

**Original citation:**

Serra, Carlos Eduardo Martins and Kunc, Martin. (2014) Benefits realisation management and its influence on project success and on the execution of business strategies. International Journal of Project Management . ISSN 0263-7863

**Permanent WRAP url:**

<http://wrap.warwick.ac.uk/60436>

**Copyright and reuse:**

The Warwick Research Archive Portal (WRAP) makes this work of researchers of the University of Warwick available open access under the following conditions.

This article is made available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 (CC BY-NC-SA 3.0) license and may be reused according to the conditions of the license. For more details see: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

**A note on versions:**

The version presented in WRAP is the published version, or, version of record, and may be cited as it appears here.

For more information, please contact the WRAP Team at: [publications@warwick.ac.uk](mailto:publications@warwick.ac.uk)



<http://wrap.warwick.ac.uk>



# Benefits Realisation Management and its influence on project success and on the execution of business strategies

Carlos Eduardo Martins Serra <sup>a,\*</sup>, Martin Kunc <sup>b</sup>

<sup>a</sup> *Independent Consultant, Flat 21 Walpole House, 126 Westminster Bridge Road, London SE1 7UN, UK*

<sup>b</sup> *Warwick Business School, The University of Warwick, Office E1.07, WBS Social Studies Building, Warwick Business School, Coventry CV4 7AL, UK*

Received 11 April 2013; received in revised form 28 January 2014; accepted 13 March 2014

## Abstract

Business strategies, which imply organisational change, usually require the development of projects, e.g. IT projects. However, organisations fail in implementing their strategies even though they employ project, programme and portfolio management techniques. Benefits Realisation Management (BRM) is a set of processes structured to close the gap between strategy planning and execution by ensuring the implementation of the most valuable initiatives. However, there is no empirical evidence of its effectiveness. This paper presents the results of a survey to practitioners in Brazil, United Kingdom and United States evaluating the impact of BRM practices on project success rate. Our results show BRM practices being positive predictors to project success on the creation of strategic value for the business. Therefore, these results suggest that BRM practices can be effective to support the successful execution of business strategies.

© 2014 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-SA license (<http://creativecommons.org/licenses/by-nc-sa/3.0/>).

*Keywords:* Project management; Benefits realisation; Strategy implementation; Strategy execution; Project success; Project governance

## 1. Introduction

Industry reports, e.g. [The Economist \(2009\)](#), [German Project Management Association \(2010\)](#) and [Price Waterhouse Coopers \(2007\)](#), suggest that practitioners recognise projects as a structured way to implement business changes, an opinion also shared by academics e.g. [Buttrick \(1997\)](#), [Kerzner \(2009\)](#) and [Turner \(2009\)](#). Project success is a vital component of business success ([Price Waterhouse Coopers, 2007](#)) and the global economy. Although projects in an organisational portfolio can address different objectives ([Gray and Larson, 2006](#); [Jenner, 2010](#); [Kendall and Rollins, 2003](#); [Levine, 2005](#)), they are mainly undertaken to support the execution of business strategies ([Buttrick, 1997](#)).

Therefore, organisations need to ensure the success of their projects in order to succeed in executing their strategy and in turning their vision into reality.

In order to be successful, project management teams need to define clearly how to evaluate whether each project is successful. However, there is no consensus on the definition of project success ([Prabhakar, 2008](#); [Yu et al., 2005](#)). A recent analysis of articles published from 1986 to 2004 in the *International Journal of Project Management* and the *Project Management Journal* has found 30 articles discussing project success, but with no consensual definition ([Ika, 2009](#)). In parallel, surveys performed in the last twenty years have found between 60% and 80% of all organisations failing in executing their strategies by not delivering the expected outcomes of their changing process ([Kaplan and Norton, 2008](#)).

This paper, analyses success by two different approaches: Project management performance, also called efficiency, which evaluates success mostly based on budget, schedule

\* Corresponding author. Tel.: +44 7428 225343 (mobile).

E-mail addresses: [carlos.serra@hotmail.co.uk](mailto:carlos.serra@hotmail.co.uk) (C.E.M. Serra), [martin.kunc@wbs.ac.uk](mailto:martin.kunc@wbs.ac.uk) (M. Kunc).

<http://dx.doi.org/10.1016/j.ijproman.2014.03.011>

0263-7863/00/© 2014 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-SA license (<http://creativecommons.org/licenses/by-nc-sa/3.0/>).

and requirements goals; and project success, which evaluates how well projects deliver the benefits required by business strategies in order to meet wider business objectives and to create value (Cooke-Davies, 2002; Serrador, 2013). Despite the clear role projects have in implementing business strategies, organisations are still evaluating projects only by their efficiency and not by the benefits delivered and a large group of organisations claims that project benefits are very hard to measure (Zwikael and Smyrk, 2012), especially benefits realised during product operation, often long after project end (Yu et al., 2005).

Recently, some scholars (Bradley, 2010; Jenner, 2010; Melton et al., 2008) have suggested that Benefits Realisation Management (BRM) makes the value and the strategic relevance of each project clear, enabling an increased effectiveness of project governance. More than just governance, ‘strategic governance’ leads organisations to work towards the delivery of planned benefits (Gardiner, 2005). Organisations with mature processes of benefit realisation – and therefore stronger governance – have their management boards prioritising and supporting mostly those projects which can deliver the most relevant benefits. By increasing the effectiveness of project governance, Benefits Realisation Management can arguably reduce project failure rates from a strategic perspective. However, these practices are not widely employed yet, or employed as a subset of other project management processes, and there is scant evidence about its impact on project success (Cooke-Davies, 2002). Thus, this paper intends to evaluate the use of Benefits Realisation Management among the project management communities of three countries: United Kingdom, United States and Brazil in order to understand its impact on project success rates and evaluate the impact of projects on the creation of organisational value (Bryde, 2005; Yu et al., 2005; Zwikael and Smyrk, 2012).

## 2. Theoretical background

After organisations set their visions and create their strategy, the management team creates individual projects or programmes, which are groups of projects managed together (Thiry, 2002), to deliver the business strategy. However, organisations do not have infinite resources to invest (Amason, 2011) so they choose those projects that deliver the most valuable results for the implementation of the business strategy (Amason, 2011; Gray and Larson, 2006) in the most effective and efficient way (Gray and Larson, 2006). Then, organizations use project portfolio management methods, such as financial and non-financial appraisal and evaluation models, to select and prioritise the best set of projects (Jenner, 2010).

Once the correct projects are selected, project success can be assessed in two steps usually called appraisal and evaluation. The appraisal occurs before the beginning of each project in order to support the approval of the business case, while the evaluation occurs at project closure in order to identify project success or failure (Jenner, 2010; Zwikael and Smyrk, 2011). The appraisal measures the relevance of each project and defines expectations, which are inputs for the definition of success criteria. Since projects are investments which usually aim to maximize return, an important part of this step is the financial appraisal (Jenner,

2010; Levine, 2005) or feasibility studies (Yu et al., 2005). Later, the evaluation analyses the actual achievements against those success criteria previously defined in order to identify whether projects were successful (Jenner, 2010; Zwikael and Smyrk, 2011).

While there are several different models to measure project success, many authors, such as Baccarini (1999) and Pinto and Mantel (1990), agree on two approaches to its assessment: project management performance and delivery of benefits to the business, clients and stakeholders. In the past, project success was evaluated mostly based on criteria associated to the “triple constraint”: cost, schedule and scope (Ika, 2009; Shenhar and Patanakul, 2012; Zwikael and Smyrk, 2011), which are strongly related to the evaluation of project management performance, usually assessed using Key Performance Indicators – KPIs – designed to measure the adherence to budgets, schedules and technical specifications (Bryde, 2005). However, a complete evaluation of success requires a value related component (Kerzner, 2011), replacing this evaluation method for another focused on the project contribution to the business strategy (Patanakul and Shenhar, 2012) including the creation of shareholder value (Ika, 2009; Levine, 2005).

