have been improved. Moreover, Anna's subsequent employment as a sales and marketing manager at a micro food company showed that she was able to thrive in an environment where she

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<sup>192</sup> Moreau and Leathwood (2006) analysed post-1992 university graduates' experiences of the university-work transition. They found that, in contrast to Brown and Hesketh's (2004) sample of predominantly elite and middle-class graduates (also the predominant sample in this thesis), graduates from post-1992 universities faced additional disadvantages in the labour market and, using the individual-centric discourse of 'employability,' were likely to blame themselves if they did not succeed in finding appropriate work: "In a context where both the employability and equal opportunities discourses contribute to views of the labour market as meritocratic, the failure to attain appropriate employment becomes an individual failure" (2006, p. 320). This important point is elaborated further in relation to the findings in this thesis in the conclusion (Chapter 10).

had better employment relations, support, and felt that she had greater freedom to develop her role:

*I just love this industry. I always want to learn more about it and I enjoy networking with these people and being around these people, working with these kinds of products. I mean my role can be whatever I want it to be [...] I can go to my boss if I need something, it's an open office, open book, if I ever need advice on something I just shout across the room.*

(Anna, on her new job as a sales and marketing manager at a micro food company)

## 9.4 Career development

In the interviews, the graduates were asked about the opportunities for further promotion and career development in the company where they were working at the time of the *Futuretrack* survey. The graduates who changed or were about to change employers at the time of the interview, and the reasons why they did so are shown in Table 9.1.

The main point to note from Table 9.1 is that all but one of the graduates who had been working in small businesses at the time of the survey and had changed employers were working or were about to be working in larger businesses. The graduates' main reasons for leaving their previous employers were that there were limited further opportunities for career progression; that they considered that they had outgrown the company; and that they needed to get more experience elsewhere. In a small number of cases, the graduates decided to leave or were looking for another job because they were ultimately interested in working in another sector (Jess, Julia, Claire, Anna).

In cases where the graduates were staying with their employer for the time being, they were either waiting to be promoted or to develop their skills and their career. In two further cases graduates were staying because their employer was undergoing organisational change and the graduates wanted to wait and see what would happen after the change had taken place. The following analysis expands on the main reasons why the graduates changed or were about to change their employers.

**Table 9.1: Whether the graduates changed employers since the *Futuretrack* survey**

Alias	Changed employer?	Size of current employer at FT Survey	Size of current employer at Interview	Why changed employer / Why decided to stay
Julia	<b>Changed</b>	Small	Large	To work in another sector
Victoria	<b>Changed</b>	Small	Large	Limited opportunity for promotion; Needed a larger firm to develop career
Claire	<b>Changed</b>	Small	Medium	Limited opportunity for promotion / development; To work in another sector
Rob	<b>Changed</b>	Large	Large	Made redundant
Jane	<b>Changed</b>	Small	Medium/Large	Needed a larger firm to develop skills and career
Susanna	<b>Changed</b>	Small	Medium	Too long in one place; No promotion
Anna	<b>Changed</b>	Small	Micro	To work in another sector
Amy	<b>Changing</b>	Small	Medium	Needed a larger firm to develop skills and career; More money; Too long in one place
Chris	<b>Changing</b>	Small, grew to medium	Medium	Needed a larger firm to develop skills and career; Too long in one place; More money; Career development mapped out
Jess	Same, but looking for another job	Small	Small	No promotion, to work in another sector
Karen	Same, but looking for another job	Small	Small	Fed up of fixing small things; Too long in one place
Ruth	Same, but looking for another job	Small	Small	External circumstances (partner abroad)
Sam	Same	Large	Large	Unsure
Richard	Same	Large	Large	Get promoted
Helen	Same	Large	Large	Get promoted
Matt	Same	Large	Large	Unsure
Alex	Same	Large	Large	Develop skills and career
Bryony	Same	Small	Small	Develop career
Dana	Same, restructuring	Large	Large	Wait and see
Brendon	Same, taken over	Small	Large (through takeover)	Wait and see

Source: *Futuretrack* stage 4 interview respondents, N=20.

## 9.4.1 Limited opportunity for career progression

### 9.4.1.1 Limited further promotion

One of the most common reasons the graduates gave for leaving their employer was that there was limited further opportunity for further career progression. Among the interview respondents, nine graduates mentioned that they left, or were thinking of leaving, because of this reason, and all of these graduates were employed in small businesses.<sup>193</sup> Some accounts mentioned that there were no further positions into which they could be promoted. Jess's quotation below is typical of these responses:

*In the current company, in the office that we're in, there is no position which exists to which I could be promoted. However in [winter] I had an employee review, an appraisal, and they did kind of mention that there may be a promotion. However nothing else has been said about it since, and two months have gone by, and I don't know if it will happen or what it would entail as well. In my office I am the youngest person and also the one with the most responsibility besides the manager, and I have been told that I also have a lot of skills that nobody else has, I combine a lot of skills that nobody else has. So that's why they're giving the promotion, but I don't know if they actually would. So the possibility, we're looking at maybe 50 per cent. Career development – same. If I am given a promotion then I have the possibility of career development, but apart from that there is absolutely no possibility because there is no position available.*

(Jess, on why she was looking for another job)

Jess, as discussed earlier, 'grew' her job through taking on additional responsibilities and using her knowledge and skills. At the time of the interview, she was looking for a job in another sector, and was considering doing a course on specialist software to improve her chances of getting into the sector. Although she thought that she had a lot of "very valuable experience," including working with "demanding clients" and using her language skills, she thought that changing sectors might be difficult because not many people knew what relocation was: "so they see it on your CV and they don't know what you can offer. So

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<sup>193</sup> They were: Jess, Karen, Julia, Victoria, Amy, Claire, Jane, Susanna. While Dana, who was employed in a large business, did mention that her employer was not renowned for giving good pay rises and promotions, it was clear from her interview that there were still more opportunities for career development within that company than was the case for the nine graduates in small businesses.

*I have to remain in customer service so that people can understand what kind of skills I have and what I can offer.”*

Victoria similarly pointed out that while she gained a lot of experience she thought that there was no room for further promotion at her small employer, and that she needed to change companies to further her career development: *“Part of the reason I decided to move jobs was that I knew that in order to progress my career I was going to need to work in a bigger firm. So there was actually space to be promoted.”*<sup>194</sup> She thought that she could have had a change in the job title but her responsibilities would not have changed: *“I really guess that my old employers could have given me a change in my job title, but the fact that I wouldn't have been at any point managing anybody it wouldn't be a promotion really.”*

This, and similar accounts, further highlight the arbitrariness of job titles and job content in some cases, and emphasises the role of responsibility, rather than job title, as being a more important consideration.

#### **9.4.1.2 Outgrowing the company**

A related reason was that the graduate *“outgrew”* the company. Even if there were still opportunities for promotion, these graduates thought that they needed to move somewhere different to develop their skills and take on additional responsibilities. This relates to the issue of job titles being divorced from job content, as discussed above. For example, Claire had accomplished everything that she wanted to do at her employer's – the only position above her job was that of a manager, which she did not particularly want to have. Amy thought that she would not be able to develop her management skills unless she moved to a larger company where she could oversee more junior people. Jane, quoted below, explained that she could no longer improve as much as she wanted to as a market researcher with her former employer: *“I reached my peak at [the small company ...] I obviously had a lot to improve as a market researcher, and I'm improving every day, but I couldn't do it to the best of my degree at that company.”*

These accounts told a very similar story: the graduates initially progressed quickly and took on additional responsibilities but then hit what might be called a *career plateau*, “the point in a career where the likelihood of additional hierarchical promotion is very low” (Ference

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<sup>194</sup> Another part of the reason was the employment relations with the manager of the company, see Section 9.3.1.3.

et al., 1977, p. 602), particularly the *organisational* plateau where the employees have the ability to perform higher-level jobs but there are no openings in the organisation for them to enter. While the career plateau was originally applied to careers in hierarchical organisations, the concept can be extended to small organisations: the ratio of skilled employees to available positions is likely to be higher in flatter organisations (Appelbaum and Santiago, 1997); this observation is also consistent with other research that has pointed out that smaller firms are less likely to sustain internal labour markets (Lane (1994) in: Carroll et al. (1999)). In subsequent research the career plateau was extended include additional responsibility rather than job title seniority (Feldman and Weitz, 1988), which reflects the idea that job titles are not necessarily linked to additional responsibility. Jane's account further supports this decoupling between job title and job content:

*Because it was a small company, they promoted quickly, so they had all these different people, but the skill set didn't actually match the title [. ...] [I]t's interesting because even though the role title changes, I think the girls at [the company] would agree with me, and I certainly noticed this, **we all had different titles but we all did the same job, so I think that's why they were starting to get bored.** Because they didn't feel like they were getting paid more and that they might have had a bit more responsibility, but actually they were doing the same job as us. And **actually I guess that caused a bit of friction between everyone** [emphases added], because lower levels recognised that they were doing the same job but not being paid as much, and higher levels are like, 'Well, I'm bored now, because I've been doing this job for so many years and I'm doing the same thing.'*

(Jane, on how job titles at her employer did not relate to the job content)

In the context of a post-organisational view of career development, a 'plateau' may be reconceptualised as a part of 'peaks and valleys' in individuals' movements between different types of jobs (Mirvis and Hall, 1994). Moving around was seen as important for some of the graduates interviewed, as discussed below.

#### 9.4.2 Moving around

For several people, the reasons to change jobs were included the above reason for the lack of opportunities for further career development, but also included a sentiment of not wanting to stay in one place too long to compromise their CVs. There was no obvious association with business size; graduates employed in both small and in large businesses

expressed this view (e.g. Karen, Sam, Susanna). This finding supports other research, (e.g. King, 2003) that wanting to move between employers did not differ between graduates employed in small and in large companies, and that it was the least important career preference. Susanna's quotation illustrates this:

*Well, after almost four years, I felt like I needed to go somewhere else, simply because... I don't know, I'm always concerned about the way people will look at my CV, and if I stay at one place for a long time it doesn't look like I am progressing quickly enough then that will reflect badly.*

(Susanna, on deciding to change jobs)

This finding is related to the concept of a *boundaryless* (Arthur, 1994) or *protean* career (Hall, 1976 in: Hall, 2004) where individuals assume responsibility for developing their careers and move between different jobs and different employers. It is also related to the notion that, for some early career graduates, the ability to move around and get experience before 'settling' into a job is important. Richard provided such an example: "*Further on I'd like to start my own business at some point but that's something that in my mind is at least five to ten years away, so I'd like to progress and move around as much as possible before then.*"<sup>195</sup> However, in his case, he had opportunities to move around within his current employer, rather than having to change employer. The graduates who had this opportunity and had not changed employers at the time of the interview are discussed below.

### 9.4.3 Staying with the employer

The graduates who had not changed employers since the *Futuretrack* survey were mostly working in large businesses, with the exception of Bryony. Some of these graduates were working on a graduate scheme (Alex, Richard) and still had some of the scheme to complete at the time of the interview. Therefore, it was not possible to directly compare

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<sup>195</sup> One finding in the interviews not discussed in this thesis was that some of the graduates had started or, like Richard, were planning to start their own business. Analysis was undertaken of the characteristics and experiences of these respondents, but there were no significant associations between this and their experiences or of working in particular kinds of organisation; however, those graduates that had started their own businesses thought that their experience of working in a small company and getting an overview of how a small business operated was very useful (analysis available on request). These findings are consistent with research on the Shell STEP programme participants (Westhead et al., 2001), which found that STEP-students were more likely than non-STEP students to have positive attitudes to self-employment and to starting their own businesses.

the experiences of changing employers between graduates who worked in small firms and those who worked in large companies at the time of the *Futuretrack* survey. However, the perceptions of career development with their employers can be compared. The graduates who had not changed employers since the *Futuretrack* survey tended to view their promotion prospects and career development at their employers in a positive way, emphasising the skills and responsibility they gained and had the opportunity to develop in the future.<sup>196</sup> Alex's example below is typical of this group of graduates:

*[Career development here is] generally very good, there are a lot of opportunities and I think there is a variety between upwards and horizontal movements, it really depends where you want to do - either the leadership route or the expert route as to where you end up. [...] At the moment I'm kind of open to both routes, I haven't made a decision as to which way I would go, so I'm looking at a broad development plan and opportunities at the moment, but it's still a very early stage for my career, so I think that's quite a reasonable position to be at, to be open to opportunities.*

(Alex, on career development at a large energy company in an HR capacity)

For graduates who worked in market research, part of their sense of having increasing levels of responsibility was related to the ability to work on high profile projects with large, internationally famous clients. The graduates' interview accounts gave the impression that they thought that such opportunities were more consistent in larger businesses. This finding relates to the type of small professional service firms in this sample of graduates. Richard's quotation below highlights this perception:

*Because it's a big agency you do get to work on really big global clients which is really good for your CV, and getting good experience on them. If I had worked in a smaller boutique agency, I would have probably been able to get more responsibility quicker, just because that's typically what happens in smaller agencies, and you get to be a little bit more senior more quickly, but you don't get to work on such big clients, and you don't have such a diverse range of experience.*

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<sup>196</sup> At the time of the interviews, Dana and Brendon had not decided what to do, because their employers were undergoing change (see Section 7.3.3.2). Dana mentioned that if she did not get a pay rise or a promotion, she would "be happy to stay in the company for another few months while [this change] is happening" and look for a job elsewhere, but still in the same industry.

(Richard, on his opinion of working in a large agency compared to a hypothetical example of working in a small “boutique” agency)

However, the interviews also showed that some graduates in small agencies *did* work with famous clients: for example, Bryony and Amy mentioned working with a range of clients including high profile ones. In Bryony’s case, her employer was growing, and she was optimistic about future career development. This finding is also consistent with existing research, that employees have fewer opportunities for taking on more responsibility when organizations experience slow growth (FERENCE et al., 1977). In addition, Bryony mentioned that for new employees starting at the company as research executives, there were better opportunities for career development than when Bryony was a research executive herself:

*I think it's actually better for the execs now. When I joined there wasn't the precedent for these things, and I was really lucky, but I think now because it's bigger and we're growing exponentially, a good exec will get noticed quickly, but then there might be a more senior position in [some] months' time, even quicker. The company is almost like a funnel, it's getting bigger and there are more and more opportunities as it gets bigger.*

(Bryony, on her perception of the opportunities for career development for new junior staff)

Bryony’s example is interesting because she highlighted the lack of “*precedent*” as a factor that complicated her own career development. This relates to the distinction between taking and making opportunities discussed in Section 9.2, where accounts of making opportunities tended to coincide with a lack of clear career progression in the company. The account of new staff having a clearer route for career progression is also consistent with companies adopting more formalised processes as they grow larger (Storey et al., 2010).

## 9.5 Does small business experience lead to better career progression?

### 9.5.1 New job at 'higher' level

Some of the graduates who worked for a small company and then changed employer thought that their experience of working in a small business enabled them to get a job at a more senior level than they would have had they spent the same amount of time doing the same job in a large business (e.g. Victoria, Amy, Jane, Susanna). Victoria attributed the speed of progression through her company to an absence of a formal training structure like a graduate scheme, which enabled her to progress at her own (faster) pace:<sup>197</sup>

*The lack of formal training at [the small market research company] meant that I was able to progress as an analyst much more quickly than I would have if I had been in a graduate scheme, so when I changed position I'm further up the tree than I would have been if I had joined the company where I work for now's graduate scheme. Because I have more experience and I have more titles under my belt as published research. So perhaps I've missed out on formal training, but I have learnt informally from my colleagues at my previous job and people and who have significant amount of experience, but that wouldn't suit everybody.*

(Victoria, reflecting on her experience of career development at the small company)

Susanna's perception of getting a job at a more senior level than she thought she would have if she had worked in a large company:

*What happened with this new role was that I applied for, they had two roles going, Communications Officer and Communications Manager. And [the Officer post] required three years' experience and the manager required five, which obviously I didn't have. And when it came to it, they looked at me and at the other candidates for both roles, they changed the job description of the account manager role and offered it to me, [...] I never would have been offered that job if I hadn't had the experience that the PR agency had given me.*

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<sup>197</sup> This was despite issues such as problems with the manager and the company being set in its ways, as mentioned in Victoria's quotations in Section 9.3.1.

(Susanna, on her experience of getting a new job at a large health specialist organisation having worked in a small PR agency)

Amy's comparison between her small company experience and that of her friends' at large companies also highlights the difference in taking on responsibilities quickly (See also Richard's example in Section 9.4.3):

*I've got a good example actually. A really good friend of mine is a planner at a huge agency, about 500 people, and we started our jobs about the same time, I had a bit more experience than him. He's never even been allowed to write a creative brief, and I write them every day. So that's the kind of difference in the level of stuff that's yours to own. You get a lot more exposure to things at a smaller agency. I think that a lot of that is simply because there are fewer levels between you and the people who are really high up, there are fewer degrees of separation which really help you.* (Amy, comparing her experience of early career development in a small company to that of her friends in larger companies)

### 9.5.2 New job at 'lower' level

In a few cases graduates who changed employers had to take a demotion. In Jane's case, she ended up changing employers to work in that large company whose graduate scheme she initially considered. Jane was ambivalent on which of the two would have been better for her career, but veered on the side of having made the "right" decision of starting off in the smaller company. She went on to say that she thought her experience at the small company helped her get her job at the large company. The difference between her case and Amy and Victoria's cases above was that she had to take a demotion because although she had "a lot of depth in certain areas," she was "lacking in breadth."

*I was promoted to senior research executive at [the small company], I then decided to move companies because I felt that this [large] company offered me better opportunities in terms of my development, but one of the things was I had to take a knock-down, so I went back to research executive, because this was a much bigger company, specialising in international as well as UK work, so they were skills I didn't actually have yet. So I went back to research executive and now recently I've been promoted again to a senior research executive at this company, with international*

*skills now, so that's how it basically worked.*

(Jane, on taking a demotion at her new employer)

Julia also had to take a job at a lower level than she had worked to in her small employer, but in her case it was more to do with changing sectors and starting a different kind of job rather than to do with uneven skill development at the small company:

*I've got a lot less responsibility now than I did; I kind of entered the sector at a lower level, so I've taken a pay cut as well as a responsibility cut. So in terms of that kind of job satisfaction I would say it was lower than what it was at the [previous, small] company. But I'm considering it as a foot in the door, as a way of getting into the sector, and one of those things that I have to do to get to where I want to be eventually.*

(Julia, on accepting a pay and responsibility cut in changing employers and sectors)

In Chris's case, he was the only graduate in the interview sample to mention that he thought that he was "underemployed" in the sense that with his kind of qualification he could be earning more, but also have more space to "try out new things." This latter point relates to the concept of organisational slack, described in Section 9.3.1.2.