Ika (2009) splits the benefit related component of the assessment into ‘Project/Product Success’ – satisfaction of end user and benefits to stakeholders and project staff – and ‘Strategic Project Management’ – business success, achievement of client’s strategic objectives. More recently, Camilleri (2011) divides benefit between ‘project success’ – outcomes and benefits – and ‘Project Corporate Success’ – the achievement of strategic objectives. Zwikael and Smyrk (2011) also separates it into ‘Ownership Success’ – benefits less dis-benefits and costs – and ‘Investment Success’ – financial return to the organisation. Although these authors have suggested different ways to assess the delivery of benefits and the consequent creation of strategic value to the business, this paper suggests that the delivery of benefits to stakeholders has to be related to business strategies and to the achievement of wider business objectives, especially by the financial perspective, considering ‘project success’ as a more comprehensive approach (Cooke-Davies, 2002).

Although there are several criteria available to evaluate project success, the judgment of success or failure can be taken based on a more situational or subjective basis (Ika, 2009; McLeod et al., 2012). Different perspectives using the same criteria can evaluate the same project as a success and as a failure. On the other hand, a set of criteria can be suitable to some perspectives but unsuitable for others. For example, project management success, ownership success and investment success are assessed by different perspectives and criteria (Zwikael and Smyrk, 2011). Nevertheless, project managers are responsible for the alignment of expectations among stakeholders in order to define project success (Kerzner, 2011). Interestingly, these same project managers are usually kept apart of the rationale for project selection and prioritisation, so they may not understand the relevance of their projects in order to deliver the expected benefit to the business (Melton et al., 2008). Thus, a question remains unanswered for them: what value do businesses need?

### 2.1. What value do businesses need?

Good business strategies are those that deliver stakeholder value, which is the organisation's long-term cash generation capability or the ability to provide value public services, in case of public sector organisations (Johnson and Scholes, 2002). These business strategies set targets of future value, which are met by achieving strategic objectives. Since these objectives are measurable, the difference between the current situation and the target future situation sets the value gap, which is fulfilled by a portfolio of initiatives defined by the organisation in their strategic plan (Kaplan and Norton, 2008). As Fig. 1 illustrates, strategic initiatives usually fill the value gap by enabling new capabilities – or promoting changes – through the outputs delivered by a set of projects.

Projects are organisational entities which employ resources organised on a new and unique way, for a specific time-frame, to enable positive and clearly defined changes in the business (Turner and Müller, 2003). These positive changes aim the achievement of organisational objectives and these strategic improvements in the business are called 'benefits'. Benefits, which can be seen as improvements, are increments in the business value from not only a shareholders' perspective but also customers', suppliers', or even societal perspectives (Zwikael and Smyrk, 2011). Benefits are usually achieved using programme and project management techniques. Therefore, the creation of value for business, by the successful execution of business strategy, strongly depends on programmes and projects delivering the expected benefits.

Based on the benefit mapping techniques suggested by Thorp (2007), Ward and Daniel (2006), and Bradley (2010) and practitioners' guides (Chittenden and Bon, 2006; Jenner, 2012; and OGC, 2007), a conceptual example of benefits realisation, starting from projects and reaching the achievement of business objectives, is presented on Fig. 2. Conceptually, the process starts on project outputs enabling business changes or directly delivering intermediate benefits. Business changes create outcomes, which

prepare operations to realise benefits. Alternatively, business changes can also deliver intermediate benefits, regardless whether they are enabled by project outputs or not. They can also cause side effects, which are the negative outcomes from change, such as requirement of additional skills or cost increases. These side effects and consequences can also realise further intermediate benefits. Intermediate benefits contribute to the achievement of end benefits (Bradley, 2010) and end benefits directly contribute to the achievement of one or more strategic objectives of the organisation. Usually, end benefits are results of changing processes composed by sets of projects that are managed together as a programme (Bradley, 2010), which coordinates work in a synergic way to generate more benefits than projects could do individually (Thiry, 2002).

Therefore, from a strategic perspective, successful projects deliver the expected benefits, then creating strategic value to the business. Careful management of each project ensures the delivery of outputs, enables outcomes, and then supports the realisation of the right benefits. Although benefits are not the only criteria to evaluate project success, they are a measurement of how valuable a project is. This is the realm of Benefits Management Realisation.

### 3. Research methodology

This research aims to test the relationship between BRM practices and perceptions of project success. Then, in order to elucidate a phenomenon by testing the relationship between variables, we performed a survey study using questionnaires and data analysis using analytical survey tools (Blaxter et al., 1996).

#### 3.1. Sampling procedures

The sample was selected by stratified random sampling procedures over a population composed by Project Management

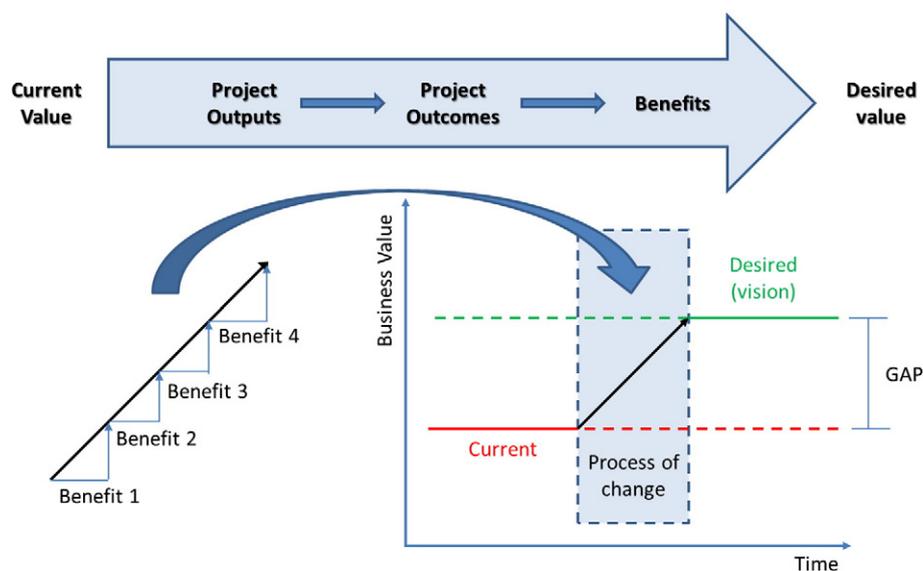


Fig. 1. Filling the value gap.

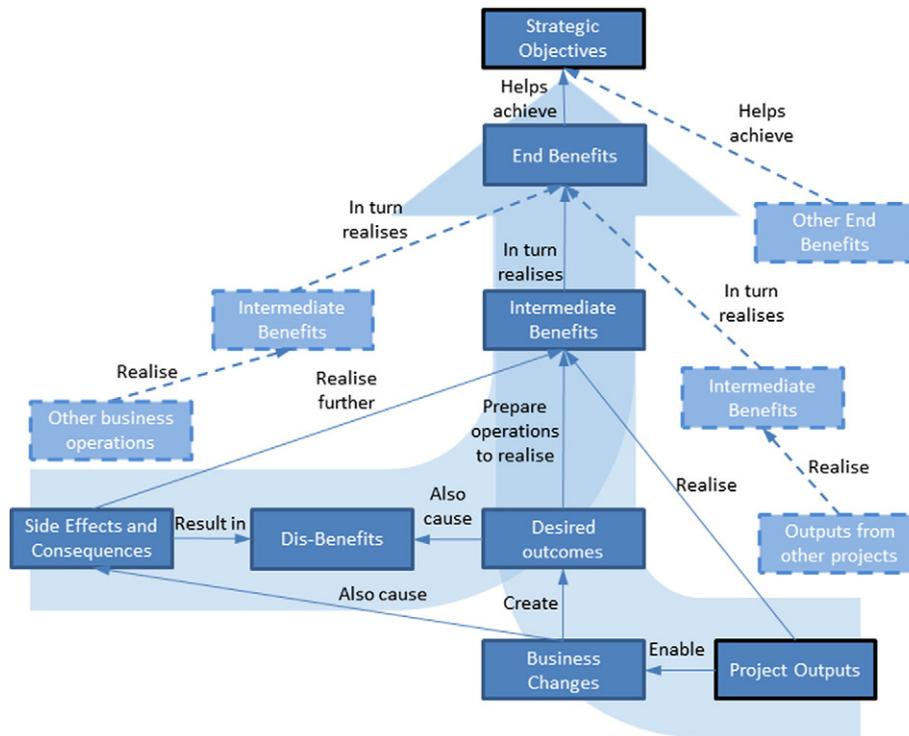


Fig. 2. Chain of benefits.