*Actually I've always felt slightly **underemployed** in a way [emphasis added]. Because I've got a first class degree in [an arts and humanities subject] – admittedly it's not from a Redbrick [university] or anything like that – I probably had more slightly more leverage at the company than other trainers have had, my argument has always been that I've got a first class degree [...] in a good subject, and if I wanted I could hop off to a graduate scheme or to a law firm and retrain fairly easily, and be earning two to three times more than I am earning here [at the small company] in a fairly short space of time, which has kind of made them a bit more amenable to pleasing me [...]. It's partly to do with salary, and also with working with an SME rather than a large organisation. There's neither the variety nor the space to allow people to try lots of different things, or to try out different routes or lots of different progressions [...], there's not really the resources to invest that money in the people either. That's just the nature of working in an SME. But I made the choice to work there so I'm not going to moan about it too much. [...] But the*

*flip side of that is that it would not be as stimulating or enjoyable – I don't care what anyone says, unless you're a very particular type of person, for nine out of ten people they are going to get a lot more job satisfaction doing what I'm doing, and have a lot more fun than sitting at a desk and counting, or doing whatever lawyers do.*

(Chris, on his perception of being “*underemployed*” at his small employer)

Chris was going to take a pay and a responsibility cut in his new job as a teacher in a medium-sized teaching organisation: *“I think I'll take the pay cut for a couple of years, but I imagine within three or so years I'll be back to earning the same if not more than I have been earning here.”* He also viewed the clearer career progression paths in the new teaching organisation as an advantage: *“Also there's the career progression mapped out for you.”*

As explained before, it was not possible to compare the experiences of graduates who worked in small businesses and changed jobs to that of graduates who worked in large businesses and changed jobs. However, Rob's example provides an account of a transition between working in a medium-sized social data marketing company owned by a larger parent (classified as ‘large’ for the purposes of the thesis), being made redundant and almost immediately headhunted into his new job at a very large media agency.<sup>198</sup> In the example below, Rob contrasted his career progression at the medium-sized company with, in his opinion, faster progression at the very large agency:

*In about two years [at the social data marketing company] I'd gone from being a completely new rookie with perhaps a good CV and some potential, to a senior account exec level, which was fine, about what you'd expect, in the industry, for a good grad. In this current company [...] they took me on as a planner, which was a leap of faith from them, because I had no experience being a planner, no experience in bought media, no experience in the kind of agency that this company is, and in one year I went from being a planner to a manager, I lead my own team, I work*

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<sup>198</sup> Rob emphasised that the redundancy package he received was due to the company's larger parent: *“I was quite lucky at the [social data marketing] company because they were owned by a larger company, and I got the larger one's redundancy package, [...] and they gave me some very valuable materials, a couple of one-to-one workshops with my CV. That was a really good benefit of having the larger company behind a smaller company.”*

*with large global clients, huge accounts with millions and millions of money, I've had a million responsibilities [...] I have an entire company who relies on me for all their paid social media stuff, it's bloody brilliant.*

(Rob, comparing his career progression at a medium-sized company with that at a very large agency)

One point raised in Rob's quotation was that the very large media agency took a "leap of faith" employing him as a planner. Based on other graduates' accounts which mentioned the ability to take a job at a higher level because of their range of experience, it is possible that in Rob's case, his experience of working in a medium-sized social data marketing company (and before that, work in a medium-sized communications company and other work experience) facilitated his planner job at the very large agency. However, no conclusion can be drawn about this because this issue was not further discussed in the interview owing to time considerations.<sup>199</sup>

The interview accounts showed that elite graduates employed in small businesses had generally been able to take on additional responsibilities and develop their jobs, despite obstacles such as companies being resistant to change and poor employment relations. The majority of these graduates were able to progress quickly through the business, but they tended to hit a career plateau, in terms of further promotion and/or additional responsibilities at their small employer. For these graduates, it was often possible to find another job with another employer, sometimes at a more advanced level than they thought they would have received had they worked in a large company on a graduate scheme. The ability to find new jobs was likely related to these graduates' knowledge, skills, and resources such as cultural and social capital, which placed them in an advantageous position in looking for work.<sup>200</sup> For example, research on the career plateau highlighted that individuals may be unable to change their plateau situation because of a lack of resources (Elsass and Ralston, 1988). This point could be investigated in further research, using a more varied sample of respondents compared to the approach adopted in this thesis.

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<sup>199</sup> Rob's interview lasted an hour and twenty minutes, twice as long as the allocated time, and was encroaching on another interview scheduled later in the same day.

<sup>200</sup> This could be viewed as similar to the "cumulative pattern of advantage" highlighted in the *Futuretrack* Stage 4 Report (Purcell et al., 2013).

In contrast, graduates employed in large companies were also able to take on additional responsibilities but thought they had more room for further career development while staying with their employer. One issue for future research would be to use survey data, such as the *Class of '99* study, to look at the similarities and differences of graduates' career paths depending on whether they started work in small or in large businesses.

## 9.6 Discussion

This chapter focused on graduates' career development, focusing on the ability to take on additional responsibility, and, where applicable, the experience of changing employers. One of the main findings was the distinction between graduates who *took* opportunities and those who *made* opportunities, although the distinction was not always clear. In the case of *taking* opportunities, graduates were actively encouraged by their employer to take on additional responsibility, attend training courses, develop their skills and build up their experience using already established channels. The graduates in these contexts tended to describe their progress through the company using expressions such as: 'We were encouraged to [take on side projects]'. On the other hand, in companies which did not have such a structure, or in which the graduate was developing a role which did not exist before (Bryony's notion of a "*precedent*"), *making* opportunities was a more apt description of the graduates' experiences. These graduates talked about developing their roles as the business grew, inventing job titles and designing their own work processes using active language such as: "*I have also taken on other roles.*" Both taking and especially making opportunities were related to the graduates 'growing' or 'upgrading' their jobs (G. Mason, 2002; Harvey et al., 1997) through taking on additional responsibilities, sometimes leading to job description redesign.

Insofar as the making / taking opportunities can be associated with types of business, graduates' accounts that gave examples of 'making opportunities' tended to be based in small businesses, and those of 'taking opportunities' – in large businesses. It was not possible to code every account, and some accounts, as discussed in Section 9.2.3, gave examples of both taking and making opportunities. Among the graduates in the interview sample, it seemed to be the case that the freedom to make suggestions (and managers being receptive to these suggestions), the incidence of business growth *and* the ability for graduates to participate in that growth to use it to their advantage were facilitating factors for *making* opportunities. Although these characteristics are not limited to small businesses, they may be more likely to occur in small businesses, as discussed in the literature review (e.g. Section 2.5).

For example, while it could be the case that small businesses are more likely to be growing than larger businesses (Storey, 1994), some graduates' accounts highlighted it was possible for large businesses to create a growing environment, such as developing a new business

area (e.g. Helen's case) which could allow employees to influence the direction of the business and develop their jobs. But, large businesses are also more likely to have formal processes, such as professional development / graduate programmes that have opportunities for taking on additional responsibility built in for taking. In small businesses, as evidenced by Matt's example, opportunities for taking occurred more informally, through managers' discretions. This connects with the literature on business size and formality (e.g. Tsai et al., 2007; Storey et al., 2010) and suggests that making opportunities, while not limited to, may be more likely to occur in small businesses.

Graduates employed in small businesses tended to report having to 'do everything' in their jobs, and 'pitch in' as needed, which is consistent with existing research (e.g. Martin and Chapman, 2006). There was no interview evidence that graduates working in small businesses were more likely to do things outside their job descriptions compared to graduates employed in large businesses, but there was evidence to suggest that the way in which graduates did things outside their job description differed. Some of the graduates employed in large companies reported that they could choose which additional responsibilities to take on, and tended to select ones that would develop their skills and further their careers.

There was an association between business size and opportunities for further career development, with graduates who were employed in small companies tending to report that they were facing difficulties with further promotions and skills development in their company, having reached career plateaus (Feldman and Weitz, 1988; Ference et al., 1977).

All but one of the graduates who had changed or were thinking about changing employers were employed in small businesses at the time of the *Futuretrack* survey. The main reasons they gave for changing employers were related to limited opportunities for career progression (which was directly related to reaching a promotion plateau and outgrowing the company), or wanting to move around and work in different companies to enhance their CVs. These findings echo a point mentioned in a footnote of the Bolton (1971) report, which also describes a 'career plateau' reproduced below:

*Although in small firms the opportunities for progression for junior staff, especially those without qualifications, may be superior to those in large firms, this is less*

*likely to be true for salaried managers who, unless they can grow with the firm, must be forced to change companies more frequently to further their career than do large firm managers. (p. 21, para. 2.40, footnote 3).*

However, most of the graduates who had changed or were changing employers thought that their experience or work was useful and beneficial in looking for another job. Some graduates thought that having worked in a small business enabled them to take on a lot of responsibility in a short space of time, which meant that they were able to take a new job at a more senior level than they would have done had they spent the same amount of time working in a large company following a formal training scheme. However, previous research on career plateaus has suggested that finding another job ('transitioning') was a route least often taken by plateaued employees, possibly because of a lack of resources to do so (Elsass and Ralston, 1989). This suggests that these findings may be limited to elite graduates who possess the necessary resources to be able to change jobs: a similar point was raised by King (2004, p. 128), that career self-management may have downsides "for those who are not in positions of privilege or success." Moreover, it was not possible to directly compare employer transitions outcomes with those graduates who were employed in large businesses, because most of the graduates in large businesses had not changed employers at the time of the interview. This remains an issue for further research.

In summary, analysis of these twenty interviews showed that these graduates' early career development was affected by a combination of the business size, the business environment, and the ability to take or to make opportunities in the company, also related to business size and business environment. The next chapter draws together the findings from the quantitative and from the qualitative analysis, and highlights the implications of this research for graduates looking for jobs, small businesses looking for graduates, and policymakers.

## 10 Conclusions and implications

### 10.1 Introduction

This thesis investigated recent graduates' use of knowledge and skills in small firms and their experiences of early career development. In particular, I have sought to discover whether, and if so to what extent, employer size affected the skill utilisation and early career opportunities available to the sample of 2009 *Futuretrack* graduates. This research was filling a gap in the literature because existing studies have reported mixed findings on graduates' opportunities to use their knowledge and skills in small businesses, and very little has been done to compare graduates' experiences of work in small and large businesses, controlling for occupation, industry and higher education background. This thesis study is particularly as it concerns a period when the UK government is explicitly highlighting small businesses as potential graduate employers in the context of the 'knowledge economy,' an expanding HE system, and a slow growth of traditional graduate vacancies, accentuated by the UK recession.

A sequential mixed-methods (quantitative→qualitative) approach was used to investigate the complex and multi-faceted concept of knowledge and skill utilisation and career development, looking at *Futuretrack* first-degree graduates who were in private sector employment during autumn/winter 2011/12. The quantitative phase systematically looked at graduates' self-reported use of knowledge and skills at work, controlling for occupation, industry, and personal background at the overall labour market level (Chapters 5 and 6). The qualitative phase focused on twenty predominantly 'elite' graduates employed in the business and public service associate professional occupations, and investigated their perceptions of using degree knowledge and skills at work, and their experiences of career development (Chapters 8 and 9).

This chapter presents a discussion of the overall findings, the contributions to theory and knowledge, to methodology, and to empirical evidence, the implications for policy and practice, and the directions for further research. The main findings are discussed in Section 10.2. The main contributions to knowledge and theory, methodology, and empirical evidence are discussed in Sections 10.3, and the implications of this research for students and graduates, small business owners, university careers services, and policy-makers – in Section 10.4. Limitations and directions for further research are discussed in Section 10.5. Section 10.6 presents the concluding statement to this PhD research.

## 10.2 Main findings

### 10.2.1 Graduate knowledge and skill utilisation in small and large businesses

In the quantitative phase, four measures of skill utilisation were analysed: whether the graduates reported using their degree knowledge and skills; how frequently they thought they were required to use specific skills; whether a degree was required for their job; and whether they thought their job was appropriate for someone with their skills and qualifications (Chapter 5). These measures were derived from existing literature on skill utilisation. In particular, the first two measures were the most insightful, as they referred to graduates' perceptions of using skills at work. The qualitative phase explored the graduates' meanings of these concepts (Chapter 6). The main findings are discussed below.

#### 10.2.1.1 Degree skills and subject knowledge

When controlling for the occupational group, industry sector, and personal background, the results showed no obvious difference between skill utilisation as measured by the likelihood of using degree knowledge and skills and working in small businesses compared to large businesses. Occupation, and to a lesser extent, industry groups, were the variables which had the most important effect on the likelihood of using degree skills and subject knowledge at work. The occupational groups associated with the highest levels of using knowledge and skills were the professional and associate professional occupations. These results were consistent with Allen and van der Velden's (2011) findings that the use of degree knowledge at work was primarily associated with 'classical professional' and 'semi-professional' occupations. The quantitative results also indicated that there was a persistent gap between the proportion of graduates who said that they used their degree skills and those who used their subject knowledge at work across all business size groups.

The qualitative findings shed considerable light on the quantitative findings above, although no clear associations were found between graduates' interpretations of using skills and knowledge at work and employer size. Among the graduates interviewed, the definitions of 'subject or discipline knowledge' included an "approach" to problems as well as more commonly held view that it was the direct discipline-related substance of their course syllabuses (the lecture content, etc.). In contrast, degree skills were usually defined as being practically orientated, often supplemented with examples of skills such as writing, research, presentation and formulating arguments. A subset of graduates explicitly defined degree skills as being non-subject-specific. In addition, there was substantial overlap

between the definitions of skills and knowledge regarding the “methodological process” to approaching problems. These findings showed that graduates from broadly similar HE backgrounds employed within similar occupations held a variety of perceived meanings of degree skills and subject knowledge. Thus, while knowledge has been more broadly defined elsewhere as “the theoretical or practical understanding and possession of information” in the SOC(HE)2010 classification (Purcell and Elias, 2015, p. 8 in manuscript), half of the graduates interviewed in this study viewed it almost exclusively in terms of the direct discipline-related substance of their course syllabuses – a finding that has also been reported in previous graduate labour market studies.

When asked about how they used degree skills and subject knowledge at work, graduates who defined their subject knowledge in broader terms than just the direct discipline-related substance of their course syllabuses were more inclined to say that they used their subject knowledge at work *indirectly*, for example to build up a “rapport” with clients or to “unlock” new ideas. Moreover, there were several cases in which the graduates stated in the *Futuretrack* survey that they did not use their subject knowledge at work, but, when probed during the interviews considered that they did do so (e.g. using statistical foundations from a degree in the mathematics and computer sciences area in a market research context (see Victoria, cited in Section 8.2.3.1)).

Part of the difference in perceptions could stem from the decoupling of ‘graduate attributes’ from subject disciplines as a consequence of the emphasis on ‘generic graduate attributes’ in university teaching. The extent of such decoupling, however, has been found to vary across disciplines (Jones, 2009; Barrie, 2006), which may explain why some graduates viewed their degree skills as non-subject-specific, and others defined their degree skills as intrinsically linked to their discipline degree knowledge. Owing to the sample of graduates in the qualitative part of the survey it was not possible to investigate the extent to which degree subjects influenced graduates’ perceptions of knowledge and skills – this remains an issue for further research.

#### **10.2.1.2 Specific skills and the importance of knowledge**

The 11 skills used in the *Futuretrack* survey question were correlated with each other, which suggested that there could be latent factors underlying these individual skills. An exploratory factor analysis found that two or four factors could describe the underlying structure in the data; the four factor solution is discussed here. The 11 skills loaded onto

four factors (factor names were selected based on the classification of skills loading onto these factors in existing research): ‘creative thinking’ (research, critical evaluation, innovative thinking and entrepreneurial skills); ‘mobilising own capacities’ (time management and working individually); ‘critical analysis’ (numerical analysis and critical evaluation); and ‘mobilising others’ (spoken communication and ability to work in teams).

Graduate employment in smaller businesses was associated with a lower propensity to report being required to use skills associated with mobilising one’s own capacities, critical analysis and mobilising others, but no association was found between business size and creative thinking. Similar findings were reported in the OECD (2013) Survey of Adult Skills (PIAAC): information-processing skills (reading, writing, numeracy, ICT, and problem solving) and co-operation at work (similar to mobilising others) were more commonly found in larger establishments. However, these findings contradicted results from the Nove et al. (1997) study, which found that graduates working in smaller firms were less likely to report that their skills were under-utilised than those in larger firms. However, looking at factors masked variation in the likelihood of using *individual* skills constituting these factors: for example in the case of creative thinking, perceptions of being required to use research skills and entrepreneurial skills ‘a lot’ was positively associated with working in smaller businesses; for presentation skills, working in medium-sized companies decreased the likelihood; and no significant relationship was found between employer size and using innovative thinking skills.

The qualitative analysis investigated ‘creative thinking’ further, by asking graduates to explain what they understood by research and innovative thinking skills. Although no difference between employer size and elite graduates’ perceptions of research skills and innovative thinking skills was found, the qualitative analysis developed a fuller understanding of graduates’ interpretations of these skills with respect to their work. Perceptions of research skills included not only finding out facts, but also processing information to “pick out what’s important,” and learning new skills or processes independently. Innovative thinking skills were frequently defined through examples of developing new products, processes or new ideas, but were also defined as having a creative approach to solving problems, and creative or novel ways of communicating or presenting data. Some accounts identified a link between research and innovative thinking skills related to problem solving, and, crucially, to the knowledge and skills developed

during the undergraduate degree. For example by using subject knowledge indirectly to “unlock ideas” or as an approach to solving problems, i.e. knowing how to research, “pick out what’s important,” and present the findings in a creative way. The lack of a clear consensus view about the meanings of these skills is consistent with other research investigating the meanings of graduate attributes (e.g. Barrie, 2006) and the notion of skills in general (Holmes, 2000). Whether the graduates’ different perceptions of degree skills and knowledge influenced their job performance was not investigated here and is a subject for further research.

Despite graduates’ varying definitions of using subject knowledge at work, the interview accounts also showed that all interviewed graduates were engaged in knowledge work through understanding, generating, and communicating *information* (see Section 2.3.1), described by some accounts as using knowledge in an indirect way, and by others in terms of using skills developed at university. The knowledge-skills schism is partly a consequence of the ‘generic graduate attributes’ discourse, which has decoupled ‘skills’ from subject disciplines and relegated knowledge to a narrow definition of the discipline-related substance of their course syllabuses, downplaying the importance of using knowledge in work. For example, Yorke (2006) discussed whether graduates’ disciplinary-based understanding and skills were taken for granted by UK employers in favour of generic skills (see also Woods and Dennis, 2009). However, the definitions of skills (‘generic’ just one among many) have shown considerable overlap, and studies have found that there is no one shared code of understanding what is meant by ‘generic graduate attributes’ (Barrie, 2006; Holmes, 2000). But, the graduates’ accounts have shown how both knowledge *and* “higher-level skills” were intrinsically linked with working with knowledge (problem solving, critical assessment, logical thinking, theoretical development, and creativity) (Purcell and Elias, 2015) and were used at work in ‘creative problem solving’ (Mumford et al., 1997), combining skills in ways that other colleagues did not do, and taking on additional responsibilities to develop their work (e.g. Jess cited in Section 9.4.1).

Regarding Weber’s ‘cultivated man’ and the bureaucratic ‘specialist’ (Weber, 1946) discussed in Chapter 2, the interview accounts suggested that the graduates were situated between these two ideal typical roles. While the elite graduates were using their skills in work broadly, some (e.g. Jane, cited in Section 8.2.1.1) also relied on their specialist knowledge. In particular, for graduates in communicator roles, where the production,

interpretation, and communication of knowledge was the main aspect of the job, the ability to understand and explain information to different groups of people (e.g. managers, clients) bridged disciplinary knowledge (specialism) and broad skills (communication, research, innovative thinking). This underscores the importance of knowledge and skills developed in HE in conducting knowledge work.

### **10.2.1.3 Degree requirement**

Consistent with existing research, the quantitative results showed that employment in small businesses was associated with a lower likelihood of graduates reporting that a degree was required for their job. In contrast, the majority of interviewed graduates said that a degree *was* required for their job, or that it was the norm in their employer's organisation. Often it was reported that even the administrative positions were filled by graduates, although in one case the employers introduced a career progression route for these kinds of graduates employed in "low-level" jobs (Helen, cited in Section 8.4.3). In several cases, it also emerged that the graduates thought that their employers were deliberately elitist in their hiring practises, only looking to hire graduates from the top universities and/or with the highest grades; in other cases employers were reportedly using a degree as a proxy for desirable characteristics. However, in two cases, graduates explicitly stated that using a degree, even an elite degree, to screen out applicants did not result in recruiting the 'best' people for the company.

The emphasis on university degrees, and especially elite ones, is consistent both with a screening hypothesis and with the 'war for talent' perspective, but can also be viewed as a response to an increase in the number of graduates applying for jobs, particularly during the economic recession. It should also be emphasised that small firms in the high-level professional services industries, such as the graduates' employers in this interview sample, are and have been more likely to employ graduates than small firms in other industries, and are unlikely to be representative of small firms in other industries in this respect. This partially explains the discrepancy between the qualitative and the quantitative results: the regression analysis controlled for occupation at the aggregate (unit group) level which still included a mix of jobs, whereas the qualitative analysis selected elite graduates who were doing a very similar type of job which was likely to require a degree. No significant association was found between employer size and the likelihood of a degree being required when looking at graduates employed in the associate professional occupations in the business services industry.

#### 10.2.1.4 Job appropriateness

The quantitative analysis found no association between employer size and the likelihood of graduates agreeing that their job was appropriate for someone with their skills and qualifications. The interviews supported this finding further; however, one theme arising from the interviews was that some graduates thought that they missed being challenged in an intellectual way at work like they were at university. While these graduates appreciated that it would not be appropriate to engage in such intellectual work on a daily basis, the implications were that they could get bored if their job was not challenging them enough, which could increase their intention to leave.

Three of the six graduates who mentioned that they would have liked to use more knowledge and skills associated with ‘intellectual challenges’ (analytical skills, critical thinking, etc.) did change employers since the *Futuretrack* survey (Julia, Claire, and Jane). This thesis did not explicitly investigate whether their dissatisfaction with the opportunity to use “the intellectual side of things” was directly related to their decision to change employers. However, graduates who had changed employers were asked why they left: the most commonly cited reason related to a ‘career plateau,’ which was partly related to the inability to take on more responsibility at the then current employer.

Whether this perception existed across the graduate cohort as a whole or whether it was predominantly expressed among elite graduates was not investigated in this thesis and remains an issue for further research. Existing research has found that graduates tend to report less skill utilisation in their early careers than they expect or have inflated expectations of the kind of work that they think they will find in the transition from university to employment. However, it is unclear to what extent these findings apply to the sample of elite graduates interviewed, who were generally employed in communicator graduate jobs (SOC(HE)2010) and had been in the labour market for at least two years after graduation.

#### 10.2.2 Graduates' experiences of career development

Only limited insight about graduates' career development and business size could be gleaned from the *Futuretrack* survey (Chapter 5). On the whole, graduates in small and large businesses were more similar than different in their attitudes to and values of work. However, graduates in large businesses were more likely to value (and to earn) high

salaries, as well as job security, and career development / promotion prospects. In contrast, graduates in small businesses were more likely to value the ethics of their employer and to do a job they really enjoyed, and there was almost no difference between graduates' ideas about their future careers and employer size. However, the interviews provided an opportunity to explore graduates' experiences of early career development in more depth. The main findings related to taking on responsibility and changing employers.

### **10.2.2.1 Taking and making opportunities**

One of the main interview findings was the different ways in which graduates took on additional responsibilities through *taking* and *making* opportunities to develop their jobs and improve their career development, and how this took place in different organisational contexts. In the case of *taking* opportunities, graduates were actively encouraged by their employers to take on additional responsibilities, develop their skills and build up their experience using established channels (e.g. professional development schemes). On the other hand, in companies that did not have such established channels, for example where the graduate was developing a role which did not exist before, *making* opportunities was a more apt description of the graduates' experiences. Although it was difficult to say categorically whether taking and making opportunities was associated with employment in a particular size of company, other research has shown that the ability for employees to make suggestions to managers and to participate in 'inclusive' business growth (where employees feel a part of the growth), both facilitating factors for *making* opportunities, are more associated with small businesses, whereas more formal professional development schemes – related to taking opportunities – are more associated with large businesses. Both taking and especially making opportunities were related to the graduates 'growing' or 'upgrading' their jobs through taking on additional responsibilities, which sometimes led to the employers redesigning the job descriptions.

While there was no interview evidence that graduates working in small businesses were more likely to do things beyond their job descriptions than those employed in large businesses, the nature of these responsibilities was different. Some of the graduates employed in large companies reported that they could choose which additional responsibilities to take on, and tended to select ones that would develop their skills and further their careers. Graduates employed in small businesses tended to report having to 'do everything' in their jobs, to 'pitch in' as needed, and faced an eclectic mix of responsibilities from helping decorate the office to attending strategy meetings, findings

consistent with existing research. Graduates who had least influence over which responsibilities to pick were faced with constraints such as working in a business “set in its ways,” and operating in environments with insufficient slack, for example with too few staff to manage the workload effectively.

#### **10.2.2.2 Changing employer as a response to career plateaus**

There was an association between business size and opportunities for further career development, with graduates who were employed in small companies tending to report that they were facing difficulties with further promotions and skills development in their company, having reached ‘career plateaus.’ While previous research suggested that the plateau was a phenomenon occurring mid-career, the organisational downsizing and delayering trends of the 1980s have reduced opportunities for internal progression in businesses and the plateau is becoming more relevant for younger employees. The limitations for progression in terms of promotion and responsibility were also likely to be higher in smaller businesses than in large ones for a similar time spent working for the employer. All but one of the graduates who had changed or were thinking about changing employers at the time of the interviews were employed in small businesses at the time of the *Futuretrack* survey. The main reasons they gave for changing employers were related to limited opportunities for career progression (directly related to reaching a career plateau), or wanting to move around and work in different companies to enhance their CVs (related to the self-managed post-organisational career).

However, most of the graduates who had changed or were changing employers thought that their experience of work was helpful in looking for another job. Some graduates thought that having worked in a small business enabled them to take on a lot of responsibility in a short space of time, which led to their ability to take a new job at a more senior level than they would have done had they spent the same amount of time working in a large company following a formal training scheme.

These career experiences are perhaps limited to young graduates. Jess’s quotation sums this up: *“I suppose young graduates who are enthusiastic and are ready to work hard, can drive, along with a good manager, a small business like that.”* While changing employers may be desirable for graduates early in their careers, for older graduates, or for those with families or other responsibilities, having to change employer to overcome a career plateau is likely to generate uncertainty and stress (Edwards and Wajcman, 2005). Moreover, while

some graduates in larger companies mentioned that they also wanted to ‘move around,’ they had more opportunities to do so *within* their large employer than those in small businesses, unless, as mentioned before, the small business was growing or intending to grow.

Previous research on career plateaus has suggested that finding another job was a route least often taken by plateaued employees, possibly because of a lack of resources to do so. This consideration suggests that the interview findings may be limited to elite graduates who are more likely to possess the necessary resources to be able to change jobs. This point links to the uneven distributions of resources, such as economic, human, and social capital, among graduates, which shape their *capabilities* (“the opportunit[ies] to achieve valuable combinations of human *functionings* – what a person is able to do or be” (Sen, 2005, p. 153); for example, to acquire HE knowledge and skills, to participate in the labour market, and to ‘grow’ or ‘upgrade’ jobs.

The individual capabilities perspective connects with the broader individualising discourse of ‘employability.’ Although the experiences of the wider graduate population were not investigated here, other research has found that graduates from post-1992 universities faced additional disadvantages in the labour market and, using the individual-centric discourse of ‘employability,’ were likely to blame themselves if they did not succeed in finding appropriate work (Moreau and Leathwood, 2006). The authors suggested that a critical framework could help make such inequalities explicit and help graduates mitigate this individualising discourse. The interviewed graduates who identified problems at work were also aware of the shortcomings of their work environment, and made some critical suggestions about how it could have been improved. However, the capability for such insight may be associated with the elite graduates’ relative social and economic advantage while other graduates may find it more difficult to navigate such circumstances.

## 10.3 Contributions

This research makes contributions to knowledge and theory, methodology, empirical evidence, and policy and practice, discussed below.

### 10.3.1 Contribution to knowledge and theory

#### 10.3.1.1 Business size

This thesis contributes to the debate on whether business size affects experience of work, a broad term which includes knowledge and skill utilisation and career development. This PhD research found that business size has an effect on graduates' experiences of work, however, the findings are nuanced and the effect is subtle. Few differences between small businesses and larger companies were found in the quantitative phase of the project when controlling for occupation, industry and personal characteristics. However, the qualitative phase demonstrated that business size did affect graduates' perceptions of their experience of work, in terms of taking on additional responsibilities and early career development, even in a very narrowly defined area of the labour market and for a relatively homogeneous graduate sample group (graduates in market research, advertising and other related professional services).

As discussed earlier, graduates working in small businesses frequently mentioned 'having to do everything' outside their job description and 'making' opportunities to take on additional responsibilities. These experiences of work tended to be described in the context of informal relations and processes that were more widely mentioned in small-firm-based interview accounts than in large-firm ones. Thus, this finding lends some empirical weight to the assertion that graduates may be able to develop their jobs more in small firms where the division of labour is less specialised and relations are more informal. However, from the interview part of the study, it is not possible to determine whether this finding is *specific* to small firms, and so more research is needed on this issue. In addition, while working in a small businesses appeared to provide opportunities for graduates to progress quickly initially, they were more likely to hit a 'promotion plateau' which compelled them to change employer. The professional service occupations are often seen as those in which occupational identity is more relevant than organisational identity, especially in light of downsizing and delayering (e.g. Kitay and Wright, 2007). Evidence from the quantitative phase also found that business size had very limited associations with knowledge and skill utilisation measures once occupations and industries were added as controls to the regression models. Thus, business size effects may be expected to be absent if knowledge

and skill utilisation and career development are influenced more by the occupational, rather than the organisational, identity. However, this PhD research presents evidence that suggests that partial business size effects are present even for professional service work at the associate professional occupational level, where it may be expected that occupational identity and no business size effects may be expected.

Three main points can therefore be made about graduate employment in small firms based on this research relating to the utilisation of skills and knowledge, the experience of work, and career development. First, firm size does not appear to affect graduates' perceptions of using skills and knowledge – occupation and industry sector are the main explanatory variables. Second, graduates in small firms do take on responsibility more quickly than in large firms, at the early stage at the start of their careers, and are more likely to *make* opportunities to do so, for example to take on additional tasks and to develop their jobs. Third, the interviews suggest that working in a small business may have questionable implications for later employment outcomes: graduates thought that they reached a stage where they could no further develop their jobs and thought that they had to move to another, usually larger, company to continue developing their careers.

This research thus contributes to the debate about the importance of business size for employees' experiences of work (see Chapter 2 Section 2.5.1). While Curran and Stanworth (1981) and others have suggested that business size is not an important variable in itself and is a proxy for other variables, such as industry sector and employee characteristics, other research has found a pure size effect, in addition to the importance of industry sector (e.g. Storey et al., 2010; Tsai et al., 2007). This thesis research lends further support to the view that business size *does* have a partial effect on the experience of work, even for the narrowly defined part of the labour market – the business and public service associate professional occupations mostly in business service industries, and thus stands in contrast to the Curran and Stanworth (1981) findings.

### **10.3.2 Contribution to methodology**

#### **10.3.2.1 Skill utilisation concept**

This thesis makes a methodological contribution by developing a broad and multidimensional definition of skill utilisation, based on skills match concepts and Warr's (1994) *opportunity for skill use* construct. This definition included not only the use of

graduates' current skills and knowledge (measured by the use of degree skills / subject knowledge / specific skills / degree requirement and job appropriateness questions in the *Futuretrack* survey, the 'narrow' definition), but also the potential to develop these skills (investigated in the interview discussions about the opportunities to take on additional responsibilities and ideas about career development, the 'extended' definition). Knowledge was used as an additional dimension to skill utilisation because of the focus on graduates' employment: knowledge developed during HE is paramount to understanding graduate-level jobs (Purcell and Elias, 2015). The potential to develop skills and knowledge was linked to career development, based on the insight that it is the opportunity to use skills and knowledge that will enhance one's future career that is important for early career graduates (Arnold, 1994).

The narrow definition of skill utilisation (whether the graduates were using their knowledge and skills, used in the quantitative part of the study) did not reveal many substantial differences between different employer sizes. These findings appear to contrast with Nove et al. (1997), which suggested that graduates employed in small businesses were less likely to report skill *underutilisation*.<sup>201</sup> However, the extended definition used in the qualitative phase was able to capture the dynamic aspect of *using and developing new skills, knowledge, and responsibilities*, and the environments in which this was more or less likely to occur. The extended definition of skill utilisation showed relationships between employment outcomes, such as growing a job, hitting a career plateau, and the decision to change employers. Thus, this research makes a methodological contribution by developing a multidimensional construct of skill utilisation, and shows that such a construct is necessary to develop a fuller understanding of the relationship between skill utilisation and other aspects of employment and employee outcomes, and to graduates' abilities to 'grow' jobs.

However, as the qualitative study was limited to just 20 graduates, this finding can only be used as a starting point for developing the theory of knowledge and skill utilisation further. In particular, several cases of 'growing' a job were identified among the interview accounts. Future work could connect 'growing' jobs to the concept of 'job crafting,' (Wrzesniewski and Dutton, 2001) to explore mechanisms through which 'growing' jobs can occur and to

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<sup>201</sup> It should be noted that the instruments used in the *Futuretrack* survey are not directly comparable with the Nove et al. (1997) study, as *Futuretrack* asked about skills used at work, and Nove (1997) asked about skill underutilisation.

look at the career outcomes of being able to 'grow' jobs (such as: career progression, opportunity for knowledge and skill use, employer-assisted upgrading through changing the job design).

### **10.3.2.2 Mixed-methods research**

This research makes the key contribution of applying a novel mixed-methods approach to the research question of graduates' knowledge and skill utilisation in small and large businesses, which has not been applied in this combination to this research area before. Existing research on skill utilisation and experiences of work in SMEs, for graduates and more generally, has lacked a systematic analysis of whether, controlling for occupation, industry, and individual characteristics, business size matters, both from a quantitative and qualitative perspective, a gap which this thesis has addressed. This omission needed to be addressed because the concepts of skill and knowledge utilisation and experience of work, including career development, are multi-dimensional, and cannot be adequately captured using only quantitative indicators (e.g. earnings, or survey instruments) or only qualitative methods (e.g. only focusing on selected sectors or contexts).

The strengths of this mixed-methods approach were that it enabled the multifaceted issue of knowledge and skill utilisation to be explored in depth: first, through a systematic, labour-market wide analysis of graduate employment in SMEs (at an aggregate and detailed level), and knowledge and skill use; and second, through a focused and targeted in-depth qualitative investigation of graduates' experiences of knowledge and skill utilisation and early career development in small and large businesses within a specific occupation group and industry sector. The exploratory quantitative phase provided an overview of graduate skill utilisation in small businesses and identified areas warranting further investigation: (1) to explore graduates' meanings of skills and knowledge concepts used in the survey, and (2) to go beyond the survey data to ask about subsequent career development. These areas were addressed in the qualitative phase, which provided a nuanced view of different effects of business size even within a narrow occupation and industry group.

Thus, this novel mixed-methods approach has resolved some extant research questions pertaining to the business size debate and the use of knowledge and skills. While business size the quantitative part of the study did not, in general, find a relationship between skill and knowledge use and business size when controlling for occupation, industry, and

individual characteristics (although some relationships were demonstrated), the qualitative part of the study enabled a targeted exploration of a specific area of the labour market and identified a qualified and partial size effect using the interview data. This argument could only have been made using this specific combination of quantitative and qualitative analysis. The quantitative and qualitative methods both supported each other and provided a more complete picture of graduates' early careers than a monomethod study would have done.

On a more general level, this thesis has also demonstrated the value of being able to conduct statistical analysis on a large-scale survey and to follow up a selected sub-group of respondents to ask about their specific experiences to add context and additional meaning to the survey data. These insights are useful for refining and rethinking survey question designs in future research work. For example, following up survey participants provides a way for respondents to engage with parts of the survey instrument, and to question some preconceptions held by researchers (in this research project this was demonstrated by participants discussing their responses to some of the survey questions and questioning the definitions of small businesses). Applying this type of mixed-methods-friendly research design to secondary datasets is not always possible because ethical provisions typically restrict identifying and accessing individuals (Leahey, 2007). To promote the use of secondary data (a key ESRC initiative)<sup>202</sup> in MMR, considerations should be made to ensure that survey participants are asked whether they would like to participate in follow-up studies,<sup>203</sup> and to investigate the possibilities of developing secondary datasets which include more than one type of data (e.g. a combination of scale and open-ended survey responses, or interviews with a sub-set of participants) (Pearce, 2012).

### 10.3.3 Contribution to empirical evidence

The main empirical contribution of this thesis was a systematic analysis of graduate knowledge and skills utilisation in small firms compared to large firms, while controlling for occupation, industry, and personal background, using the *Futuretrack* survey and quantitative and qualitative approaches. As discussed in Chapter 2, little research has focused on graduate employment in SMEs, and even less has looked at small firms

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<sup>202</sup> See <http://ukdataservice.ac.uk/use-data/secondary-analysis/sdai.aspx>

<sup>203</sup> The *Futuretrack* survey asked whether participants were willing to participate in follow-up studies.

specifically. Thus, this research has shed light on the graduate employment in small firms in the UK in several ways, discussed below.

First, this research has mapped where recent graduates were working 1-2 years after graduation with respect to employer size. This analysis provides a longer term perspective than alternative data sources such as HESA DLHE, which collect data on graduates' employment only six months after graduation. Taking a longer-term perspective is important because evidence suggests that it is taking graduates increasingly longer to find an 'appropriate' job, and this duration is only accentuated during a recession.

Second, this research has shown how graduate skill utilisation varied with business size across the labour market, controlling for occupation, industry, and personal characteristics. This analysis thus extends previous labour market-wide studies of graduate skill utilisation in SMEs which did not employ multivariate analysis and only compared cross-tabulation data. The advantages of this approach are that it highlighted the associations between small firms and aspects of skill utilisation, and showed when firm size mattered, and when occupation and industry groups were more important. This analysis thus provides more detailed and more robust information than simple cross-tabulations.

Third, this research has followed up graduates' survey responses to using knowledge and skills at work to investigate *how* they interpreted these concepts, thus evaluating the reliability of the survey research instruments. The empirical evidence contribution from this qualitative part of the analysis suggests that meanings attributed to concepts such as 'knowledge' differ between graduates, with the implication that more care could be taken in designing skill utilisation survey instruments, and interpreting data from such instruments.

Fourth, this research develops the first comparative qualitative study of graduate skill utilisation and career development in small and in large businesses in a narrowly defined occupational and industry group (business and public service associate professionals in business services) with a relatively homogeneous sample of graduates. Prior to this research, most qualitative studies of graduates' early careers did not take business size into account, did not focus on small firms, and/or did not attempt to control for the type of employment. The empirical contribution of this thesis research approach is the attempt to

isolate, as far as possible in a qualitative approach, business size effects on graduates' experiences of work at the early career stage.

Related to the above point, and as mentioned on p. 265, this thesis makes an empirical contribution towards substantiating the assertion often mentioned in the literature that small firms are likely to have more varied and flexible work roles because of less formalised division of labour, and that graduates may be able to use this flexibility to their advantage to take opportunities to use and develop their knowledge and skills and further their careers. This thesis found some empirical evidence that supports this assertion (making opportunities) but owing to the interview research method and sample limitation it is not possible to say definitively whether this finding is specific to small firms. More research should be carried out to test this proposition.

Finally, this research provided a timely investigation of how 'generation crunch' graduates navigated their early careers in the middle of the UK recession. For the most part, the interviewed graduates were relatively successful in developing their skills and experience, and in developing their jobs into ones that used more of their knowledge and skills. The qualification to accompany this finding is that the interviewed graduates were relatively 'elite' and were so better positioned than other graduates for finding a job in the recessionary context. A question for further research is thus to extend this analysis to other graduate groups and to develop a more detailed study of graduates' experiences of work in different kinds of 'large' firms (see Section 10.5 for more details).