Practitioners who have worked in the area in the last two years, in at least one project that is now concluded and in one of the three countries under analysis: Brazil, United Kingdom (UK) and United States of America (USA). We selected practitioners from USA because this is the largest community, the UK to provide a European perspective, while Brazil was included given its status of emerging market. The sample was stratified, because the assessment of independent strata of the population enables inter-group analysis (Field, 2009), which could confirm a regular pattern or lead to divergent results (Teddle and Tashakkori, 2009). Project team members were specifically targeted since they are participants in their projects. Even though they may not have a complete overview; project management teams know the relevance and priority of project outcomes (Gray and Larson, 2006) and to have experienced the dynamics of project management, including roles, techniques and practices.

In order to analyse experiences and to avoid loss of details or veracity, the data structure was defined as cross sectional, referring

to one specific event occurred in no more than two years. That decision was made because the memory of respondents is compromised depending on how long the events under analysis has occurred (Foddy, 1993; Iarossi, 2006). When focusing on a single event some experiments show that in three years up to around 50% is irretrievable, but around a period of two years only 10% to 30% of the details are irretrievable (Iarossi, 2006).

### 3.2. Questionnaire design

The quantitative questionnaire was composed by closed questions requiring respondents to identify perceptions of project success and BRM practices identified from the literature (see Tables 1 and 2) plus controlling variables. In order to identify respondents' perceptions on project success and on how much BRM practices had been applied in their previous experience, most questions were closed and subjectively responded by rating scales, Likert Scales. Likert scales are suitable to evaluate people's

Table 1  
Questions and references. Project success criteria.

Please rate how much you agree with the following statements from three different perspectives (project team, project sponsor, and project customer)			
Dimension	Item	Name	Sources
Project success	PS	The project was successful	*
Project management performance	PSB	The project has satisfactorily met the budget goals	Zwikael and Smyrk (2011), Camilleri (2011), Ika (2009), Shenhar and Patanakul (2012)
	PSS	The project has satisfactorily met the schedule goals	
	PSR	The project has satisfactorily delivered the required outputs (i.e. fulfilled its requisites)	
Creation of value for the business	PSE	Project's outputs have supported the business to produce the expected outcomes	
	PSU	Undesired outcomes were managed and avoided	
	PSI	The project has provided the expected return on investment	
	PSC	The project's outcomes adhered to the outcomes planned in the business case	

\* General perception of success. No specific criteria or reference.

Table 2  
Questions and references —BRM practices.

Please rate how much you agree that, during the project's execution ...		
Item	Practice	Sources
BRM1	Expected outcomes (changes provided by project outputs) were clearly defined	Zwikael and Smyrk (2011), Bradley (2010), Melton et al. (2008) OGC (2007), Chittenden and Bon (2006), Buttrick (1997).
BRM2	The value created to the organisation by project outcomes was clearly measurable	Zwikael and Smyrk (2011), Bradley (2010), Jenner (2010), Melton et al. (2008), OGC (2007), Hubbard (2007), Chittenden and Bon (2006), Levine (2005), British Standards Institute (2000).
BRM3	The strategic objectives that project outcomes were expected to support the achievement of were clearly defined	Bradley (2010), Melton et al. (2008), OGC (2007), Kendall and Rollins (2003).
BRM4	A business case was approved at the beginning of the project, describing all outputs, outcomes and benefits that were expected from the project	Bradley (2010), Jenner (2010), Chittenden and Bon (2006), Buttrick (1997).
BRM5	Project outputs and outcomes were frequently reviewed to ensure their alignment with expectations	Amason (2011), Bradley (2010), OGC (2007), Chittenden and Bon (2006), Levine (2005), Thiry (2002), Buttrick (1997).
BRM6	Stakeholders were aware of the results of project reviews and their needs were frequently assessed with a view to make changes	Bradley (2010), OGC (2007), Chittenden and Bon (2006), Kendall and Rollins (2003).
BRM7	Actual project outcomes adhered to the expected outcomes planned in the business case	Bradley (2010), OGC (2007), Chittenden and Bon (2006), Levine (2005), Buttrick (1997).
BRM8	Activities aiming to ensure the integration of project outputs to the regular business routine (training, support, monitoring, and outcomes evaluation) were executed as part of the project's scope	OGC (2007), Chittenden and Bon (2006).
BRM9	After project closure, the organisation kept monitoring project outcomes in order to ensure the achievement of all benefits expected in the business case	OGC (2007), Chittenden and Bon (2006).
BRM10	From the first delivery to the project's closure, the organisation performed a pre-planned, regular process to ensure the integration of project outputs into the regular business routine (including outcomes evaluation)	Bradley (2010), OGC (2007), Chittenden and Bon (2006).
BRM11	A project benefits management strategy is applied throughout the company	Breese (2012), Jenner (2010), OGC (2007), Thorp (2007), Chittenden and Bon (2006).
BRM12	A project benefits management strategy was applied for the project under analysis	

subjective states, such as opinions and perceptions (Iarossi, 2006) by rating how much the respondent agree to a declarative statement by using five categories from “strongly agree” to “strongly disagree” (Peterson, 2000). The same strategy has been previously employed on similar research about project success (Scott-Young and Samson, 2008). The questionnaire had no “opt out” question, because letting the respondent opt out, such as responding “do not know” increases the number of people not answering the question (Iarossi, 2006).

Table 3  
Controlling variables.

Controlling variables		
Variable	%	Cases
<i>Region of project execution</i>		
USA	23.00	76
United Kingdom	19.00	63
Brazil	47.10	156
Others	10.90	36
<i>Role of the respondent</i>		
Project governance role	15.40	51
Project sponsorship role	0.91	3
Project management role	77.04	255
Other role	6.65	22
Total	100.00	331
<i>Sponsor and customer are the same person</i>		
Yes	31.10	103
No	68.90	228

Since project success is better understood when assessed by different perspectives (McLeod et al., 2012), our survey has an approach similar to the one suggested by Zwikael and Smyrk (2012), which divides project accountabilities among project management, project funder and project owner. However, in order to make it easier for respondents to associate each perspective to common roles, the questionnaire asked respondents to state their perception of success from the perspectives: Project team, project sponsor and project customer.

In order to obtain qualified support to data gathering and validation from recognised professional bodies, the questionnaires were submitted to the Project Management Association (APM) and to the Project Management Institute (PMI). APM is the largest association of project management practitioners based on the UK (Association for Project Management, 2013) and it is a member of the International Project Management Association (IPMA), which is a European project management federation (International Project Management Association, 2013). PMI is the largest institute based in the USA related to the field of project management (Project Management Institute, 2013). Both organisations develop and support research on project management subjects, have developed their own project management bodies of knowledge and provide professional services to members and non-members, such as training, professional qualification, peer-reviewed and non-peer-reviewed publishing, and networking. Both institutions have reviewed the questionnaires, and then advertised the survey using their institutional websites.