## 10.4 Implications for practice and policy

### 10.4.1 For current students and recent graduates

The implications of this research for current students and recent graduates thinking about employment in a small business for a particular occupation and industry are that, from a narrow skill utilisation perspective, employer size does not matter much, so working in a small company is as good as in a large company. However, students and recent graduates considering small businesses as employers should bear in mind that working in small firms is also associated with lower pay and lower satisfaction with career development and promotion prospects (consistent with other research).

Second, current students and recent graduates may wish to consider whether they prefer a more formal, structured environment for career development, or a more open, informal, and flexible one. Informal career development environments are more prevalent in small businesses, and that businesses tend to formalise as they grow. This research has shown that graduates were able to take on additional responsibilities to develop skills and knowledge in both types of environment, but that in the more formal context, opportunities to do so were for the *taking*, and in the informal context – for the *making*. Thus, those students and recent graduates considering employment in a small company should be aware that they may have to be proactive to create such opportunities: in the words of one interviewee, Ruth, “*It’s not already laid out for you in a small company.*” Moreover, intervening factors may facilitate their success of ‘making opportunities’, including employer willingness to listen to suggestions, adequate organisational slack, and supportive employment relations. Personal capabilities, such as being a “self-starter,” working well independently, and generally being “self-reliant” may also contribute to the success of making opportunities. Informality, too, has a price: too little support or poor employment relations with managers may be more difficult to deal with in smaller companies than in large firms because of less formal procedures and working arrangements.

Third, this thesis has told a largely positive story of graduates’ experiences of work in small firms, which should be encouraging to students and graduates considering such work. This research has shown that working in a small company can lead to rapid progression at the initial stage, and there is tentative evidence to suggest that initial progression may be faster in a small company than in a large company for a similar job and tenure. However,

students and graduates should also be aware that working in a small business may result in reaching a 'career plateau' faster than at a large company, with limited or no opportunities for further promotion. This situation may be accentuated by little or no business growth or a lack of organisational resources. Thus, students and graduates should also be prepared to consider possible 'exit routes': what they could do if they find themselves in this situation, for example, find a job with another employer, become self-employed, or undertake further training or education.

Ultimately, a take-away message from this thesis of relevance to current students and recent graduates considering work in small businesses is that the initial large range of experience gained in a small company *can* have a positive effect on later employment. Whether this finding is limited to 'elite' graduates in their early careers remains an issue for further research. The thoughts of one interview respondent who was very positive about her experience summarise some of the costs and benefits of working in small firms:

***Q: What would you say to a graduate interested in working for a small business?***

*I'd say definitely do it. My two flat mates both work in large companies, one in management consultancy and the other in a law firm. And from straight away I had a lot more responsibility than they did. Now we're three years in, and some of them are still doing some very basic jobs, of course eventually they'll get lots of responsibility. The only thing is the pay is not as good compared to the big firms. By the end, my salary almost doubled, so over the three years the growth was really big, but the starting salary was low and that switches a lot of people off straight away. But I think the career progression is much quicker and there are better opportunities. I would recommend it. It depends a bit on you. Some people like working in a city, like wearing a suit, like the big name on their CV, whereas that wasn't really that important for me. (Claire)*

#### **10.4.2 For small business employers**

This research has implications for how small business employers can make use of graduates. The interviews with graduates in this thesis have demonstrated good and bad employment practices, as perceived by graduates. While the interviews focused on graduates employed in small firms predominantly in the professional and business services, some of the findings are likely to hold for small businesses across the industry spectrum

(see also Section 10.5). Some of these practices have influenced graduates' decisions to stay the small company or to leave.

Small business employers may consider the following suggestions to make the most use out of graduate employees, as implied by the findings in this thesis:

- Give graduate employees challenging and interesting work, and enough support to carry this out. Supporting graduates need not take up a lot of business resources - informal mentoring or shadowing could be enough. This is especially important if this is graduates' first job since leaving university. Graduates tend to have good research skills and a high ability to learn, and should adapt to the organisation quickly – if supported.
- Take graduates' (and employees') suggestions about the business into account and act on these suggestions if appropriate. This type of behaviour has been shown to be positively associated with employee engagement and commitment to the firm.
- Work together with graduates to support them in their career development to enable them to make their own opportunities. Their peers in large businesses will typically be following a structured career progression path which usually incorporates training and other development opportunities. It is not necessary to implement such a formal scheme in a small business; indeed, graduates who choose to work in small businesses often appreciate the freedom and flexibility to develop their skills at their own pace. However, if they are not developing their skills, they will most likely look for work elsewhere.
- Graduate retention may not be a large concern. Research on graduate retention found that most SMEs surveyed thought that they could retain the graduates they wanted to keep (Phillips and Donnelly, 2013; King, 2003) with only a minority (11%) finding it difficult to retain 'the best' (Phillips and Donnelly, 2013). However, it may be unfair to expect graduates who have only recently left university to remain with the small business for a long time. Increasingly, graduates are changing employers early in their careers to develop their skills. However, this does not mean that the small business should not invest in its graduate employees. In a supportive and encouraging environment, graduates will be eager to rise to challenges, learn new things, and contribute to business performance.

### 10.4.3 For university careers services

Careers advisers and careers services resources could consider the following approaches to help graduates use their knowledge and skills in small firms, and to encourage small firms to develop graduates' skills:

- First, to improve information available to students about employment in small firms in the local area and at a national context, as information about employment with large firms or those typically recruiting graduates tends to be more readily available. Depending on data availability, careers services could show the progression routes of alumni who started off being employed in small firms, to illustrate the possible career pathways to current students.
- Careers advisers could suggest work placements in small firms to students, both as a way of improving students' work experience and understanding of working in a small firm environment and of developing links between small firms and the HEI. However, as small firms are often diverse in management styles and cultures, students should also be made aware of the variety of experiences that they might have.
- Third, careers services could engage in fostering links with small firms, to improve their visibility to students as prospective employers, and to encourage small firms to meet with and recruit more graduates. One issue often facing small firms that do wish to engage with universities is the financial and time cost of exhibiting at a university careers fair – as small firms tend to have much fewer resources than their larger counterparts these costs can often be prohibitive. University careers fair organisers should do more to facilitate small firms, for example by offering discounted rates for exhibitions, more flexible ways in which to exhibit, and maintaining good communications with interested small firms.
- Careers services could also provide more information and resources about entrepreneurial opportunities for students and recent graduates who wish to become self-employed, for example, practical, legal, and commercial advice, as well as career self-management and self-reliance. Some of this information, such as advice about developing a commercial awareness, would be useful for graduates working in a small company. However, such resources can also be useful for graduates who have reached a plateau in a small firm and whose 'exit route' is starting their own business.

#### 10.4.4 For policymakers

Policymakers at the local, regional, and national levels can help small businesses make better use of graduates in the following ways:

Regarding policy relating to small businesses and graduate employment, this thesis has shown that graduates considered small businesses to be effective graduate employers that enabled them to use their knowledge and skills and develop their careers, providing that there was a good working environment. The emphasis on the business environment was key. Thus, policymakers could provide support to small businesses to enable them to make better use of graduate employees. This support could take different forms. For example, for businesses that have limited financial resources to offer training to graduate employees, funds or subsidies could be made available. Existing national schemes such as *Step* (formerly the *Shell STEP programme*), and regional development schemes such as *Graduates into Enterprise* (run by Mansfield and Ashfield district councils) could be offered more government support. The administrative burden to small firms should be as low as possible to encourage small businesses to make use of new and/or existing schemes. Policymakers could also offer more support to small business employees, to enable employees to attend training courses or otherwise use and develop their skills and knowledge.

Policymakers should not underestimate the heterogeneity of small firms. While initiatives bringing together small firms and HEIs, as well as the web-based recruitment platform proposed by Sear et al. (2012) will likely be useful for small firms that are interested in hiring graduates, they may have only a limited impact on other firms which have little interest in doing so. One policy implication is to disseminate examples or case studies of best practice and successful graduate employment outcomes. Studies of best practice based on the *Shell STEP* scheme (Westhead and Matlay, 2001) have been a good example of this. While the findings from this thesis have only limited implications for policymakers regarding firms not interested in hiring graduates, for 'accidental' graduate recruiters wanting to make the most of their employees to improve business performance, support should be made available, as discussed above. Enabling small businesses to make better use of graduates is likely to have a number of benefits. Many UK graduates gravitate towards London because it offers more graduate job opportunities, even if they previously studied at university in another UK region (see, for example, Purcell et al., 2013, p. 47). If

small businesses are able to attract and retain graduates, even for 1-2 years, this would make a contribution to the local economy.

This thesis research has considerable policy implications for graduates' career development in small firms. There is some evidence that suggests that after two to three years of working with a small employer, graduate employees are likely to reach a career plateau, where they are no longer able to progress in the firm because of limited internal labour markets. Implications of the career plateau for subsequent employment outcomes are unclear. Although the interviewed graduates told largely positive stories, this is unlikely to be true for all graduates in small firms. Therefore, the possibility of limited career development in small firms requires a rethink of a policy that encourages graduates to work in small firms without appreciating the likely effects on graduates' subsequent career development. Continuing to work with the same employer while at a career plateau can have adverse individual psychological effects, and is also a waste of human capital, as graduates could be making more use of their potential and developing their knowledge and skills elsewhere. Policymakers can therefore help graduates in small businesses who have reached a career plateau with mitigate their situation, by helping improve their opportunities in small firms, or by enabling potential exit routes.

- First, policymakers could help develop small firms' capacity to grow, for example by enabling a healthy economic context with enough business demand to justify firm growth, however this may not always be possible or achievable. In this case, graduates will need an 'exit route' from the small firm.
- One exit route for graduates in this situation is to find jobs in other companies. In order to be successful, graduates should have a good set of experience and responsibility, which they will be able to develop with a small employer. Policymakers could support small firms and their employees as discussed above facilitate is to enable skill development to take place.
- Another exit route for graduates is self-employment or entrepreneurship, although this may only be applicable to some graduates. Policymakers could encourage and support self-employment and entrepreneurship by providing funding, schemes, training, and resources for potential entrepreneurs. The link between small firm employment and entrepreneurship requires more investigation, but even in this thesis, several graduates mentioned that they had, or were interested in working

freelance or starting their own business, and that working in a small firm helped them learn more about business operations.

- A third exit route is for graduates to undertake further training or education to further their employment opportunities. Policymakers can assist such graduates by maintaining government-funded training schemes, and considering the effect of student debt on attitudes and capacity to undertake further HE study. *Futuretrack* research has suggested that approximately half of graduates wanted to do a postgraduate course but did not want to add to their debts (Purcell et al., 2013). Initiatives such as the Postgraduate Loans,<sup>204</sup> which are provided by the Student Loans Company and will lend up to £10,000 to eligible graduates to study for a Master's degree, are a step towards assisting graduates in their further education opportunities.

## 10.5 Limitations and directions for further research

The main limitations of this thesis research relate to six factors: (1) the qualitative interview sample predominantly constituted elite graduates, which has implications for generalisability; (2) the graduates' small employers in this study were not typical of small firms as a whole; (3) it was not possible to explore how employment in a small business affected subsequent employment using the *Futuretrack* survey; (4) large firms were treated as one category and not investigated in detail; (5) graduates' gender was not a main variable of investigation; and (6) small firm managers' views were not investigated. These limitations, and ways in which they might be overcome through further research, are discussed below.

### 10.5.1 Limitations

The decision to interview a homogeneous sample of elite graduates was discussed and defended in Section 3.3.5.2. However, elite graduates tended to possess relative advantages in terms of human and social capital and economic resources that make it difficult to generalise from their experiences to all graduates employed in small firms. In addition, the graduates' small employers were atypical of small firms as a whole because they tended to be located in the high-level business services industry and thus tended to be familiar with recruiting and employing graduates. While it is possible to limit the generalisability of the findings to similar elite graduates in similar jobs, some aspects of the

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<sup>204</sup> [http://www.practitioners.slc.co.uk/media/6854/sfe\\_pgl\\_qg\\_1617\\_d.pdf](http://www.practitioners.slc.co.uk/media/6854/sfe_pgl_qg_1617_d.pdf)

findings are likely to hold more widely. Specifically, the graduates' sense of having to 'do everything' has been found in existing research, and the issue that small or flat-structured businesses were more likely to present career plateau problems to employees has also been mentioned in the literature although not explicitly investigated. Future research could follow up different groups of graduates, for example, those from post-1992 universities, to explore their experiences of employment in small firms.

The qualitative part of the research could not facilitate comparison of how and why graduates employed in small and in large businesses changed employers, because six out of seven graduates employed in large businesses at the time of the *Futuretrack* survey had not changed their employers at the time of the interview. This remains an issue for further research that I hope to be able to conduct in the future. One way in which this issue could be explored is through analysing other graduate surveys, such as the *Class of '99*, which have data on employer size throughout the graduates' employment activity histories, to compare how initial employment in similar occupations but in different employer size affected subsequent career development.

This thesis did not disaggregate the 'large' firm category (see also Section 1.5), which comprised those firms with 250 employees through to those with tens of thousands of employees. There is likely to be considerable variation in terms of firm resources, opportunity for internal mobility and career development depending on whether the firms is on the smaller or larger end of the 'large' firm scale. Future research could investigate whether there are implications for skill utilisation and career development for graduates in different types of large firms.

This thesis did not directly address potential or actual gender differences in graduates' early career knowledge and skill utilisation and career development. This decision was made on the grounds that there was little evidence that gender substantially affected skill utilisation and career development for young graduates in the very early careers, especially within occupations. In the quantitative phase of the study, gender was not a significant variable for the likelihood of using degree skills or degree knowledge at work, nor for working in a job for which a degree was required, nor for job appropriateness (although gender was significant for some of the specific skills, see Tables Table 6.3, Table 6.6 and Table 6.9). Although there is evidence of a small unexplained wage gap at the early career

stage (2.1% (Chevalier, 2007, with career break expectations being one of the main gap drivers) or 5% (Purcell et al., 2013)), the majority of research on the topic suggests that the gender pay gap is low for those aged between 16-29 and increases with age thereafter, which coincides with the childbearing and rearing age (e.g. Close the Gap, 2014; ONS, 2013b; Perfect, 2011; Leaker, 2008). Thus, the implications of gender for this thesis are that while there may be some differences, for highly qualified, young, single graduates, controlling for occupational choice, gender is unlikely to be a *main* source of difference in early career outcomes at this stage. Furthermore the issue of labour market segregation does not apply in the qualitative phase of the study, as it is limited to the private sector and compares graduates working in similar occupations. The childbearing issue can have especially acute implications for women's career development if they are employed in small businesses, as smaller enterprises typically have fewer resources to arrange maternity cover to ensure continuity or work (EOC, 2005), but again, this generally applies to a slightly older cohort than that used in the PhD. An interesting question for further research is whether and how gender affects skill utilisation and career development, taking a longer career perspective, as it will be at this point that family considerations start to affect graduates' decisions in a more significant way.

Lastly, this thesis did not include small firm managers' views nor systematic information about graduates' employers and the workplace environments (*Futuretrack* focused exclusively on the graduates' accounts). Future research could survey small and large company managers, asking about their perceptions of graduate employees' knowledge and skill utilisation, and the work environment, with respect to the findings of this study. Existing secondary datasets can also be analysed with the view to look for associations between measures of skill utilisation and the work environment in different sized businesses, where possible with respect to early career graduate employees.

### 10.5.2 Directions for future research

The main findings from this thesis, discussed in Section 10.2, and the limitations of this thesis, discussed above, raise directions for further research, some of which, such as extending the scope of the research, have already been discussed in the section above. This section highlights the two main future research directions from this thesis research.

***Develop 'taking' and 'making' opportunities and 'growing' jobs***

The qualitative part of the research has suggested that business size was related to taking and making opportunities, but it was not possible to say precisely how, and whether making opportunities was specific to small firms. Future research should therefore investigate in what contexts taking and making opportunities take place, and how taking and making opportunities is associated with constructs such as job satisfaction, career development, skill utilisation, and 'growing' jobs. Questions would include: what are the facilitating and impeding factors that affect growing jobs? Can the concept of 'growing' a job be connected to the concept of 'job crafting,' (Wrzesniewski and Dutton, 2001) to explore mechanisms through which jobs can be 'grown'? What are the employment outcomes associated with being able to 'grow' jobs (e.g.: career progression, opportunity for knowledge and skill use, employer-assisted upgrading through changing the job design)? The aim of such research would be to create a typology of how jobs can be grown across the labour market.

***Examine employment trajectories after initial employment in a small business***

The qualitative part of this thesis research has also raised the question of how graduate employment in a small firm affects subsequent employment outcomes. If it is the case that graduates are likely to change jobs sooner when working for a small employer than for a large one, is their next job more likely to be at a higher, same, or lower level than their previous job? Some research has already shown that initial labour market entry into low-skill jobs leads to persistent negative consequences for subsequent employment trajectory at the individual level (Scherer, 2004). It is therefore important to investigate how graduates whose first job is in a small business progress in later employment compared to graduates in large businesses, controlling for occupation, industry, and personal characteristics using a quantitative approach, supplemented with qualitative investigations for graduates in different parts of the labour market (e.g. employed in different occupations and/or different industries). Differences in career trajectories, if discovered, would highlight where changes to career development in small firms from a business or policy perspective could improve outcomes for graduates.

## 10.6 Concluding statement

This mixed-methods research project investigated whether employment in small firms affected graduates' perceptions of using knowledge and skills at work and experiences of early career development, and found a partial size effect. Little association was found between employer size and graduates' use of the knowledge and skills developed during their university degrees. However, some evidence suggested that there were different ways in which the graduates were taking on additional responsibilities: those in larger companies were more likely to have formal systems in place for career development and were able to *take* opportunities, while those in small companies had to be more self-reliant and *make* opportunities to take on responsibility quickly and 'grow' their jobs.

However, this development came at a price: graduates in small businesses also tended to reach a plateau relatively quickly, which compelled them to change employers. In most cases, these graduates thought that their high levels of responsibility and extensive experience in small businesses helped them go on to get better jobs. But it is not clear to what extent these findings will hold for graduates in small firms more generally, and not just for the graduates similar to those interviewed. Therefore, the consequences of working in a small firm for graduates' future career development are unclear.

These findings therefore make an important theoretical contribution, demonstrating that, even in a narrowly defined occupation and industry group, business size does have a partial and qualified effect on graduates' experience of work and career development. The findings also have significant implications for policy, recommending that graduates' career development consequences should be taken into account when encouraging graduates to work in small firms.

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## Appendix A: Additional tables

Table A.1: Descriptive statistics of graduates' skill utilisation variables

Variables	Unweighted			Weighted				Min	Max
	Observations	Mean	SD	Mean	SE	[95% CI]			
<i>Whether used degree skills or knowledge</i>									
Used undergraduate course skills in current main job	4337	0.75	0.43	0.72	0.01	0.70	0.74	0	1
Used subject or discipline knowledge in current main job	4338	0.53	0.50	0.53	0.01	0.51	0.55	0	1
<i>Extent to which required to use the following skills and capabilities</i>									
Written communication (Writ)	4562	1.45	0.67	1.45	0.01	1.43	1.48	0	2
Spoken communication (Spk)	4560	1.79	0.44	1.79	0.01	1.78	1.81	0	2
Numerical analysis skills (Num)	4558	1.19	0.71	1.20	0.01	1.18	1.22	0	2
Critical evaluation (Crit)	4559	1.17	0.77	1.16	0.01	1.14	1.19	0	2
Research skills (Res)	4562	0.91	0.76	0.91	0.01	0.88	0.93	0	2
Presentation skills (Pres)	4557	0.90	0.75	0.89	0.01	0.86	0.91	0	2
Innovative thinking (Innv)	4560	1.22	0.71	1.23	0.01	1.20	1.25	0	2
Entrepreneurial skills (Entr)	4558	0.57	0.68	0.56	0.01	0.54	0.59	0	2
Ability to work in teams (Team)	4561	1.66	0.55	1.66	0.01	1.64	1.68	0	2
Ability to work individually (Ind)	4561	1.76	0.46	1.76	0.01	1.75	1.78	0	2
Ability to manage my time effectively (Time)	4562	1.77	0.48	1.78	0.01	1.76	1.79	0	2
<i>Job fit</i>									
Job required a degree (any)	4329	0.61	0.49	0.56	0.01	0.55	0.58	0	1
High job appropriateness	4569	0.40	0.49	0.39	0.01	0.38	0.41	0	1

Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed. Weighted and unweighted means shown.  $\alpha=.86$

Table A.2: Descriptive statistics of graduates' skill utilisation variables by employer size

	<u>Micro</u>			<u>Small</u>			<u>Medium</u>			<u>Large</u>			<u>Total</u>		
	N	mean	sd	N	mean	sd	N	mean	sd	N	mean	sd	N	mean	sd
<i>Whether used degree skills or knowledge</i>															
Used undergraduate course skills in current main job	366	0.53	0.50	643	0.57	0.50	561	0.59	0.49	2690	0.52	0.50	4260	0.54	0.50
Used subject or discipline knowledge in current main job	366	0.72	0.45	642	0.75	0.43	560	0.79	0.41	2691	0.75	0.43	4259	0.75	0.43
<i>Extent to which required to use the following skills and capabilities 'a lot' of the time</i>															
Written communication (Writ)	415	0.51	0.50	682	0.58	0.49	586	0.56	0.50	2788	0.56	0.50	4471	0.56	0.50
Spoken communication (Spk)	415	0.78	0.42	682	0.78	0.42	585	0.76	0.43	2787	0.82	0.38	4469	0.80	0.40
Numerical analysis skills (Num)	414	0.27	0.45	681	0.29	0.45	586	0.32	0.47	2786	0.41	0.49	4467	0.37	0.48
Critical evaluation (Crit)	416	0.31	0.46	681	0.36	0.48	585	0.37	0.48	2786	0.42	0.49	4468	0.39	0.49
Research skills (Res)	416	0.27	0.44	682	0.30	0.46	586	0.26	0.44	2787	0.23	0.42	4471	0.25	0.43
Presentation skills (Pres)	416	0.21	0.41	679	0.24	0.43	586	0.22	0.42	2785	0.24	0.43	4466	0.24	0.43
Innovative thinking (Innv)	415	0.41	0.49	681	0.42	0.49	585	0.41	0.49	2788	0.38	0.49	4469	0.39	0.49
Entrepreneurial skills (Entr)	415	0.16	0.37	681	0.11	0.31	584	0.11	0.31	2787	0.10	0.30	4467	0.11	0.31
Ability to work in teams (Team)	414	0.48	0.50	682	0.64	0.48	585	0.65	0.48	2789	0.75	0.43	4470	0.69	0.46
Ability to work individually (Ind)	414	0.79	0.41	682	0.81	0.39	585	0.81	0.40	2789	0.76	0.42	4470	0.78	0.42
Ability to manage my time effectively (Time)	416	0.75	0.43	681	0.81	0.40	585	0.80	0.40	2789	0.81	0.39	4471	0.80	0.40
<i>Job fit</i>															
Job required a degree (any)	366	0.53	0.50	641	0.60	0.49	560	0.63	0.48	2685	0.62	0.48	4252	0.61	0.49
High job appropriateness	416	0.38	0.49	682	0.40	0.49	587	0.41	0.49	2794	0.41	0.49	4479	0.40	0.49

Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed. Unweighted skill utilisation observations, means, and standard deviations by business size.

Table A.3: Descriptive statistics of regressors

Variables	Unweighted			Weighted				Min	Max
	Observations	Mean	SD	Mean	SE	[95%	CI]		
<i>Business size</i>	<i>Total = 4,481</i>								
Micro	416	0.09	0.29	0.09	0.01	0.08	0.11	0	1
Small	682	0.15	0.36	0.16	0.01	0.14	0.17	0	1
Medium	587	0.13	0.34	0.14	0.01	0.12	0.15	0	1
Large organization	2,796	0.62	0.48	0.61	0.01	0.60	0.63	0	1
<i>Occupation</i>	<i>Total = 4,304</i>								
Managers, directors and senior officials	169	0.04	0.19	0.04	0.00	0.03	0.05	0	1
Professional occupations	1,316	0.31	0.46	0.29	0.01	0.27	0.30	0	1
Associate professional and technical occupations	1,207	0.28	0.45	0.28	0.01	0.26	0.30	0	1
Administrative and secretarial occupations	674	0.16	0.36	0.15	0.01	0.13	0.16	0	1
Skilled trades occupations	48	0.01	0.11	0.01	0.00	0.01	0.02	0	1
Caring, leisure and other service occupations	129	0.03	0.17	0.03	0.00	0.03	0.04	0	1
Sales and customer service occupations	533	0.12	0.33	0.14	0.01	0.13	0.15	0	1
Process, plant and machine operatives	21	0.00	0.07	0.01	0.00	0.00	0.01	0	1
Elementary occupations	207	0.05	0.21	0.06	0.00	0.05	0.06	0	1
<i>Industry</i>	<i>Total = 4,558</i>								
Agriculture, mining, quarrying (includes gas extraction)	124	0.03	0.16	0.03	0.00	0.02	0.03	0	1
Manufacturing	457	0.10	0.30	0.10	0.01	0.09	0.11	0	1
Electricity, gas, water supply	114	0.03	0.16	0.03	0.00	0.02	0.03	0	1
Construction (includes civil engineering)	171	0.04	0.19	0.04	0.00	0.03	0.05	0	1
Distribution, hotels, catering (includes retail)	1,011	0.22	0.42	0.23	0.01	0.22	0.25	0	1
Transport and tourist services	193	0.04	0.20	0.05	0.00	0.04	0.05	0	1
Information and communications sector	599	0.13	0.34	0.14	0.01	0.13	0.15	0	1
Banking, finance, insurance	596	0.13	0.34	0.12	0.01	0.11	0.13	0	1
Business services (includes legal services)	797	0.17	0.38	0.16	0.01	0.15	0.17	0	1
Education (includes schools, colleges, etc.)	250	0.05	0.23	0.05	0.00	0.04	0.06	0	1
Other public services (local or central government)	246	0.05	0.23	0.05	0.00	0.05	0.06	0	1

Cont'd.

Appendix A: Additional tables

Variables	Unweighted			Weighted				Min	Max
	Observations	Mean	SD	Mean	SE	[95% CI]			
<i>Personal characteristics</i>									
Female	4,572; 1=2,553	0.56	0.50	0.50	0.01	0.48	0.51	0	1
Mature student 21+	4,562; 1=436	0.10	0.29	0.14	0.01	0.13	0.16	0	1
Non-white ethnic group	4,567; 1=548	0.12	0.32	0.11	0.01	0.10	0.12	0	1
Routine and manual occupations	4,298; 1=896	0.21	0.41	0.24	0.01	0.22	0.25	0	1
<i>HEI type and STEM subject dummy</i>									
	Total = 4,567								
Highest tariff	1,656	0.36	0.48	0.27	0.01	0.26	0.29	0	1
High tariff	1,208	0.26	0.44	0.24	0.01	0.23	0.26	0	1
Medium tariff	1,177	0.26	0.44	0.33	0.01	0.31	0.34	0	1
Lower tariff	341	0.07	0.26	0.10	0.01	0.09	0.12	0	1
Other	185	0.04	0.20	0.06	0.00	0.05	0.06	0	1
STEM subject dummy	4,562; 1=1,997	0.44	0.50	0.44	0.01	0.42	0.46	0	1
<i>Self-confidence</i>									
High self-confidence	4,551; 1=2,293	0.50	0.50	0.52	0.01	0.50	0.54	0	1

Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed. Weighted and unweighted means shown. Note that the biggest discrepancy is between weighted and unweighted means of respondents who graduated from highest tariff HEIs – this is to be expected as the weights adjust for HEI access tariff points, as discussed earlier.

**Table A.4: Mean self-reported frequency of using specific skills at work, by employer size**

<b>Skills</b>	<b>Micro</b>	<b>Small</b>	<b>Medium</b>	<b>Large</b>
Written communication	1.38	1.46	1.48	1.46
Spoken communication*	1.76	1.77	1.74	1.81
Numerical analysis skills***	1.05	1.09	1.14	1.25
Critical evaluation*	1.04	1.11	1.17	1.20
Research skills***	0.94	0.99	0.97	0.87
Presentation skills	0.80	0.88	0.88	0.92
Innovative thinking	1.26	1.26	1.25	1.21
Entrepreneurial skills***	0.72	0.59	0.55	0.54
Ability to work in teams***	1.40	1.59	1.60	1.72
Ability to work individually	1.77	1.79	1.79	1.75
Ability to manage my time effectively	1.71	1.77	1.78	1.79

Source: Futuretrack Stage 4, UK-domiciled, UK-university first-degree graduates only, private sector, non-self-employed, unweighted percentages. Statistical association between skill use and business size, \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ , design-based F statistic.

Table A.5: Likelihood of reporting being required to use 11 specific skills at work, ordered logit (odds ratios)

	Writ	Spk	Num	Crit	Res	Pres	Innov	Entrepr	Team	Indiv	Time
Micro	0.720**	0.802	0.791*	0.707**	1.254	0.685**	1.184	1.941***	0.292***	1.127	0.559***
Small	0.842	0.82	0.743***	0.743**	1.256*	0.809*	1.06	1.229*	0.550***	1.143	0.717**
Medium	0.778*	0.706**	0.820*	0.808*	1.092	0.779**	0.972	1.14	0.605***	1.055	0.691**
<b>Large organization (ref.)</b>											
Managers, directors and senior officials	0.681*	4.731***	0.963	0.579**	0.376***	0.878	0.904	2.039***	1.639*	0.684	0.826
<b>Professional occupations (ref.)</b>											
Associate professional and technical occupations	1.173	1.146	0.747***	0.646***	0.664***	0.922	0.776**	1.195*	0.91	0.997	0.987
Administrative and secretarial occupations	0.718**	0.696**	0.938	0.286***	0.249***	0.250***	0.238***	0.563***	0.566***	0.690**	0.529***
Skilled trades occupations	0.313***	0.575	0.525*	0.274***	0.189***	0.332***	0.440**	0.664	1.029	0.609	2.638
Caring, leisure and other service occupations	0.209***	1.208	0.346***	0.239***	0.128***	0.234***	0.330***	0.280***	1.386	0.471**	0.347***
Sales and customer service occupations	0.182***	1.339	0.410***	0.150***	0.0943***	0.203***	0.164***	0.524***	0.592***	0.455***	0.212***
Process, plant and machine operatives	0.113***	0.257**	0.0908***	0.156***	0.0288***	0.0274***	0.0973***	0.148**	0.248**	0.257**	0.233**
Elementary occupations	0.0631***	0.654*	0.198***	0.0711***	0.0298***	0.0982***	0.101***	0.332***	1.021	0.275***	0.161***
Agriculture, mining, quarrying (includes gas extraction)	0.922	0.794	0.605*	0.989	0.874	0.916	0.909	0.726	0.624*	1.936*	0.901
Manufacturing	0.863	0.76	0.532***	0.765*	0.853	1.063	1.308*	0.905	0.668**	1.276	0.777
Electricity, gas, water supply	1.061	0.741	0.626*	0.794	0.795	0.818	0.933	0.72	0.797	0.916	0.647
Construction (includes civil engineering)	1.423	0.959	0.637*	0.862	0.85	1.336	1.262	0.842	1.193	0.909	1.133
Distribution, hotels, catering (includes retail)	0.348***	1.063	0.425***	0.452***	0.483***	0.801	1.002	1.324*	0.962	0.670**	0.545***
Transport and tourist services	0.917	2.056*	0.452***	0.588**	0.833	1.175	1.475*	1.537*	0.642*	1.745*	0.924
Information and communications sector	1.137	0.586***	0.231***	0.681**	1.048	0.764*	1.624***	0.897	0.982	1.339	1.044
<b>Banking, finance, insurance (ref.)</b>											
Business services (includes legal services)	1.529**	0.884	0.370***	0.958	1.510***	1.09	1.491***	1.282*	0.720*	1.187	1.207
Education (includes schools, colleges, etc)	0.724	1.594	0.137***	0.407***	0.508***	1.943***	1.582**	0.547***	0.395***	1.135	1.587
Other public services (local or central government)	0.743	1.462	0.238***	0.464***	0.617**	0.641**	0.999	0.897	0.788	0.983	0.757
Female - dummy	1.497***	1.389***	0.705***	0.670***	0.996	0.996	0.807**	0.939	1.285**	1.359***	1.815***
Mature student - 21+	0.941	0.865	0.829	1.036	0.945	0.944	0.829	0.828	0.771*	1.049	1.145
Dummy for ethnicity	0.835	0.939	0.957	0.999	0.94	0.925	0.999	1.209	0.91	1.014	0.764
Routine and manual occupations	0.882	0.957	1.075	0.991	0.949	0.736***	0.915	0.967	0.891	0.843	0.797*
<b>Highest tariff (ref.)</b>											
High tariff	0.976	1.144	0.904	0.791**	0.887	0.918	0.965	0.961	1.071	1.179	1.031
Medium tariff	1.008	1.339*	1.04	0.819*	0.975	0.899	1.104	0.843	1.096	1.258*	1.324*
Lower tariff	1.024	1.317	1.056	0.89	1.203	0.974	1.24	0.689**	1.288	0.95	1.355
Other	1.183	1.197	0.916	1.007	1.568**	1.398*	1.304	1.059	1.16	0.874	1.056
STEM subject dummy	0.661***	0.763**	1.209**	1.031	0.662***	0.619***	1.004	0.783***	1.161	0.992	0.905
High self-confidence	1.281***	1.494***	1.224**	1.541***	1.218**	1.557***	1.464***	1.592***	1.342***	1.324***	1.434***
Cut 1	-3.530***	-4.253***	-3.158***	-2.921***	-2.020***	-1.678***	-2.326***	0.117	-3.802***	-4.228***	-4.259***
Cut 2	-0.813***	-1.272***	-0.760***	-0.812***	0.284*	0.513***	0.142	2.234***	-1.181***	-1.173***	-1.862***
Observations	3935	3933	3932	3934	3936	3933	3934	3933	3935	3934	3936
Pseudo R-squared	0.159	0.047	0.078	0.129	0.147	0.098	0.101	0.05	0.044	0.054	0.104
Log lik.	-2977.9	-2012.5	-3706.1	-3650.8	-3611	-3798.2	-3604	-3508.3	-2668	-2145.5	-1936.3

Exponentiated coefficients (odds ratios)

Source: Futuretrack 2006, Wave 4

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

**Table A.6: Descriptive statistics of self-reported frequency of use of eleven skills**

Variable	N	Mean	SD	Min	Max
Written communication (Writ)	4562	1.45	0.67	0	2
Spoken communication (Spk)	4560	1.79	0.44	0	2
Numerical analysis skills (Num)	4558	1.19	0.71	0	2
Critical evaluation (Crit)	4559	1.17	0.77	0	2
Research skills (Res)	4562	0.91	0.76	0	2
Presentation skills (Pres)	4557	0.90	0.75	0	2
Innovative thinking (Innv)	4560	1.22	0.71	0	2
Entrepreneurial skills (Entr)	4558	0.57	0.68	0	2
Ability to work in teams (Team)	4561	1.66	0.55	0	2
Ability to work individually (Ind)	4561	1.76	0.46	0	2
Ability to manage my time effectively (Time)	4562	1.77	0.48	0	2

Source: Futuretrack 2006, Wave 4.

**Table A.7: Descriptive statistics of self-reported frequency of use of eleven skills, standardized**

Variable	Obs	Mean	Std. Dev.	Min	Max
z_Writ	4562	0	1	-2.16403	0.814489
z_Spk	4560	0	1	-4.04579	0.475975
z_Num	4558	0	1	-1.67457	1.139328
z_Crit	4559	0	1	-1.51777	1.084037
z_Res	4562	0	1	-1.19571	1.441389
z_Pres	4557	0	1	-1.19294	1.462762
z_Innv	4560	0	1	-1.7125	1.089942
z_Entr	4558	0	1	-0.8385	2.110488
z_Team	4561	0	1	-3.0074	0.625696
z_Ind	4561	0	1	-3.84076	0.516337
z_Time	4562	0	1	-3.67146	0.470793

Source: Futuretrack 2006, Wave 4.

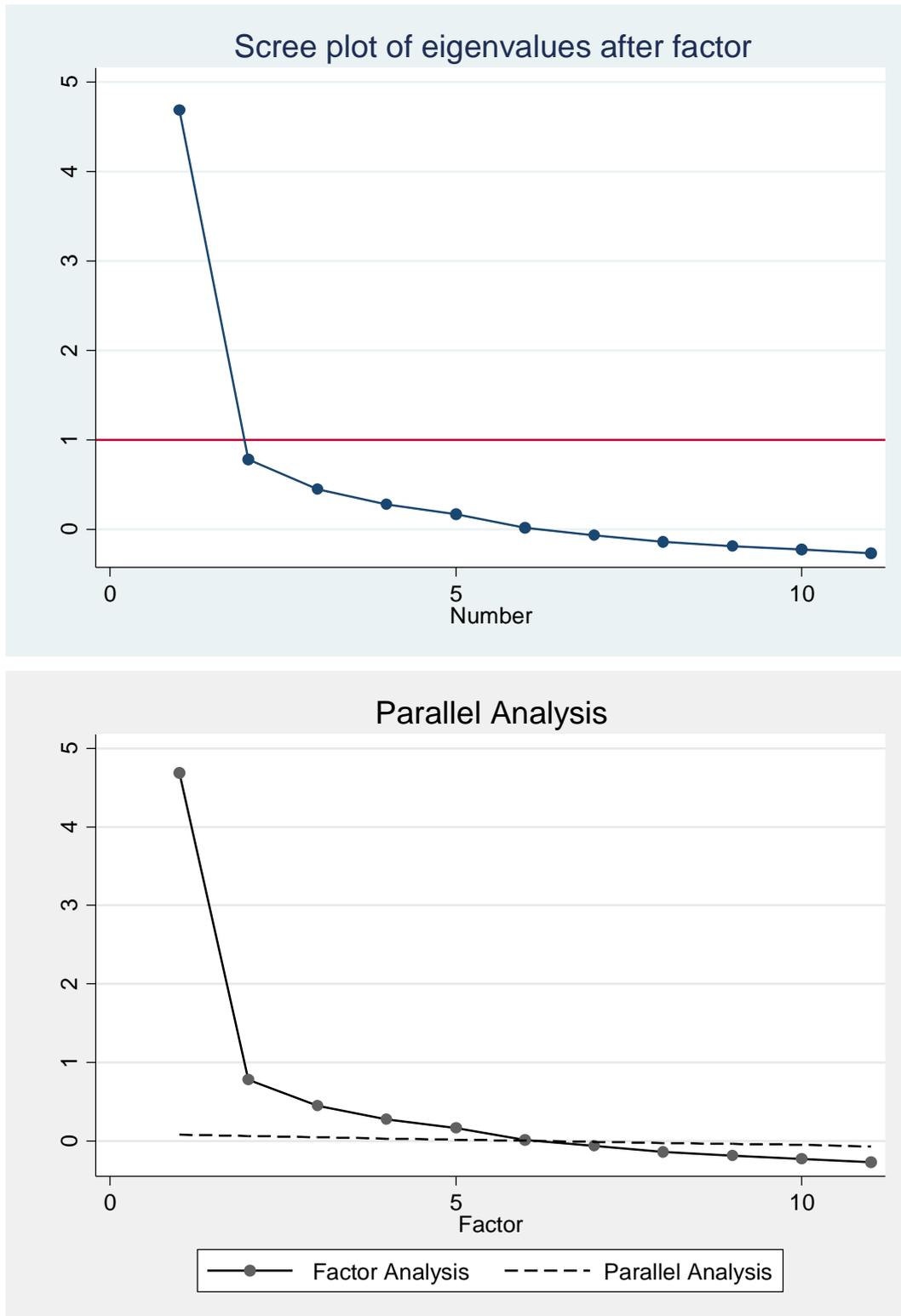
**Table A.8: Polychoric correlation matrix of the self-reported frequency of use of eleven skills**

	Writ	Spk	Num	Crit	Res	Pres	Innov	Entrepr	Team	Ind	Time
Writ	1										
Spk	0.40	1									
Num	0.38	0.23	1								
Crit	0.56	0.23	0.55	1							
Res	0.62	0.14	0.32	0.67	1						
Pres	0.51	0.37	0.26	0.55	0.57	1					
Innov	0.46	0.28	0.31	0.63	0.59	0.63	1				
Entrepr	0.33	0.34	0.29	0.39	0.43	0.51	0.57	1			
Team	0.23	0.50	0.28	0.30	0.16	0.24	0.33	0.22	1		
Ind	0.45	0.27	0.25	0.37	0.37	0.30	0.40	0.25	0.29	1	
Time	0.62	0.40	0.35	0.51	0.50	0.47	0.55	0.33	0.46	0.69	1

Source: Futuretrack 2006, Wave 4.  $N = 4,537$ . A polychoric correlation is used for ordinal variables as it assumes that the variables, here taking values from 0-2, are a truncated form of a continuous variable.<sup>205</sup> The polychoric correlation coefficients give a higher result than the Pearson coefficients, and do not assume normality.