### 3.3. Respondents

Nine hundred invitations were sent to project management practitioners through the social network LinkedIn (300 per country) at the beginning of 2012. In addition, the survey was advertised at electronic social networks and the websites of organisations specialised in project management. Until July 2012, 331 responses were received, as presented in Table 3. The final response rate was 32%, similar to the response rate of 31% considered as acceptable by Ritson et al. (2012) on their e-mail survey about successful programmes. Although invitations were sent only to the three selected countries, 36 responses were received from other countries and employed on the general analysis, but they were not considered on comparisons between countries.

### 3.4. Limitations

While our survey shows that there is separation among these three roles (see Table 3), the results do not show significant differences in their opinions. The high number of cases with the same person playing at the same time the roles of Sponsor and Customer combined to a large number of respondents being part of project teams may have influenced the results, taking us to a narrower view, mainly from the eyes of project team members, and to a partial fusion of the Sponsor and Customer perspectives.

Additional relevant constraints of this research are the lack of previous research about this subject, for an exception, see Zwikael and Smyrk (2012), Bryde (2005) and Cooke-Davies (2002), with most of the material published being non-refereed. Therefore, it limits the options on practical examples and sources for triangulation. Finally, due to inherited limitations of the approach employed, since questionnaires were selected as the data gathering method, practical and subjective aspects could have been missed.

### 3.5. Data analysis

After all the data had been collected, multivariate analysis was employed to identify the causal relationship between several independent variables and one dependent variable (Tabachnick and Fidell, 2007) using multiple regressions (Field, 2009; Pallant, 2010; Tabachnick and Fidell, 2007) performed with the software package IBM SPSS 21.

The 24 perceptions of project success on eight dimensions and from three different perspectives were split into the three groups presented in Table 1: Project success, project management success, and success on the creation of value to the business. Then, the variables in each of the three groups were grouped and combined using principal components analysis (Field, 2009), the technique also applied by Scott-Young and Samson (2008) to avoid high bivariate correlations and also to reduce the number of dependent variables to a more manageable and representative group of variables, called factors (Field, 2009). The results available in Appendix A present item loadings greater than 0.50 for each factor, confirming then the structure and validity of the perceptual scales.

The scales have high reliability, with Cronbach's alphas between 0.818 and 0.940, all well above the recommended limit of 0.70 (Field, 2009) and above the range from 0.79 to 0.88 considered as acceptable by Scott-Young and Samson (2008) and close to 0.831 considered as good by Ritson et al. (2012).

Pearson's *r* bivariate correlations were performed for all variables measured at project level ( $n = 331$ ). The correlations vary from 0.139 to 0.697 (significant at the 0.01 level, two-tailed), being all below 0.8, which could be considered very high (Field, 2009), except by one exception, BRM11 and BRM12, with 0.807 correlation (significant at the 0.01 level, two-tailed). These results presented in Table 4 suggest an association between all the BRM practices and all the perceptions of success as well as between the overall perception success and the seven dimensions of success.

After having confirmed the relationship between independent and dependent variables, the variance of perceptions between countries was assessed by the Kruskal–Wallis test, a one-way analysis of variance suitable to identify differences between groups of non-parametric datasets (Field, 2009) that is adequate to our non-normally distributed set of variables. The descriptive statistics for each country and the variances between countries on the perceptions of project success presented in Table 5 and on BRM practices in Table 6 suggest some regional or cultural misalignment, aspect which has already been found by other authors when comparing project management patterns across different countries (Müller and Turner, 2004; Müller et al., 2008; Zwikael et al., 2005).

Six out of nine perceptions of success vary between the three countries, where Brazil has higher scores in overall project success, schedule goals, expected outcomes and adherence to business cases. The USA has the highest score on the consolidation of all dimensions and the UK has the highest score on return on the investment. In parallel, only three out of twelve BRM practices vary, where Brazil has higher scores on these three: The value created is clearly measurable, strategic objectives are clearly defined and actual outcomes adhere to the business case. Although the BRM practices follow a much more regular pattern between countries than the perceptions of success, both groups presented variances. Due to these variances, all the next sets of analysis will be stratified by country in order to enable the identification of regular patterns or further differences. The reasons for variations on success rates and BRM practices will not be analysed in more depth, since this is not an objective of our research.

## 4. Findings

### 4.1. Influence of success dimensions on the perceptions of project success

The ability of the seven dimensions to predict project success in each country was assessed using standard multiple regressions. In these models, only schedule goals and required outputs are significant predictors of project success, as presented in Table 7. Although the wider evaluation of success for all stakeholders may not be captured by a single client-driven perspective (McLeod et

Table 4  
Correlations matrix.

Variable		Correlations																					
Code	Name	BRM1	BRM2	BRM3	BRM4	BRM5	BRM6	BRM7	BRM8	BRM9	BRM10	BRM11	BRM12	PSf	PSDf	PSBf	PSSf	PSRf	PSUf	PSEf	PSIf	PSCf	
BRM1	Expected outcomes clearly defined	1.00																					
BRM2	Value created clearly measurable	.350**	1.00																				
BRM3	Strategic objectives clearly defined	.301**	.488**	1.00																			
BRM4	A business case was approved	.229**	.315**	.350**	1.00																		
BRM5	Outputs and outcomes were reviewed	.272**	.301**	.332**	.325**	1.00																	
BRM6	Stakeholders were aware of the results	.296**	.310**	.315**	.309**	.578**	1.00																
BRM7	Actual outcomes adhered to the business case	.256**	.494**	.383**	.426**	.363**	.298**	1.00															
BRM8	Activities aiming to ensure the integration	.310**	.240**	.348**	.217**	.311**	.360**	.261**	1.00														
BRM9	After project closure, kept monitoring project outcomes	.208**	.319**	.361**	.349**	.335**	.306**	.355**	.348**	1.00													
BRM10	Performed a process to ensure the integration	.331**	.354**	.355**	.342**	.337**	.334**	.382**	.357**	.496**	1.00												
BRM11	Benefits management strategy throughout the company	.173**	.214**	.276**	.269**	.290**	.238**	.311**	.349**	.327**	.478**	1.00											
BRM12	Benefits management strategy for the project under analysis	.210**	.239**	.252**	.293**	.270**	.262**	.308**	.304**	.308**	.506**	.807**	1.00										
PSf	Project success	.194**	.225**	.151**	.182**	.183**	.162**	.354**	.232**	.238**	.211**	.163**	.148**	1.00									
PSDf	Project success dimensions	.384**	.429**	.366**	.331**	.312**	.322**	.580**	.339**	.363**	.429**	.316**	.285**	.595**	1.00								
PSBf	Budget	.363**	.223**	.213**	.226**	.164**	.209**	.294**	.210**	.186**	.287**	.243**	.247**	.427**	.721**	1.00							
PSSf	Schedule	.293**	.283**	.336**	.210**	.162**	.183**	.417**	.266**	.298**	.302**	.180**	.139*	.500**	.766**	.431**	1.00						
PSRf	Outputs	-.351**	-.276**	-.149**	-.208**	-.264**	-.299**	-.347**	-.235**	-.199**	-.283**	-.170**	-.189**	-.522**	-.755**	-.603**	-.521**	1.00					
PSUf	Undesired Outcomes	.285**	.312**	.241**	.234**	.253**	.309**	.433**	.301**	.312**	.357**	.254**	.220**	.473**	.776**	.544**	.522**	-.555**	1.00				
PSEf	Expected Outcomes	.198**	.310**	.336**	.251**	.237**	.217**	.454**	.268**	.332**	.336**	.282**	.210**	.382**	.697**	.307**	.596**	-.373**	.391**	1.00			
PSIf	Return on Investment	-.234**	-.405**	-.309**	-.294**	-.230**	-.161**	-.465**	-.226**	-.279**	-.323**	-.294**	-.270**	-.411**	-.753**	-.506**	-.456**	.391**	-.532**	-.474**	1.00		
PSCf	Business Case	.254**	.411**	.325**	.291**	.300**	.279**	.599**	.244**	.270**	.331**	.214**	.197**	.339**	.689**	.320**	.443**	-.400**	.431**	.483**	-.522**	1.00	

Zero order correlations: \*p < .05; \*\*p < .01. n = 331 individual project management practitioners.