<sup>205</sup> See <http://www.john-uebersax.com/stat/tetra.htm> for more information, and Olsson et al., (1982) for a fuller discussion.

Figure A.1: Scree plot after IPF(2) and parallel analysis



Source: Futuretrack 2006, Wave 4. N = 4,537.

Figure A.2: Factor loadings and score plot, IPF(2)

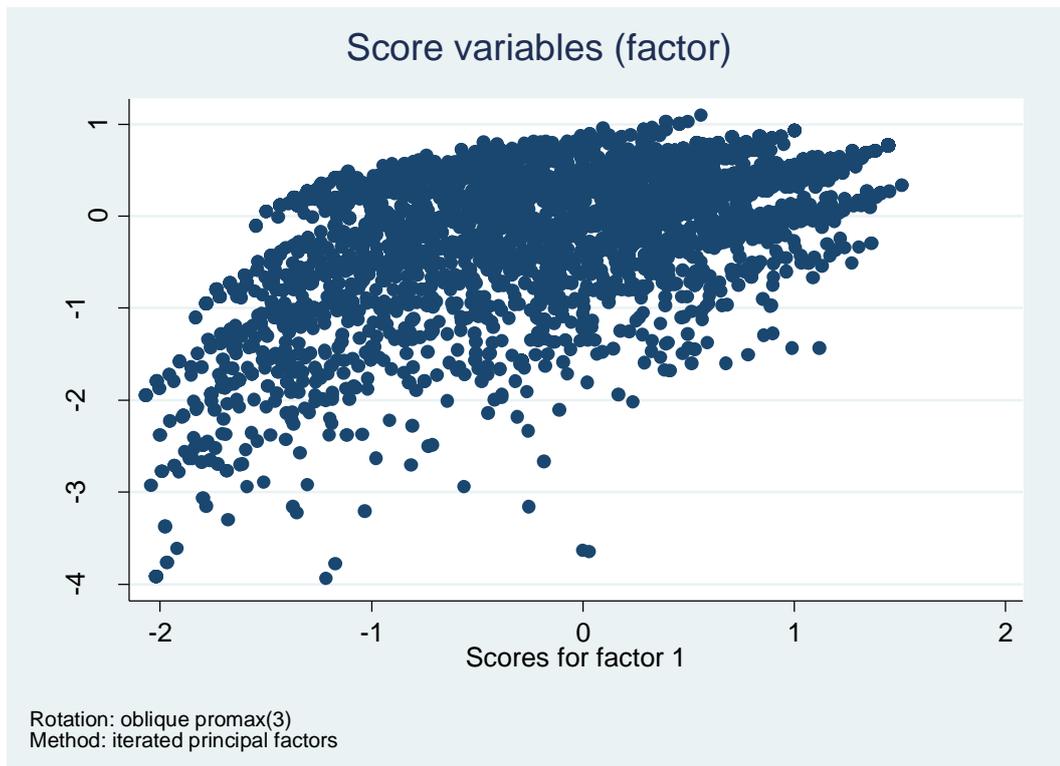
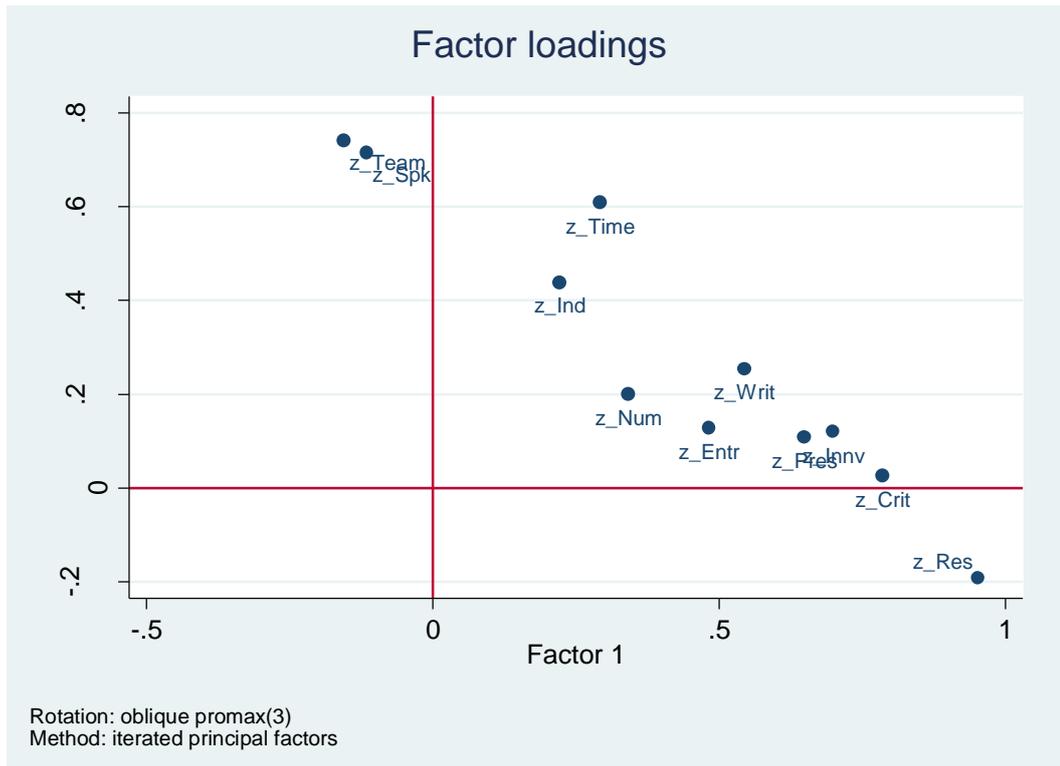
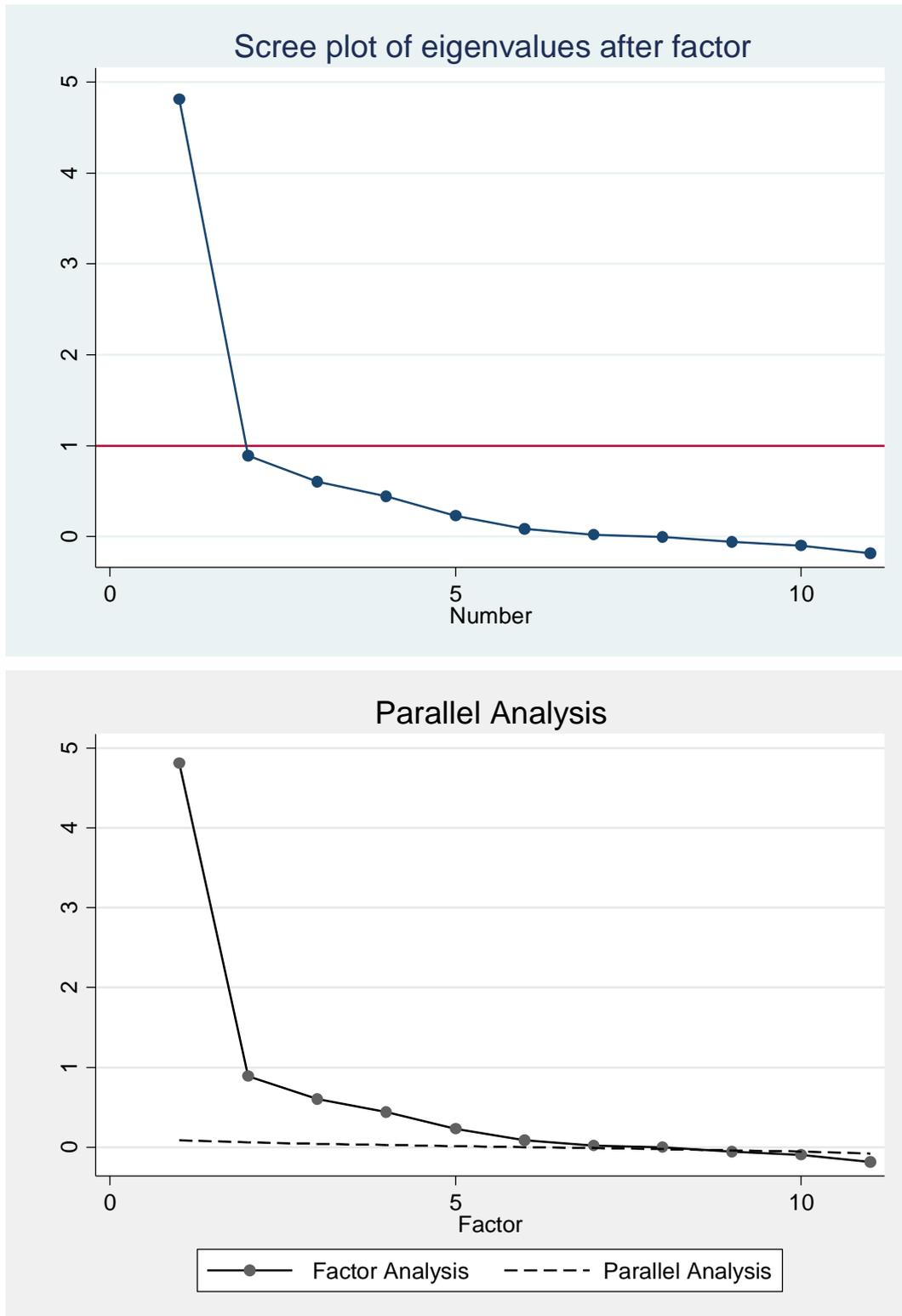


Figure A.3: Scree plot after IPF(4) and parallel analysis



Source: Futuretrack 2006, Wave 4. N = 4,537.



Table A.9: Whether job required a specific /general degree rel. to no degree (odds ratios)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<b>Degree in a specific subject relative to no degree</b>						
Micro	0.773	0.636**	0.618**	0.643*	0.652*	0.652*
Small	0.992	0.768	0.728*	0.729*	0.730*	0.728*
Medium	1.201	0.912	0.886	0.891	0.925	0.926
Large organization	ref.	ref.	ref.	ref.	ref.	ref.
Managers, directors and senior officials		0.0552***	0.0838***	0.0814***	0.0990***	0.0979***
Professional occupations		ref.	ref.	ref.	ref.	ref.
Associate professional and technical occupations		0.167***	0.185***	0.184***	0.221***	0.221***
Administrative and secretarial occupations		0.0302***	0.0352***	0.0350***	0.0426***	0.0428***
Skilled trades occupations		0.0171***	0.0182***	0.0191***	0.0218***	0.0218***
Caring, leisure and other service occupations		0.0207***	0.0257***	0.0258***	0.0282***	0.0284***
Sales and customer service occupations		0.00398***	0.00776***	0.00766***	0.00925***	0.00927***
Process, plant and machine operatives		0.0129***	0.0141***	0.0143***	0.0175***	0.0177***
Elementary occupations		0.00204***	0.00346***	0.00371***	0.00418***	0.00418***
Agriculture, mining, quarrying (includes gas extraction)			3.506***	3.570***	3.355***	3.388***
Manufacturing			2.934***	3.028***	2.948***	2.954***
Electricity, gas, water supply			2.052*	2.259*	2.158*	2.157*
Construction (includes civil engineering)			2.136**	2.263**	2.183**	2.186**
Distribution, hotels, catering (includes retail)			0.452***	0.467***	0.506**	0.507**
Transport and tourist services			0.694	0.712	0.708	0.707
Information and communications sector			1.145	1.165	1.25	1.254
Banking, finance, insurance			ref.	ref.	ref.	ref.
Business services (includes legal services)			1.421	1.454*	1.527*	1.527*
Education (includes schools, colleges, etc)			0.675	0.708	0.818	0.824
Other public services (local or central government)			1.487	1.582	1.544	1.543
Female - dummy				0.96	1.016	1.025
Mature student - 21+				0.546***	0.609**	0.609**
Dummy for ethnicity				1.152	1.251	1.246
Routine and manual occupations				0.783*	0.824	0.825
Highest tariff				ref.	ref.	ref.
High tariff					0.763*	0.764*
Medium tariff					0.712*	0.711*
Lower tariff					0.523**	0.522**
Other					1.216	1.213
STEM subject dummy					1.558***	1.559***
High self-confidence						1.071
<b>Degree in any subject relative to no degree</b>						
Micro	0.559***	0.486***	0.456***	0.476***	0.490***	0.490***
Small	0.727**	0.595***	0.565***	0.558***	0.600***	0.597***
Medium	0.868	0.687**	0.628**	0.621**	0.696*	0.697*
Large organization	ref.	ref.	ref.	ref.	ref.	ref.
Managers, directors and senior officials		0.248***	0.395***	0.358***	0.377***	0.368***
Professional occupations		ref.	ref.	ref.	ref.	ref.
Associate professional and technical occupations		0.445***	0.437***	0.422***	0.473***	0.471***
Administrative and secretarial occupations		0.191***	0.190***	0.178***	0.191***	0.193***
Skilled trades occupations		0.0172***	0.0299***	0.0333***	0.0300***	0.0297***
Caring, leisure and other service occupations		0.0421***	0.0818***	0.0801***	0.0895***	0.0906***
Sales and customer service occupations		0.0254***	0.0451***	0.0434***	0.0497***	0.0500***
Process, plant and machine operatives		1.57E-08	5.27E-08	2.81E-08	5.84E-08	5.97E-08
Elementary occupations		0.00666***	0.0122***	0.0128***	0.0126***	0.0126***
Agriculture, mining, quarrying (includes gas extraction)			0.387*	0.392*	0.504	0.512
Manufacturing			0.464***	0.479***	0.619*	0.621*
Electricity, gas, water supply			0.337**	0.372**	0.434*	0.436*
Construction (includes civil engineering)			0.204***	0.222***	0.325**	0.326**
Distribution, hotels, catering (includes retail)			0.262***	0.266***	0.357***	0.359***
Transport and tourist services			0.440***	0.447**	0.586*	0.580*
Information and communications sector			0.748	0.76	0.88	0.883
Banking, finance, insurance			ref.	ref.	ref.	ref.
Business services (includes legal services)			1.24	1.248	1.422*	1.422*
Education (includes schools, colleges, etc)			0.551**	0.557*	0.636	0.643
Other public services (local or central government)			0.142***	0.148***	0.201***	0.200***
Female - dummy				1.131	1.058	1.08
Mature student - 21+				0.357***	0.539**	0.538**
Dummy for ethnicity				1.045	1.15	1.141
Routine and manual occupations				0.593***	0.727*	0.732*
Highest tariff				ref.	ref.	ref.
High tariff					0.482***	0.483***
Medium tariff					0.283***	0.282***
Lower tariff					0.140***	0.140***
Other					0.274***	0.273***
STEM subject dummy					0.576***	0.578***
High self-confidence						1.165
Observations	3930	3930	3930	3930	3930	3930
Pseudo R-squared	0.003	0.23	0.28	0.287	0.316	0.316
Log lik.	-4268.3	-3295.6	-3083.7	-3054.4	-2931.1	-2929.9

Source: Futuretrack 2006, Wave 4. Regression results for the effects of business size on the likelihood of graduates reporting that the job they were doing required a degree, nonmissing observations only.

## Appendix B: Selecting interview participants

This section shows the occupation and industry distributions of *Futuretrack* first-degree graduates employed in the private sector, who had opted in to be contacted for future research (N=1,361).

**Table B.1: Graduates willing to be contacted for follow-up research, by occupation and business size**

SOC 2010 Major Group	Micro	Small	Medium	Large	Total
1	9	5	8	51	73
2	37	64	55	299	455
3	29	84	67	306	486
4	17	14	20	143	194
5	1	3	1	9	14
6	10	5	8	12	35
7	15	15	6	126	162
8	0	3	2	4	9
9	8	18	10	33	69
<b>Total</b>	<b>126</b>	<b>211</b>	<b>177</b>	<b>983</b>	<b>1,497</b>

Source: *Futuretrack* Stage 4, UK domiciled, UK-university first-degree graduates, private sector, non-self-employed, subset of respondents willing to be contacted only. Highlighted cells where N>50. Unweighted observations.

**Table B.2: Graduates willing to be contacted for follow-up research by major industry group and business size**

Major industry group	Micro	Small	Medium	Large	Total
Agriculture, mining, quarrying	5	3	4	33	45
Manufacturing	4	18	20	113	155
Electricity, gas, water supply	0	6	2	30	38
Construction (inc. civil engineering)	10	11	6	35	62
Distribution, hotels, catering	36	40	24	237	337
Transport and tourist services	5	3	10	41	59
Information and communications	31	37	28	110	206
Banking, finance, insurance	5	5	12	180	202
Business services	32	64	54	169	319
Education	12	17	15	49	93
Other public services	11	15	13	35	74
<b>Total</b>	<b>151</b>	<b>219</b>	<b>188</b>	<b>1,032</b>	<b>1,590</b>

Source: *Futuretrack* Stage 4, UK domiciled, UK-university first-degree graduates, private sector, non-self-employed, subset of respondents willing to be contacted only. Highlighted cells where N>50. Unweighted observations.

Respondents in small businesses were selected for interview first. Of the 486 respondents employed in SOC major group 3 (associate professionals), 352 graduates were in SOC sub-major group 35 (business and public service associate professionals). The numbers of graduates in minor and unit groups by company size for sub-major group 35 are shown in Table B.3.

**Table B.3: Graduates employed in SOC 2010 group 35, by detailed 4-digit group and employer size**

SOC 2010 Unit Group			Micro	Small	Medium	Large	Total
<b>352</b>	<b>Legal associate professionals</b>	3520	3	2	2	4	11
<b>353</b>	<b>Business, finance and related</b>	3531	0	0	0	2	2
		3532	0	0	1	6	7
		3533	0	0	1	4	5
		3534	0	2	0	41	43
		3535	0	0	0	4	4
		3536	0	0	0	1	1
		3537	0	0	0	3	3
		3538	0	0	0	1	1
		3539	5	2	4	25	36
<b>354</b>	<b>Sales, marketing and related</b>	3541	0	0	0	6	6
		3542	0	7	2	21	30
		3543	3	21	15	50	89
		3544	0	2	0	0	2
		3545	4	9	8	26	47
		3546	2	0	3	2	7
<b>355</b>	<b>Conservation and environmental</b>	3550	2	0	0	0	2
<b>356</b>	<b>Public services and other</b>	3562	0	7	4	27	38
		3563	0	3	1	7	11
		3567	0	0	3	4	7

Source: Futuretrack Stage 4, UK domiciled, UK-university first-degree graduates, private sector, non-self-employed, subset of respondents willing to be contacted only. Unweighted observations.

As can be seen from Table B.3, minor groups 352 and 355 had very few respondents. While minor group 353 had more respondents, hardly any were employed in small businesses. Within minor group 354, unit groups 3542 (business sales executives), 3543 (marketing associate professionals) and 3545 (sales accountants and business development managers) had a sufficient number of graduates employed in small and in large businesses to ask for interviews. In minor group 356, unit group 3562 (human resources and industrial relations officers) could be considered as well. To increase the number of contacts, graduates employed in small businesses were selected from minor groups 354 and 356.

## Appendix C: Qualitative research materials

Figure C.1: Letter to Chamber of Commerce representative (anonymised)

Daria Luchinskaya  
Doctoral Researcher  
Warwick Institute for Employment Research  
University of Warwick  
Coventry  
CV4 7AL

[Redacted]

[Redacted]

[Redacted]

I am a doctoral researcher at the University of Warwick, Institute for Employment Research, investigating how graduates work in small businesses. My research project compares graduates employed in similar jobs in small and in large businesses to assess the impact of business size on the use of and development of graduates' skills.

My PhD is supervised by Professors Kate Purcell and Kevin Mole and funded by the ESRC and HECSU (Higher Education Careers Service Unit).

I would be very interested to meet with a representative from [Redacted] Chamber of Commerce to discuss graduate employment in the area.

Any information collected will be kept confidential, and will be made anonymous in all related research work. Please do not hesitate to get in touch via [d.luchinskaya@warwick.ac.uk](mailto:d.luchinskaya@warwick.ac.uk) if you have any questions.

I look forward to hearing from you,  
Yours sincerely,

Daria Luchinskaya

## Figure C.2: Letter to Futuretrack respondents to participate in the interviews

**Graduates in Small Businesses – does size matter?  
ESRC/CASE Funded PhD Research Project: A request for help**

Dear Futuretrack participant,

I am writing to invite you to take part in my PhD research project looking at whether business size affects the use of skills and knowledge of graduate employees. So far, I have been analysing the Futuretrack dataset to answer this question. My findings suggest that business size does affect the use of some skills, even when controlling for occupation, industry and individual factors. However, survey statistics do not offer much in the way of explanations as to why and how these skills are used, and why business size sometimes matters. This is where I would really appreciate your help.

I would like to talk to you about your experience of work, particularly focusing on what you do, your development of skills and knowledge and your career plans for the future. The interview should last between 30-45 minutes, and could be done by phone, Skype, or other means.

If you would like to participate, please [click here](#), or copy and paste the link below into your browser:

<https://go.warwick.ac.uk/ier/people/phdstudents/daria/gradsinsmesproject/participation>

I will get in touch with you directly and we can arrange a time for the interview.

Participation in the interviews and in the follow-up study is entirely voluntary and you are free to withdraw at any time. I hope that you will take part in the research as there is little qualitative information available about graduates' employment in small businesses and the implications that this has on career development prospects.

Any information collected will be confidential, and will be made anonymous in all related research work. For more information about my research, please visit my project webpage:

<http://www2.warwick.ac.uk/fac/soc/ier/people/phdstudents/daria/gradsinsmesproject/about/>

Please do not hesitate to get in touch via [d.luchinskaya@warwick.ac.uk](mailto:d.luchinskaya@warwick.ac.uk) if you have any questions.

Many thanks in advance,



Daria Luchinskaya  
Doctoral Researcher  
Warwick Institute for Employment Research  
University of Warwick  
Coventry  
CV4 7AL

### Figure C.3: Question guide emailed to interview participants

#### **Interview question guide**

Many thanks for your time for participating in this interview. The topics below are a guide to the kinds of things we could discuss. The set-up is quite informal, so feel free to focus on the aspects which are most relevant to you and give examples which you think illustrate the situation best. The interview should last about 30 minutes.

If you have changed jobs since Futuretrack (Autumn/Winter 2011), we could talk about your experience of working at the employer during the survey with your that in your current place of work.

All information collected will be kept confidential, and will be made anonymous in all related research work.

#### **Question themes**

- How did you come to do your current job?
- What do you do? What are your main tasks and responsibilities? What is it like working there?
- What do you mean by degree skills and knowledge? How do you use them in your job, if at all?
- What do you mean by research skills and innovative thinking skills? How do you use them in your job, if at all?
- Are there any skills or knowledge that you have that you would like to use more than you currently do in your job?
- How has your experience of working in the business you were in at the time of the Futuretrack survey affected your opportunities for career development?

Figure C.4: Researcher interview schedule

**Interviewer checklist**

Interview reference number:	
-----------------------------	--

Name:
Age:
HEI:
Degree:
Year of graduation:
Impressions:

**Start of Interview**

Introduction. Check name.

I am doing a PhD at the Institute for Employment Research, University of Warwick, and working on the Futuretrack dataset. I am looking at the ways in which UK graduates use their skills and knowledge at work and whether business size affects this. Many thanks for your time in participating in this interview. The set-up is quite informal. The interview should last between 30 and 45 minutes. Your information will be kept secure and confidential, and will be anonymised in any research work. [IF agreed to participate in the study: We can discuss the follow-up study at the end of the interview.] Would you like to ask any questions before we begin?

**Check details**

Just to check, you did a degree in \_\_\_\_\_ at \_\_\_\_\_ and then \_\_\_\_\_

When you completed the Futuretrack survey you were working as \_\_\_\_\_ at \_\_\_\_\_ in the \_\_\_\_\_ industry. Is that still correct?

Note that this schedule was used when the diary study was still part of the PhD. After the diary study was dropped, this section of the schedule was not mentioned during the interviews.

Cont'd...

If yes, continue as below. If no, establish what new job is, especially:

Job title; Employer; Industry; Business size.

And ask if it is ok to talk about the previous job first. Then can ask about NEW current job in the expectations / career development section. Can also ask about difference in tasks / responsibilities / managerial relations / size etc. between the two jobs, towards the end. This interview is about the job at the time of Futuretrack survey completion.

**Current (or last) job**

You said your company has \_\_\_\_\_ employees. Can I check that this is for the company as a whole? Is all of the company on one site?

Could you tell me a little bit about working there? What are your main tasks and responsibilities as \_\_\_\_\_?

Spatial layout. Who do you sit next to? How many people are there in the office?

How do you get on with your manager/supervisor/colleagues?

**Nature of work**

And you said that your job did/did not require a general/specific degree. What do other graduates in the organisation do? Non-graduates?

Thinking about your day-to-day work, do you ever do anything that is outside your job description? Could you give any examples? Are you doing more routine work than you expect? Do you ever do work that is at a more senior level?

What is the most interesting thing about your job? And the most boring?

What is the most challenging work you had to do?

Thinking about today (or last day worked), what did you do today at work? What time did you start work today?

You said that you used / did not use your subject skills and/or subject knowledge. Can you explain what you meant by that?

You said that you use \_\_\_\_\_ skills a lot of the time in your current job. Could you explain that a little bit?

In the Futuretrack survey you agreed / slightly disagreed / disagreed that your job was appropriate for someone with your level of qualification and experience. What skills and knowledge do you have that you would like to use more than you currently do in your job?

Cont'd...

**Expectations / Plans for future**

What were your expectations when you graduated, and how do you think your expectations have changed?

What are the opportunities for career development like?

In your opinion, how has working in \_\_\_\_\_, a small/large business, affected your opportunities for career development?

You agreed / disagreed that you had a clear idea of what you wanted to do in 5 years' time. What would you like to do in the future?

**Wrapping up**

Is there anything which could be improved in your current job, or anything which you are unhappy about?

We're just coming to the end of the interview. Is there anything else you would like to mention about your work or your experience after graduation more generally?

**Follow-up:** Yes / No.

Would you be interested in participating in a follow-up study about your work?

The purpose of this study is to find out what kind of opportunities there are for using and developing your skills and knowledge by following what happens at your work over 4 weeks. As a token of appreciation for your commitment to this study, you will be rewarded with £15.00 of Amazon vouchers.

Please spend about 15 minutes each week writing about your work. You might like to focus on something unusual or different that happened at work during the week, something which you might tell your friends or family about. In this way, it should be interesting for you to write about it, and provide a varied account of the different aspects of your work.

It would be helpful if you could write your entry on the same day, perhaps at the end of the week, for consistency. If you miss an entry, you could, but are not required to, write it at a later date, making it clear to which week it refers. After you have written your entry, please email it to me at [d.luchinskaya@warwick.ac.uk](mailto:d.luchinskaya@warwick.ac.uk) as an attachment, or as an email, or via the online form on my website, whichever you find easiest.

If you have any questions, please do not hesitate to contact me at [d.luchinskaya@warwick.ac.uk](mailto:d.luchinskaya@warwick.ac.uk).

Many thanks, and hope you enjoy taking part in this study!

After the diary study was dropped, this section of the schedule was not mentioned during the interviews.

End of guide

Figure C.5: Example of annotated interview schedule (Alex)

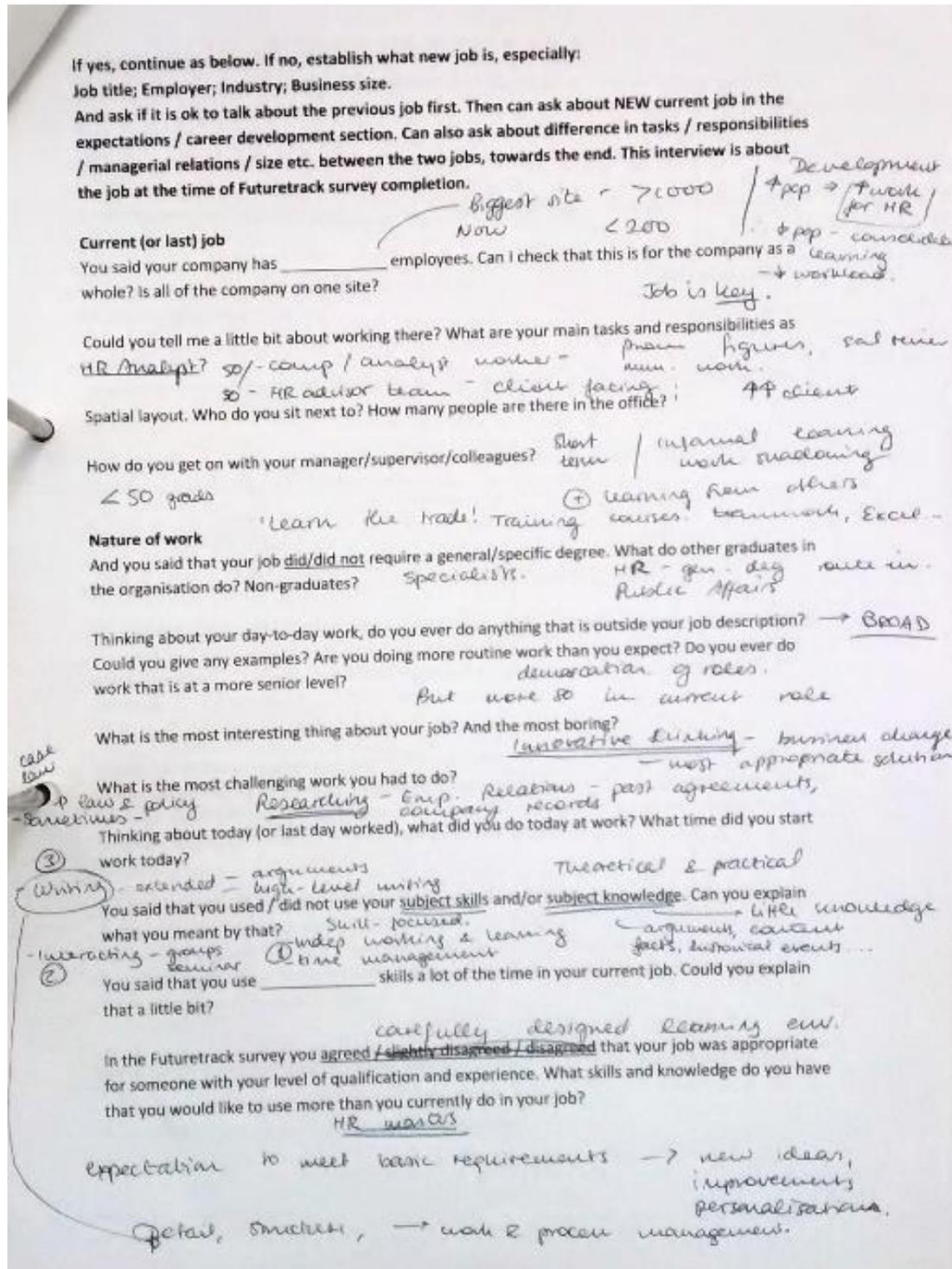


Figure C.6: Extract of early theme codes from fieldwork notebook

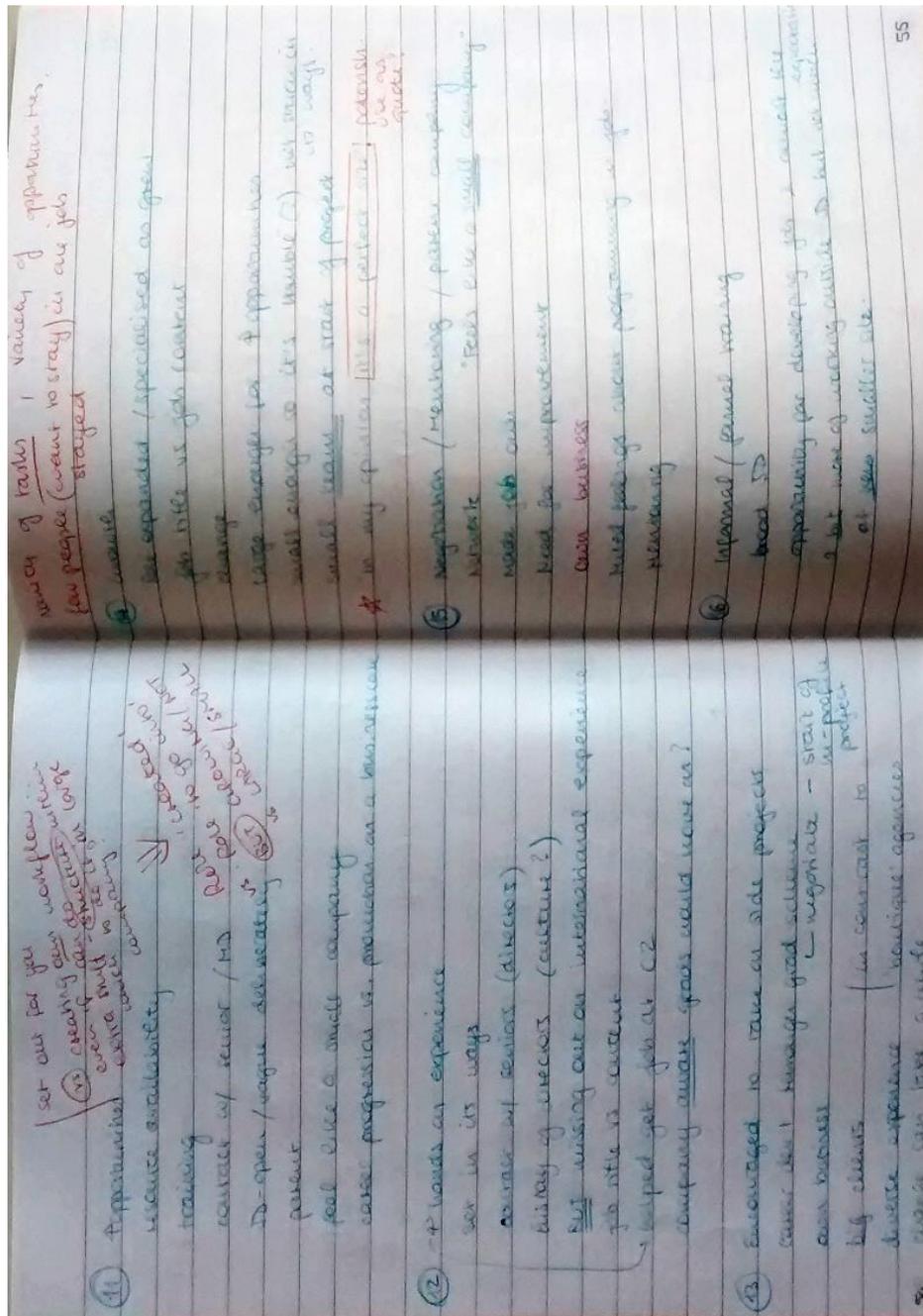


Figure C.7: Thesis project website screenshot

The screenshot shows the Warwick Institute for Employment Research (IER) website. The header includes the Warwick logo, navigation links (About IER, People, Research, Publications, Impact and public engagement, PhD and Advanced Study, Research tools), and a search bar. The main content area features the title 'Graduate careers - does business size matter?' and a brief description of the study. A sidebar on the right contains links for 'About the study', 'Privacy statement', and 'Contact the researcher: d.luchinskaya@warwick.ac.uk'. The 'Findings' section lists three publications related to the study. The footer includes contact information for the IER and links to the Staff Intranet and Sitemap.

**WARWICK**  
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PhD students » Daria Luchinskaya » Graduate careers - does business size matter? » About

### Graduate careers - does business size matter?

'Graduate careers - does business size matter?' is the study of what graduates do in small and large businesses, how graduates use their knowledge and skills, and how far business size matters for the way in which graduates work.

The project is carried out by Daria Luchinskaya, at the Institute of Employment Research, University of Warwick. Using mixed methods, the project aims to combine Futuretrack dataset analysis and in-depth interviews to investigate graduate employment in small businesses and the implications that this has for graduates' career development prospects and business performance.

**About the study**  
[Privacy statement](#) ©  
Contact the researcher:  
[d.luchinskaya@warwick.ac.uk](mailto:d.luchinskaya@warwick.ac.uk)

**Findings**

'Do graduates use the skills and knowledge gained from their degrees?' Graduate Market Trends, Winter 2014, pp. 10-13. Available at: <http://viewer.zmags.com/publication/69e07063#/69e07063/10>

'Does Size Matter? Graduates' Skills and Knowledge Use in Small and Large Businesses.' ESRC 2013 Research Capacity Building Clusters Conference Proceedings, eds. B. Clegg, J. Scully and J. Bryson, Aston: Aston Business School, pp. 133-140. Available at: <http://www1.aston.ac.uk/aston-business-school/research/events/esrc-research-capacity-building-clusters/conference-proceedings/>

'What do graduates do in small businesses?' Graduate Market Trends, Spring 2012, pp. 15-18. Available at: <http://viewer.zmags.com/publication/f0edbc2f/f0edbc2f/14>

**Further information**

Please see [About the study](#) for more information, and do not hesitate to [contact Daria](#) for any questions.

**WARWICK IER**

**Contact us**  
Warwick Institute for Employment Research  
University of Warwick Coventry CV4 7AL  
Tel: +44(0)2476 523284 [ier@warwick.ac.uk](mailto:ier@warwick.ac.uk)

Staff Intranet | Sitemap

## Appendix D: Anonymised interview transcript (abridged)

**Jane, Natural Sciences graduate, 2.1, Highest tariff university**

**Summary:** Research Executive at a small company (C1, 10-24 employees) → Senior Research Executive; then joined large company (C2) as Research Exec (took a 'demotion' as Jane lacked international experience) and is now Senior Research Executive at C2.