Table 5  
Perceptions of Project success — Descriptive statistics and Kruskal–Wallis test.

Perceptions of project success			Mean (standard deviation)			Kruskal–Wallis test	
Group	Variable	Dimension	USA	UK	Brazil	H	df
General	PS	Project success	0.00 (1.02)	−0.16 (0.88)	0.06 (1.06)	<b>6.210*</b>	2
	PSD	Project success dimensions	0.15 (0.93)	−0.26 (0.99)	0.08 (1.02)	<b>8.598*</b>	2
Project Management	PSBf	Budget	0.27 (0.82)	−0.07 (0.97)	−0.10 (1.11)	4.981	2
Performance	PSSf	Schedule	0.08 (0.96)	−0.22 (0.95)	0.13 (1.03)	<b>9.736**</b>	2
Creation of Value to the Business	PSRf	Outputs	−0.26 (0.79)	0.06 (0.97)	0.11 (1.10)	5.746	2
	PSUf	Undesired outcomes	0.25 (0.81)	−0.09 (0.90)	−0.02 (1.09)	3.453	2
	PSEf	Outcomes	−0.14 (1.10)	−0.11 (0.90)	0.16 (0.98)	<b>7.211*</b>	2
	PSIf	Investment	0.05 (0.84)	0.35 (1.04)	−0.18 (1.04)	<b>15.439***</b>	2
	PSIf	Business case	0.11 (0.94)	−0.48 (1.02)	0.21 (0.94)	<b>24.701***</b>	2
Number of cases			76	63	156		

Level of significance: \*p < .05; \*\*p < .01; \*\*\*p < .001. Significant items in bold.

al., 2012), these results suggest projects' customers and the outputs they obtain on the desired schedules having the most influencing role in deciding whether projects are successful. One suggested reason is the delivery of outputs throughout a set of stages usually split within a pre-defined schedule being the most conventional, and maybe the clearest way of providing evidence for the evaluation of project success (Zwikael and Smyrk, 2012), making then the time of project completion and product delivery as the best for assessing project success (Yu et al., 2005). On the other hand, the long-term and more complex assessment of outcomes related to the strategic value created to the business, suggested as essential by Zwikael and Smyrk (2012), seems to still not be employed or not seem as a relevant method of evaluation, perhaps because these results are much more difficult to notice.

A new model was employed for the US data focusing on the most relevant variables. The backward method was employed as a way to gradually remove non-significant predictors from the model, and then reassess the remaining ones (Field, 2009). The new model predicts 18.4% of project success (R = 0.195,

$\Delta R^2 = 0.184$ , F = 17.903, significant at the 0.001 level) with only one variable: schedule goals (significant at the 0.001 level). Although these results support a higher relevance of criteria related to project management performance also in the United States, they strongly suggest the existence of other predictors which are not included in our model. These predictors could be variables associated to more situational or subjective dimensions, as suggested by Ika (2009) and McLeod et al. (2012).

The low relevance on budget goals is not aligned to the literature review which suggests budget, schedule and outputs – the triple constraint – being generally relevant criteria to companies and practitioners, and it is suggested for further research. In addition, although the literature may affirm that strategic relevance determinates the most relevant projects (Jenner, 2010; Kendall and Rollins, 2003; Thorp, 2007); our results evidence dimensions related to project management performance being still the most employed approach of project success, as previously suggested by Bryde (2005).

Table 6  
BRM practices — Descriptive statistics and Kruskal–Wallis Test.

BRM practices			Mean (standard deviation)			Kruskal–Wallis test	
Group	Variable	Practice	USA	UK	Brazil	H	df
Planning	BRM1	Expected outcomes clearly defined	4.12 (0.83)	3.87 (0.88)	3.68 (1.21)	5.429	2
	BRM2	Value created clearly measurable	3.88 (0.87)	3.46 (1.14)	3.91 (1.14)	<b>9.135*</b>	2
	BRM3	Strategic objectives clearly defined	3.87 (1.08)	3.79 (0.80)	4.14 (1.03)	<b>13.087**</b>	2
	BRM4	A business case was approved	3.68 (1.00)	3.63 (1.15)	3.60 (1.44)	0.766	2
Review	BRM5	Outputs and outcomes were reviewed	3.76 (1.03)	3.63 (1.22)	3.79 (1.16)	0.960	2
	BRM6	Stakeholders were aware of the results	3.92 (0.93)	3.76 (0.92)	3.90 (1.11)	2.692	2
	BRM7	Actual outcomes adhered to the business case	3.95 (0.99)	3.40 (0.97)	4.01 (1.08)	<b>21.660***</b>	2
Realisation	BRM8	Activities aiming to ensure the integration	4.08 (0.87)	3.76 (1.07)	3.97 (1.13)	3.827	2
	BRM9	After project closure, kept monitoring project outcomes	3.57 (1.15)	3.41 (1.10)	3.60 (1.24)	1.989	2
	BRM10	Performed a process to ensure the integration	3.74 (0.91)	3.27 (1.01)	3.49 (1.26)	5.902	2
Strategy	BRM11	Benefits management strategy throughout the company	2.80 (1.24)	2.56 (1.14)	2.92 (1.36)	3.471	2
	BRM12	Benefits management strategy for the project under analysis	3.11 (1.22)	2.84 (1.24)	2.92 (1.35)	1.488	2
Number of cases			76	63	156		

Level of significance: \*p < .05; \*\*p < .01; \*\*\*p < .001. Significant items in bold.

Table 7  
Regression — Ability of dimensions of project success to predict project success.

Regression model for project success (PSFf)				
Variable		Standardized beta coefficients		
		Project success (PSf)		
Code	Name	UK	US	BR
PSBf	Budget goals	0.15	0.18	0.11
PSSf	Schedule goals	0.19	0.32	<b>0.16*</b>
PSRf	Required outputs	<b>-0.40**</b>	-0.02	<b>-0.30***</b>
PSUf	Undesired outcomes	0.14	-0.05	0.16
PSEf	Expected outcomes	0.08	0.16	0.06
PSIf	Return on investment	0.03	0.21	-0.12
PSCf	Business case	-0.05	0.08	-0.02
R2		0.47	0.23	0.48
Adjusted R2		0.40	0.15	0.46
F		<b>6.99***</b>	<b>2.89*</b>	<b>19.56***</b>

Level of significance: \*p < .05; \*\*p < .01; \*\*\*p < .001. Significant items in bold.

#### 4.2. Influence of BRM practices on project success

BRM practices are able to predict the variable project success only on the Brazilian sample, as presented in Table 8, with two variables being statistically significant. Therefore, these twelve practices seem to have low influence on the current overall perception of project success, especially in the UK and the USA. However, we also assessed the ability of the same BRM practices to predict a variable which consolidates the seven dimensions of project success. In this case, these twelve practices explained between 41.5% and 46.7% of the variance across the three countries. In these models, four measures were statistically significant, even though only the assessment of actual outcomes to verify whether they adhere to the business case was significant on the three countries.

Table 8  
Regression — Ability of BRM practices to predict project success (project success and the dimensions of project success).