**Preamble: Check that details are correct.**

**...and then when you completed the Futuretrack survey you were working as a research executive at [old research company – C1]?**

Yep, I worked there until... Yesterday was my year anniversary at my new company, so I worked there for the first [1-2 years] of my career and then changed companies after that. [Now] I work for a company called [C2]. It's the same, it does both qualitative and quantitative market research, specialising in healthcare, it's just a slightly different focus. It was a bigger company which was one of the reasons which influenced my decision to move.

**Oh that's interesting, so we might talk about that a little bit. And what is your job title, is it the same?**

No, I'm now Senior Research Executive.

**And you've been doing that for about one year?**

Well, interestingly actually, I was promoted to Senior Research Executive at C1, I then decided to move companies because I felt that this company offered me better opportunities in terms of my development, but one of the things was I had to take a knock-down, so I went back to Research executive, because this was a much bigger company, specialising in international as well as UK work, so they were skills I didn't actually have yet. So I went back to Research Executive and now recently I've been promoted again to a Senior Research Executive at this company, with international skills now, so that's how it basically worked.

[...]

**OK. And could you tell me a bit about what it was like working at the old company?**

Um. I think it was a great place to start my career, and I did enjoy working in a smaller company, I think, I got lots of hands on experience from the word go. Just because it was a smaller team, and if things needed doing you had to do them, so it was good in that sense. I suppose the challenges for me were that I didn't have the same working style as one of my directors, so that created some challenges, but overall, what was quite nice for me as well was that I didn't end up moving from the old company because I was unhappy, it was more a positive career change for me rather than 'I'm desperate to get out', so... It was good. Sometimes repetitive, but I think that is if you end up getting several similar market research projects coming in at once, that's just the nature of the job, because

they all run pretty similarly. I suppose the other thing that the old company lacked which I think the new company had was, I feel I have more room to be creative at my new company. It was very... not old fashioned, but it was quite set in its ways, it knew what its clients liked in terms of what its successes were, and it didn't really push for innovative stuff, it was more like we know what works well, we know what's going to get the business, so we're just going to keep doing that kind of thing.

**Mmm... that's interesting. So do you think that's because of the directors, because they had a lot of influence over the way in which this was done?**

Yeah, definitely. There were only two directors, and I had one that I worked very well with, she was much more hands off, and she let me – as long as I could justify why I'd done something – she was more than happy to have a read, if she agreed with it and thought that it was fine, that would be a go-ahead. Whereas I had another director who was very much, you know, his way or the highway kind of thing. It was interesting because by the end of my time there I used to get very few amendments to my work but it would literally be because I had adopted his style rather than putting my own stamp on things.

**And how well would you say you got on with the directors?**

Both actually very well. The female one maybe more so - it was funny, she had a daughter the same age as me, so I think she could relate to me quite a lot, she used to say 'Oh you remind me of my daughter more every day,' we did get on very well, and I was sad to leave, not working with her. And even though my other director would sometimes make you want to pull your hair out, he meant well, I always felt. We used to say, 'Oh he means well, he's got a good heart, he's got his way of doing things.' I think because it was a small company, I guess... I'm very close to some people at my work but not as many, whereas at my new work I'm not as close to so many people, whereas I think, because you're in a small environment you're kind of know everyone and you know everyone well.

[...]

**And you said that at the old company there was quite a lot of going in and working, so when you joined the company, was there any training available for you?**

Well, most of our training was actually in the - you would be quite interested in this - the training at the old company was very different to the training at the new company. At [C1] you'd just shadow someone, they'd teach you how to do something and we did little external training, I had one training on group moderating which I went to the MRS, the Market Research Society, for, to learn how to moderate groups. But other than that it was all really internal training, we had occasional speakers coming in from the industry, to talk about [government policy] and things like that, but the majority was just, ok, this is how you do this, and you shadow someone. Whereas at [C1], we have a coaching team, it's only made up of [a couple of] people but they sort out all our training, and we have really big training sessions where people in your peer group would come and you'd have presentation training, you're recorded, and things like that, so... it's much more... structured.

[...]

**And could you just tell me a little bit about your main tasks and responsibilities as a research executive, when you were at your old company?**

The main things would be, on a day-to-day basis, managing recruitment, so liaising with external recruitment in terms of who, what interviews we wanted; it would be writing discussion materials, at that level you're only expected to do drafts; screening the discussion guide; and then it would be conducting interviews, and that would probably be what I did more of at the old company, because again, being a bigger agency now we outsource a lot of interviewing, so did a lot of face-to-face interviewing, going round the UK conducting in-depth interviews; did lots of presentation writing, again it's obviously not up to a polished level, it's more like you're beginning to think about... you discuss the structure with the director and then go ahead and do it; and liaising with the client to a certain degree, again, and as you get more experience you are allowed to be more hands-on with the clients and definitely in terms of [weekly] updates, it's something we did at the old company, where [on one day of the week] we would send the client an update with anything that's happened that week as such that they need to know.

**And when you joined the new company at the level at which you started the old company, were your responsibilities different?**

Well, it wasn't really different, because the thing with market research is you learn to get better at things, you get stronger at things, you get a lot more responsibility. and I guess for me a lot of the early days of my time at the new company was just shifting to get used to their processes, and I think from the word go, people recognised me at the new company as capable of acting as a senior research executive on a domestic project, just a UK project, it was just the fact that I needed to be able to be given that promotion back, I needed to hone my skills in terms of managing an international project, that was the difference. So that was the learning curve, and actually I found it very useful to be able to take a step back and go on projects with people that had got experience in managing international projects and learn from them so.... In a sense it wasn't really frustrating, and I didn't find it frustrating until the very last months when I was thinking, ok, I would really like my promotion now, but it came quite quickly after my period of frustration anyway, so.... because it almost begins to be a case of almost ticking boxes, so, the only thing left was that I needed to go and do some international fieldwork or something...

**I see. So in effect, it was almost like if the new company was just at a UK level you would have been able to join at the senior level anyway, but as it was you had to increase the breadth of your role by doing this international stuff.**

Yeah. I also don't know if this is interesting, but the directors of my original company actually came from my new company, so I think there are some similar processes between the two companies, because my old two directors learned a lot, they left, decided to start their own business but I guess they learned a lot of what they did at my current company.

[...]

**Umm... And can I ask, you said that the job at C1 required a general undergraduate degree in any subject, I don't think you said it was subject specific. Were the other people in the company also graduates?**

I think in terms of *any* subject, it might be better to say there's *typical* subjects, you would have sociology, anthropology, psychology, biology, you know, like science, because there's two sides to

market research, especially healthcare market research, you could either be more one of those people that is more about thinking and the qualitative side of things, or you could be more the person who gets the theory, so I think that's where the focus tends to be. So at C1, actually most people were science based, actually everyone was apart from one person. And I think that showed as well, our work was much more clinical, in terms of straight down the line, whereas I think there's quite a lot of— I don't know whether quirky is the right word to use – but big personalities at C2 that are driving different things so... [...] Yeah, they all had science degrees. In fact my old boss had a bit of a thing for Cambridge graduates and Oxford graduates [...].

**And was a degree also required for the job at C2?**

Yeah, I needed a degree.

**And can I ask, just thinking about the day to day work that you were doing at C1, did you ever have to things that were outside of your main areas of responsibility as Research Executive?**

[Pause] Not really, no... trying to think if there is anything I used to do that wasn't part of the role... I mean we had to do occasional things like database updating, but that was more updating our benchmark numbers and stuff, I suppose it was still within the remits of market research, but it was more like who had free time at that point.

**And could you take initiative for the way in which your career developed, could you take on more responsibility when you were working at C1?**

To a certain extent. I've always been happy to work more hours if I felt like it benefits my work. I suppose I learned quicker because I put more work and effort into it. I don't know. I approached them a couple of times and said 'this course is interesting, can I go on it,' and I was allowed to go on a couple, so I think yes to a certain extent, but I think there's more scope now with my new company.

[...]

**So just moving onto the skills part of the interview. I appreciate that it's a really long time since you did the Futuretrack survey, but you said that when you were working at C1, you said that you used both your degree skills and knowledge in the job. Could you explain what you yourself mean by that?**

Well, I'll start off with degree knowledge because I suppose that's the easiest one. I suppose that's to a lesser extent than in some jobs that you might go on to, but I do still feel like when, for instance I'm working on a cardiovascular drug at the moment which works on three pathways of the body, and I found that actually, understanding the science behind the drug is really enabled me to talk more effectively about how the company should market it, because say, the physicians get this part of the molecular action, they're able to relate it to that physiology and therefore they've seen that it affects the patient in that way, whereas when I was trying to explain it to one of my directors today who doesn't have so much of a science background, she was like, 'Oh, I understand it now, because you've explained it to me and I didn't get it before,' and I think I said to her, literally today, 'Oh I sometimes forget that having a science background perhaps makes it easier for me,' and that's the only time it [knowledge] comes in.

And I think also, in terms of statistics as well, perhaps I find Excel easier than other of my colleagues do, and I'm able to use that more, and think about how to display numbers better and think about how the data might look best. But I mean, I don't need to, on a day to day basis, call on my science knowledge, there's nothing that I can't find on the Internet that I needed for my research, it's just more that, I guess just grasping of certain aspects, if I'm doing [inaudible] testing or advertising testing, I don't need my science there really, it's more just about people's reactions to things.

In terms of skills, I suppose, wider skills, I just of really meant the juggling, you've got three courseworks [to hand in] at the same time, it's kind of similar to having three clients wanting presentations in at the same time. I think, again, my broader language skills and how to write probably plays quite a strong part in my role as well, I write reports, the PowerPoint reports, I write one every week, I think that's got to have helped.... I'm trying to think what else... [Pause] You're thinking back to put on what your CV when you're... Probably also when you're talking in front of your peers and stuff, it's not something I particularly like, but I'm sure it must have helped having to present in front of your peers there, because I do have to present in front of clients here, and it is nerve-racking, so it will have helped. And it's actually something I wish we'd done more of, because presentation giving is a massively valuable skill and I doubt that there's that many business orientated jobs and even academic jobs that don't require presenting.

[...]

**Interesting. Ok. Also in the FT survey you said you used 'innovative thinking skills' a lot of the time [Jane laughs] yeah, there was a list of different skills and this is just one I'd like to focus on. How would you – could you give an example of how you might have used innovative thinking skills and what you mean by that, at your C1 job?**

Well. I guess for me the meaning... I suppose part of my role is to position, to give drugs a winning edge, so you do have to think about new things all the time, you can't just repeat everything all the time because I suppose it would never work that way, so I think it's about sitting down and thinking of new ideas, about how you might.... Because, I suppose the way a lot of pharmaceutical companies work is that you end up with a class of drugs that all do the same thing, but you have to somehow think about, you know, how can you provide a client with an edge for that drug, and a lot of the time it's not really- the edge might not actually be there but it's just about convincing people the edge is there, so I guess that's how marketing works. And I guess in my presentation writing, half- one of the things that I like to do is not to present back in the same way each time, I like to try and think about new ways to present data, make it look visually pretty, which is maybe not the word my present director would like me to use, 'pretty' [laughs], but just to make data look more 'impact-able' I try and think of new ways of presenting, so yep.

**And just picking up on what you said earlier, that there's more creativity, there's more innovation, at C2, would you say you use your innovative thinking skills more, now?**

Yep. Definitely in terms of my presentation writing, because before I said there was a method way of, there was a way we always did things, and that was the director's way, he liked things in a certain way, and that was how we did it kind of thing. I think the only- yeah, and also we do a lot of trying to think of new ways of things to add into interviews, so interesting ways of how we might...so one of the ones I was thinking about the other day was how could we... because doctors are... we as market

researchers think that doctors are in terms of their day-to-day prescribing tend to get quite habitual, so we were thinking about different ways of how we could compare, how we could make them think about things in a different way, so not in terms of their day-to-day prescribing, but maybe how they could think about in the consumer world instead of something in the, you know. So just trying to think of different ways of looking at things for them as well. And also, a lot of the ones that we interview end up doing a lot of market research, so we want to make the interviews interesting for them as well.

**Ok, Interesting. And there was another question in the Futuretrack survey which asked how appropriate you think your job is for somebody with your level of qualification and experience. And I think you agreed, you gave it a 5 out of 7, you agreed, that your job at C1, that it was appropriate. Would you say that you had some skills and knowledge that you felt you would have liked to make more use of but did not quite have the opportunity to make use of?**

I suppose like, it's when, sometimes when I used to work at C1, I guess why I didn't put it as a 7, is because while my job is challenging, it's not... I suppose at school I was quite academic, and I don't use my brain anymore, I'm not trying to solve mathematical problems all the time, you're not trying to solve those kinds of problems. So it's not... that's... sorry, what was the question again?

**So my question was whether you have skills or knowledge that you'd like to use but you haven't quite been able to use.**

Yeah, but actually, I don't think I would enjoy my job if I was always challenged like that all the time, you've done that through school, and you've got a good grounding of things, and I think no, I think there are some skills that are for academia, and I think the skills I like to use most, my people skills and conversational skills, and managing people and managing projects, I'd much rather- although they're not, you know, you don't get taught good project management at school, but I'd much rather be exerting those skills rather than being successful at solving a mathematical problem from day to day, or the skills that you learn in biology. I learned effective ways to argue a question in terms of the science, building up who said this and that for the supporting argument, but I don't miss doing those kind of skills and I think the skills that are, that we spoke about earlier, the more transferable kind of skills, are more the ones I want to be using on a day-to-day basis. So... and even though sometimes I think I wish my job was slightly more science based, if I really want to do that I can read in my own time, and I don't do that, so I'm obviously not missing it that much.

**No. But I'm glad you mentioned that maybe it's not a good thing to use all of your skills all of the time, because I'm quite sceptical about this, 'let's make sure that everyone uses all of their skills', because people need to relax a little bit... So could I just ask, you said that your career change was a positive move rather than a negative one. What was it that prompted you to leave C1?**

Um... well. I guess I was getting in a little bit of... I was feeling like I was... because of the way in which the company was run, I was doing things... I wasn't... I reached my peak at that company in terms of that I obviously had a lot to improve as a market researcher, and I'm improving every day, but I couldn't do it to the best of my degree at that company so... And I kind started to think about where I might be able to get that. And then I randomly got contacted by a recruiter, and then that kind of started the process, and then I actually got ill, and then for about two and a half weeks we stopped that process, and then I convinced myself that, 'Oh no no, I don't need to do this, I'm happy

there [at C1],’ and then he was like, ‘Oh no, ok, what’s the harm in going to have a look, it won’t do you any harm,’ and I went to have a look round C2, and met the HR [person] and really fell in love with what I saw and what she had to say, so it went from there. I guess it was, again, it was nothing that C1 was doing wrong, it was more about my own personal development , there were skills that I felt I knew I needed as a market researcher, but I didn’t feel I could get them at C1. So.

**Do you feel you kind of ‘outgrew the company,’ so to speak?**

Yeah, I think that’s definitely it.

**But you said it was a really good place to start. So would you have been able to get a job as a research executive at C2 without having had this experience at C1, do you think? How has it-**

Yeah, actually they have a graduate scheme at C2, so I could have actually applied for that, but I looked at it and decided that I wanted to start at a smaller company, because I felt like that would be... I do contemplate from day-to-day where would I be, would I be a better researcher if I had been part of the graduate programme at C2, or would I be... and I actually don’t think it’s made a vast amount of *difference*... But yeah, actually in fact maybe I made the right decision, I got hands on experience, I got lots of interviewing experience which we don’t get so much at C2, because a lot of our work is international, so it’s done in prime markets. Whereas I had a lot of hands-on interview experience and then... so yeah... I don’t know... I think it *helped* me get my job in the sense that I remember in the interview they felt like I’d done... actually the way they described me in the interview was that I had a lot of process, because in the final stages of my interview for C2 it almost ended up being more of a discussion in terms of where I would fit in versus the final interview. They looked at my experience, I had a lot of depth in certain areas but I was lacking in breadth, and I think that would be a good example of what was being part of a smaller company.

**Hm, interesting. What would you like to do in the future?**

Well, for now I’m quite happy, progressing through C2, and can’t see me moving any time within the next year, definitely. I have toyed with the idea of going into the client side, so actually working for a pharma company instead of an agency, but I don’t think I’ll really... I’ll either stay in market research consumer, and go to consumer maybe, or maybe I’ll just stay in healthcare, or maybe I’ll go to a pharmaceutical, but I don’t think I’ll really deviate, unless I find something that I’m super interested in, from this kind of arena.

**Ok. And sorry, I meant to ask this earlier. What were the opportunities for career development like at C1? So you become a Senior Research Executive, but was there much room for progression after that?**

Well it’s the same, so you go Senior Research Executive, then Account Manager, so you have your own clients, so it’s the same at C2, and actually I’ve probably started to do it more now, so there are certain clients I work with regularly, so you become a recognisable face to them, and then at some point as you get through your career you would manage that client rather than just being one member of the project team you’d actually probably be the core member of that project team. And then you become an Account Director and then a Director, and that’s the same, I think, in all market research companies, that’s the structure. So there was development, but the only difference I would say is that we had a... my [colleague] from C1, since I’d moved there, came to interview at C2, and

she didn't get the job, and my HR spoke to me about it afterwards, and said, had we missed a trick, because she was doing very well at C1. And one of the things they commented on was the lack of experience she had for an [her role] and that was also, that was one of the reasons why I got my, well, I wouldn't want to put it as a 'demotion,' but, you know, had to 'take a roll back.' But C1, because it was a small company, they promoted quickly, so they had all these different people, but the skill set didn't actually match the title so I think it wasn't actually comparable to other market research companies.

**That's an interesting observation. Just the reason I ask is that sometimes, in small companies, not necessarily in market research, sometimes people get to a certain level and then it's just the company owner, so there's nowhere to go. But it seems like here there is a sort of structure, whether it's in large businesses or in small businesses, there's always some kind of chain. Is that..?**

Well, it's interesting because even though the role title changes, I think the girls at C1 would agree with me, and I certainly noticed this, we all had different titles but we all did the same job, so I think that's why they were starting to get bored. Because they didn't feel like, 'Yes, they were getting paid more and they might have had a bit more responsibility,' but actually they were doing the same job as us. And I guess that caused a bit of friction between everyone, because lower levels recognised that they were doing the same job but not being paid as much, and higher levels are like, 'Well, I'm bored now, because I've been doing this job for so many years and I'm doing the same thing.'

**So was the pay not that different?**

Well, the pay was, to be fair to C1, I had a pay rise every six months I was there, which was very good, they did reward well in that sense. But yeah, they would have been on more [money] but not really doing much more. And I think that's what I meant in terms of C1's model, it's probably a small model, they have quite a few graduates, they take on a couple of graduates each year, with the mind that they will only stay for [1-2 years], and then they take on two new graduates because they're obviously they're not as expensive to run and they can do a lot of the jobs by the time they're trained anyway, so.

**Ah, that's interesting. So basically they're taking graduates on with the idea that the graduate won't stay and will want to move out, so that's kind of cheap labour in some ways.**

I wouldn't want to be jumping to conclusions, but think that- I had quite an open and honest discussion with [one of the directors] when I left, and she was very understanding of the reasons why I wanted to move, because she knew me well, and it was interesting because the other director that I spoke about didn't know me so well, [he] was really hell-bent on having me stay and was really trying to persuade me to stay and offered me more money, whereas she was more like, 'That's your decision, I respect that, and I understand why,' so I think she knew why I wanted to go. Not because she felt like she had a bad company, but because she understood that I would probably get more development at C2.

**Interesting. That was a really interesting interview. And it's really interesting that you've worked in both a small company and now a larger company, because this is what I don't get on the Futuretrack dataset, that was just one point in time in 2011, and it's interesting to compare your experiences. Well thank you very much, that's basically about it.**