Regression models for project success (PSf and PSDf)								
Variable		Standardized beta coefficients						
		Project success (PSf)			Success dimensions (PSDf)			
Code	Name	UK	US	BR	UK	US	BR	
BRM1	Expected outcomes clearly defined	-.039	.151	.053	.177	.235	.131	
BRM2	Value created clearly measurable	.182	-.091	-.102	.030	-.070	-.019	
BRM3	Strategic objectives clearly defined	-.015	.196	-.071	-.127	-.118	.074	
BRM4	A business case was approved	-.083	-.159	.061	-.127	-.118	.074	
BRM5	Outputs and outcomes were reviewed	.096	.096	.007	-.106	.077	-.075	
BRM6	Stakeholders were aware of the results	-.020	-.235	.003	<b>.314*</b>	-.104	.022	
BRM7	Actual outcomes adhered to the business case	.125	.244	<b>.387***</b>	<b>.518**</b>	<b>.424**</b>	<b>.383***</b>	
BRM8	Activities aiming to ensure the integration	.020	.066	<b>.209*</b>	.162	.144	.023	
BRM9	After project closure, kept monitoring project outcomes	-.141	-.021	.152	-.212	-.138	<b>.187*</b>	
BRM10	Performed a process to ensure the integration	.176	-.093	.030	.106	.134	.139	
BRM11	Benefits management strategy throughout the company	.414	-.192	.051	-.056	.086	<b>.267*</b>	
BRM12	Benefits management strategy for the project under analysis	-.212	.084	-.036	-.127	.073	-.159	
R2		.263	.136	.299	.570	.521	.461	
Adjusted R2		.086	-.028	.240	.467	.430	.415	
F		1.483	0.829	<b>5.081***</b>	<b>5.523***</b>	<b>5.717***</b>	<b>10.177***</b>	

Level of significance: \*p < .05; \*\*p < .01; \*\*\*p < .001. Significant items in bold.

The UK has stakeholders being aware of the results of reviews being significant. In turn, Brazil has the organisations monitoring the outcomes after project closure, and a benefit strategy been applied throughout the company are also significant predictors.

Therefore, BRM practices have much stronger influence over the consolidated perception of the seven Dimensions of Project Success than over the current overall perception of project success. Since all the dimensions related to the creation of value for the business are not significantly associated to the overall perception of success, BRM practices may have stronger influence over the creation of value for the business. The next subsection will confirm this supposition by analysing the influence of BRM practices over each dimension.

#### 4.3. Influence of BRM practices on dimensions of success

We evaluated the ability of BRM practices to predict each one of the seven dimensions of project success. The analysis was performed in two groups, as follows. Three dimensions related to project management performance composed the first group. For this group, BRM practices explain between 9% and 26% of the variance. The BRM practices that are statistically significant are: 1) expected outcomes being clearly defined, 2) strategic objectives clearly defined, 3) adherence of actual outcomes to the business case, 4) activities aiming to ensure the integration being performed as part of the project scope, 5) after project closure the organisation keeps monitoring project outcomes, and 6) a pre-planned process was performed to ensure the integration of the outputs into the business routine. These six practices cover activities related to the definition of the required benefits, to their subsequent control during project execution and to the embedment of project outcomes into the business routine. However, in the three countries the utilisation of a benefits management strategy – BRM11 and BRM12 – is

not associated to these dimensions. More details about each regression are presented in Table 9.

The four dimensions related to value for business composed the second group. In this case, BRM practices explain between 15% and 49% of the variance. Eight practices are statistically significant, evidencing a much stronger association of these practices with success on the creation of value to the business. In the three countries, the adherence of actual outcomes to the business case is associated to most dimensions, except by undesired outcomes in the US and expected outcomes in the UK. Despite these two exceptions, this result confirms the relevance of this practice on the prediction of the dimensions of project success, as presented in Table 8. In addition, the stakeholders being aware of results of project reviews is a practice associated to the return on investment across the three countries, which evidences the frequent realignment of expectations among stakeholders being a critical success factor for strategic project success, as previously identified by Jugdev and Müller (2005). More details about each regression are presented in Table 10.

## 5. Discussion

### 5.1. Project management performance: The more relevant success criteria

The first set of analysis presented in Table 7 reinforces the current idea that organisations and professionals evaluate project success straight after the delivery stage has finished (Atkinson, 1999) and mostly by criteria related to project management performance. Bryde (2005) has previously identified and suggested this practice as a narrow way to measure success by focusing on short-term measures.

Besides encouraging project managers to focus on short-term and tactical measures rather than on long-term and strategic improvements on performance (Bryde, 2005), this approach also challenges any attempt to implement BRM practices. In order to apply Benefits Realisation Management in support to a successful implementation of business strategies, organisations need to redesign their success criteria to increase the relevance of dimensions related to the creation of value for the business. Otherwise, any initiatives aiming to increase success rates of the most strategically oriented projects may seem unsuccessful, since organisations are still focusing on the evaluation of how successful they are on project management rather than evaluating how successful their projects are in creating value for the business.

### 5.2. Benefits Realisation Management: drivers to the creation of strategic value

The results presented on Tables 8, 9 and 10 revealed BRM practices being much more associated to the creation of value to the business than to project management performance, as Cooke-Davies (2002) has previously identified. Due to the low association between the creation of value and the overall perception of success, BRM practices have relatively low ability to predict the overall perception of project success, in comparison to the much higher ability they have over a balanced combination of dimensions. Nevertheless, although the results can be different between countries, the models presented on Tables 9 and 10 revealed BRM practices being somehow associated to most dimensions of success, even to schedule goals and required outputs, which were the only dimensions being significantly associated to the overall perception of success, both of which are related to success in project management performance.

Table 9  
Regression — Ability of BRM practices to predict success dimensions related to project management performance.

Regression models for project management success dimensions (PSBf, PSSf, PSRf)

Variable		Standardized beta coefficients								
		Budget (PSBf)			Schedule (PSSf)			Outputs (PSRf)		
Code	Name	UK	US	BR	UK	US	BR	UK	US	BR
BRM1	Expected outcomes clearly defined	0.11	0.24	<b>0.31***</b>	0.27	0.22	0.11	-0.02	-0.27	<b>-0.18**</b>
BRM2	Value created clearly measurable	-0.01	-0.03	-0.02	-0.11	-0.21	-0.16	-0.13	0.01	0.04
BRM3	Strategic objectives clearly defined	0.02	-0.07	-0.02	0.10	<b>0.43**</b>	0.15	0.00	-0.10	0.13
BRM4	A business case was approved	-0.07	0.03	0.10	-0.15	-0.16	0.02	0.21	0.13	-0.08
BRM5	Outputs and outcomes were reviewed	-0.20	-0.05	-0.06	-0.22	0.14	-0.18	-0.06	-0.13	0.06
BRM6	Stakeholders were aware of the results	0.37	-0.01	-0.02	0.15	-0.24	-0.02	-0.28	-0.04	-0.09
BRM7	Actual outcomes adhered to the business case	<b>0.39*</b>	0.03	0.15	0.32	<b>0.51**</b>	<b>0.32***</b>	<b>-0.39*</b>	<b>-0.40**</b>	<b>-0.20**</b>
BRM8	Activities aiming to ensure the integration	-0.03	<b>0.37*</b>	-0.09	<b>0.50**</b>	-0.09	0.06	0.01	0.04	-0.10
BRM9	After project closure, kept monitoring project outcomes	-0.19	0.14	0.07	<b>-0.29*</b>	-0.26	<b>0.21*</b>	0.06	0.27	-0.10
BRM10	Performed a process to ensure the integration	0.16	0.00	-0.01	-0.08	0.09	<b>0.21*</b>	-0.03	-0.10	-0.14
BRM11	Benefits management strategy throughout the company	-0.14	0.07	0.25	0.09	0.12	0.13	-0.07	0.04	-0.01
BRM12	Benefits management strategy for the project under analysis	-0.01	-0.03	0.00	-0.13	0.07	-0.20	0.20	-0.08	-0.02
R2		0.27	0.30	0.25	0.40	0.38	0.31	0.36	0.35	0.23
Adjusted R2		0.09	0.17	0.18	0.25	0.26	0.25	0.21	0.23	0.16
F		1.52	<b>2.30*</b>	<b>3.88***</b>	<b>2.73**</b>	<b>3.15**</b>	<b>5.30***</b>	<b>2.37**</b>	<b>2.87**</b>	<b>3.49***</b>

Level of significance: \*p < .05; \*\*p < .01; \*\*\*p < .001. Significant items in bold.

Another relevant finding presented in Table 10 is the practice adherence of actual outcomes to the ones planned in the business case being consistently relevant to predict two dimensions of success across the three countries: the return on the investment and, obviously, the business case success. These results evidence business cases being effective tools for the comparison of the results between project evaluations, performed at project closure

stages, to the results of project appraisals, done at project start for the approval of business cases and updated throughout project execution. They also make the relevance of financial appraisals on business cases clear, since these are key elements to support success on the return on investment.

Although the relevance of these BRM practices on influencing the perception of project success seems to be

Table 10

Regression — Ability of BRM practices to predict success dimensions related to the creation of value for the business.

Regression models for the creation of value for the business success dimensions (PSUs, PSEs, PSIs, PSCs)

Variable	Name	Standardized beta coefficients											
		Undesired Outcomes (PSUs)			Outcomes (PSEs)			Investment (PSIs)			Business Case (PSCs)		
		UK	US	BR	UK	US	BR	UK	US	BR	UK	US	BR
BRM1	Expected outcomes clearly defined	0.10	0.22	0.05	0.30	-0.06	-0.05	-0.09	<b>-0.26*</b>	-0.04	0.09	0.19	-0.01
BRM2	Value created clearly measurable	0.02	-0.14	-0.01	0.04	-0.03	-0.03	-0.12	0.01	-0.12	-0.06	0.05	0.05
BRM3	Strategic objectives clearly defined	-0.15	-0.02	0.00	0.24	0.23	0.03	-0.16	-0.11	0.00	0.17	0.22	-0.01
BRM4	A business case was approved	-0.12	0.12	-0.05	-0.03	-0.12	0.01	-0.01	0.12	-0.14	-0.09	-0.21	0.08
BRM5	Outputs and outcomes were reviewed	-0.16	-0.14	0.01	-0.04	0.05	-0.04	0.12	-0.19	0.03	0.09	0.08	-0.02
BRM6	Stakeholders were aware of the results of reviews	<b>0.39*</b>	0.29	0.08	0.00	-0.11	0.05	<b>-0.39*</b>	<b>0.39**</b>	<b>0.18*</b>	0.02	-0.09	0.13
BRM7	Actual outcomes adhered to the business case	<b>0.56**</b>	0.08	<b>0.29**</b>	0.10	<b>0.33*</b>	<b>0.42***</b>	<b>-0.35*</b>	<b>-0.28*</b>	<b>-0.22*</b>	<b>0.60***</b>	<b>0.61***</b>	<b>0.39***</b>
BRM8	Activities aiming to ensure the integration	-0.09	0.16	0.08	<b>0.34**</b>	0.12	-0.02	-0.12	<b>-0.28*</b>	0.01	0.08	0.02	-0.03
BRM9	After project closure, kept monitoring project outcomes	-0.19	0.04	<b>0.20*</b>	-0.16	-0.11	<b>0.19*</b>	0.12	0.13	-0.14	-0.14	-0.11	0.01
BRM10	Performed a process to ensure the integration	<b>0.46**</b>	0.06	0.03	-0.02	0.18	0.15	0.11	-0.16	-0.08	0.14	0.11	0.10
BRM11	Benefits management strategy throughout the company	<b>-0.35*</b>	0.12	<b>0.31*</b>	0.20	0.10	<b>0.37**</b>	0.08	-0.10	-0.13	-0.08	-0.01	0.19
BRM12	Benefits management strategy for the project under analysis	0.05	0.05	-0.20	-0.32	0.10	<b>-0.29*</b>	0.10	-0.17	-0.02	0.04	-0.07	-0.22
R2		0.55	0.37	0.29	0.40	0.29	0.42	0.42	0.52	0.29	0.59	0.56	0.30
Adjusted R2		0.44	0.25	0.23	0.26	0.15	0.37	0.28	0.42	0.23	0.49	0.47	0.24
F		<b>5.08***</b>	<b>3.04**</b>	<b>4.96***</b>	<b>2.79**</b>	<b>2.14*</b>	<b>8.54***</b>	<b>3.03**</b>	<b>5.61***</b>	<b>4.84***</b>	<b>5.91***</b>	<b>6.60***</b>	<b>5.07***</b>

Level of significance: \*p < .05; \*\*p < .01; \*\*\*p < .001. Significant items in bold.

still in its early stages, our findings give evidence of project management, traditionally focused on delivering outputs in a required schedule and budget being able to be expanded to a much broader approach into the strategic management area. In the last decade, project management research has given increasing significance to topics such as strategic alignment and organisational outcomes (Crawford et al., 2006) and the alignment between project management and organisations' strategies has been identified as imperative (Cooke-Davies et al., 2009). In parallel, project management has been increasingly incorporated into the research developed by other management disciplines, especially when related to strategy and project portfolio management (Kwak and Anbari, 2009a). In this scenario, portfolio management has recently emerged as part of a more dynamic and strategic organisational governance (Thorpe, 2007), aiming to organise and manage resources in order to ensure the return on a strategically aligned set of investments (Kwak and Anbari, 2009b). Thus, Benefits Realisation Management becomes relevant to integrating project, programme and portfolio management (Breese, 2012). It also takes the responsibility to the very relevant and previously overlooked phase, or process, of outcome realisation proposed by Zwikael and Smyrk (2012) once these practices aim to embed the outcomes from strategically aligned portfolios into the existing business performance management frameworks.

## 6. Conclusion

This article provides evidence on the association that Benefits Realisation Management has with project success, especially on dimensions related to the creation of value for the business, suggesting BRM practices as important contributors to the successful execution of business strategies, in line with Cooke-Davies (2002). In addition, it evidences some association between these practices and success on some dimensions related to project management performance. Nevertheless, although BRM practices are strongly associated to the creation of value for the business, these practices by themselves seem to be insufficient to result in high levels of project management performance, and that has always been and will always be important for project success (Patanakul and Shenhar, 2012). Therefore they need to be implemented along with other project, programme and portfolio management practices in order to ensure the complete management of project performance on the wider context as suggested by Bryde (2005).

The findings also suggest that a benefits management strategy integrated into the corporate governance processes helps organisations to increase their ability to define and manage their success criteria. More importantly, benefits management helps to put in place a key condition for project success identified by Jugdev and Müller (2005). This is the alignment between project management teams, sponsors and clients (owners), in order to deliver successful and valuable changes to the organisation and shareholders through the development of strategic resources (Kunc and Morecroft, 2010).

Some particular aspects can shed more light in our results. For example, a stratified analysis between different

market sectors and types of projects can contribute to understanding the variance on the influence of each BRM practice and of each dimension of success on the final evaluation of project success. Depending on these results, organisations or even countries may be suggested to prioritise some practices or dimensions, depending on the composition of their sets of projects. Similarly, a better understanding of the aspects influencing the perceptions about the utilisation of each practice can help organisations and even countries to clearly identify their maturity in BRM, and then support the improvement of their practices. Another aspect which may impact on comparisons of success rates between countries is the cultural and psychological biases which may influence on the individual perceptions of success. A deeper understanding of these differences can enable a more effective management of project portfolios, especially by organisations managing cross-borders projects, since similar evaluations of success can suggest different meanings.

## Conflict of interest statement

All authors declare that they have no conflict of interest.

## Appendix A. Factor analysis

Table 11  
Factor analysis of scales measuring independent variables (A).

Group	Item	Components
		1
Project success <sup>a</sup>	Project success ( $\alpha = 0.818$ )	
	Project successful — Team's perspective	<b>0.880</b>
	Project successful — Sponsor's perspective	<b>0.870</b>
	Project successful — Customer's perspective	<b>0.818</b>
Project success dimensions <sup>a</sup>	Project success dimensions ( $\alpha = 0.940$ )	
	Schedule goals — Sponsor's perspective	<b>0.723</b>
	Schedule goals — Customer's perspective	<b>0.720</b>
	Return on investment — Sponsor's perspective	<b>0.718</b>
	Undesired outcomes — Sponsor's perspective	<b>0.712</b>
	Schedule goals — Team's perspective	<b>0.708</b>
	Return on investment — Customer's perspective	<b>0.707</b>
	Required outputs — Sponsor's perspective	<b>0.706</b>
	Budget goals — Sponsor's perspective	<b>0.694</b>
	Undesired outcomes — Customer's perspective	<b>0.694</b>
	Required outputs — Customer's perspective	<b>0.693</b>
	Business case — Customer's perspective	<b>0.688</b>
	Business case — Sponsor's perspective	<b>0.687</b>
	Undesired outcomes — Team's perspective	<b>0.679</b>
	Expected outcomes — Sponsor's perspective	<b>0.660</b>
	Budget goals — Customer's perspective	<b>0.654</b>
	Expected outcomes — Customer's perspective	<b>0.653</b>
Return on investment — Team's perspective	<b>0.629</b>	
Required outputs — Team's perspective	<b>0.623</b>	
Budget goals — Team's perspective	<b>0.622</b>	
Business case — Team's perspective	<b>0.612</b>	
Expected outcomes — Team's perspective	<b>0.581</b>	

Significant items by factor in bold. Extraction method: Principal component analysis.

<sup>a</sup> Only one component was extracted. Only the component matrix is presented, because the solution cannot be rotated.

Table 12  
Factor analysis of scales measuring independent variables (B).

Group	Item	Components — Pattern				Components — Structure				
		1	2	3	4	1	2	3	4	
Success on project management performance	Budget success ( $\alpha = 0.882$ )									
	Budget goals — Team's perspective	<b>0.943</b>				0.922	0.455		–0.601	
	Budget goals — Sponsor's perspective	<b>0.870</b>				0.909	0.415		–0.501	
	Budget goals — Customer's perspective	<b>0.845</b>		–0.104		0.867	0.323		–0.564	
	Schedule success ( $\alpha = 0.936$ )									
	Schedule goals — Team's perspective			–0.949		0.425	0.900		–0.505	
	Schedule goals — Sponsor's perspective			–0.922		0.380	0.875		–0.443	
	Schedule goals — Customer's perspective			–0.920		0.349	0.840		–0.444	
	Outputs success ( $\alpha = 0.843$ )									
	Required outputs — Team's perspective		<b>0.882</b>			0.573	0.512		–0.955	
Required outputs — Sponsor's perspective		<b>0.869</b>			0.566	0.513		–0.936		
Required outputs — Customer's perspective		<b>0.840</b>			0.579	0.473		–0.931		
Success on the creation of value to the business	Investment success ( $\alpha = 0.870$ )									
	Return on investment — Team's perspective				–0.906	0.476	0.498	0.480	–0.923	
	Return on investment — Sponsor's perspective				–0.886	0.470	0.489	0.497	–0.910	
	Return on investment — Customer's perspective	0.111		–0.139	–0.808	0.493	0.487	0.322	–0.834	
	Business case success ( $\alpha = .887$ )									
	Business case — Team's perspective		<b>0.962</b>			0.916	0.431	0.521	–0.562	
	Business case — Sponsor's perspective		<b>0.833</b>			0.912	0.401	0.382	–0.420	
	Business case — Customer's perspective		<b>0.709</b>		0.182	–0.145	0.858	0.419	0.580	–0.583
	Undesired outcomes success ( $\alpha = 0.867$ )									
	Undesired outcomes — Team's perspective		<b>0.936</b>			0.395	0.930	0.361	–0.488	
	Undesired outcomes — Sponsor's perspective		<b>0.905</b>			0.367	0.903	0.378	–0.479	
	Undesired outcomes — Customer's perspective		<b>0.802</b>			0.401	0.831	0.331	–0.471	
	Outcomes success ( $\alpha = 0.855$ )									
	Expected outcomes — Team's perspective				<b>0.913</b>	0.414	0.379	0.915	–0.462	
Expected outcomes — Sponsor's perspective				<b>0.895</b>	0.468	0.371	0.914	–0.446		
Expected outcomes — Customer's perspective	0.108			<b>0.744</b>	0.466	0.357	0.795	–0.395		

Significant items by factor in bold. Extraction methods; principal component analysis. Rotation method; Oblimin with Kaiser.

## References

- Amason, A.C., 2011. *Strategic Management: From Theory to Practice*, First ed. Routledge, London.
- Association for Project Management, 2013. Individual membership. [Online] Available at: <http://www.apm.org.uk/Individual> ([Accessed 17 01 2013]).
- Atkinson, R., 1999. Project management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria. *Int. J. Proj. Manag.* 17 (6), 337–342.
- Baccarini, D., 1999. The logical framework method for defining project success. *Proj. Manag. J.* 30 (4), 25–32.
- Blaxter, L., Hughes, C., Tight, M., 1996. *How to Research*, First ed. Open University Press, Berkshire.
- Bradley, G., 2010. *Benefit Realisation Management*, First ed. MPG Books Group, UK, Farnham.
- Breese, R., 2012. *Benefits Realisation Management: Panacea or False Dawn?* *Int. J. Proj. Manag.* 351 (30), 341.
- British Standards Institute, 2000. *BS EN 12973: Value Management*. British Standards Institution, London.
- Bryde, D.J., 2005. Methods for Managing Different Perspectives of Project Success. *Br. J. Manag.* 16, 119–131.
- Buttrick, R., 1997. *The Project Workout: a Toolkit for Reaping the Rewards From all Your Business Projects*, First ed. Financial Times Management, London.
- Camilleri, E., 2011. *Project Success: Critical Factors and Behaviours*, First ed. Gower Publishing Limited, Farnham.
- Chittenden, J., Bon, J.V., 2006. *Programme Management based on MSP: A Management Guide*, First ed. Van Haren Pub, Zaltbommel.
- Cooke-Davies, T., 2002. The “real” success factors on projects. *Int. J. Proj. Manag.* 20, 185–190.
- Cooke-Davies, T.J., Crawford, L.H., Lechler, T.G., 2009. *Project management systems: moving project management from an operational to a strategic discipline*. *Proj. Manag. J.* 40 (1), 110–123.
- Crawford, L., Pollack, J., England, D., 2006. Uncovering the trends in project management: journal emphases over the last 10 years. *Int. J. Proj. Manag.* 24, 175–184.
- Field, A., 2009. *Discovering Statistics Using SPSS*, Third ed. SAGE Publications Ltd., London.
- Foddy, W., 1993. *Constructing Questions for Interviews and Questionnaires: Theory and Practice in Social Research*, First ed. Cambridge University Press, Cambridge.
- Gardiner, P.D., 2005. *Project Management: A Strategic Planning Approach*, First ed. Palgrave Macmillan, New York.
- German Project Management Association, 2010. *German Project Management Association — Global Project Management Survey*. ([Online] Available at: [http://www.gpm-ipma.de/know\\_how/studienergebnisse/global\\_pm\\_survey.html](http://www.gpm-ipma.de/know_how/studienergebnisse/global_pm_survey.html) [Accessed 12 01 2012]).
- Gray, C.F., Larson, E.W., 2006. *Project Management: The managerial Process*, International Edition 2006 ed. McGraw-Hill/Irwin, New York.
- Hubbard, D.W., 2007. *How to Measure Anything: Finding the Value of “Intangibles” in Business*, First ed. John Wiley & Sons, Hoboken.
- Iarossi, G., 2006. *The Power of Survey Design: A User's Guide for Managing Surveys, Interpreting Results, and Influencing Respondents*, First ed. The World Bank, Washington.
- Ika, L.A., 2009. Project success as a topic in project management journals. *Proj. Manag. J.* 40 (4), 6–19.
- International Project Management Association, 2013. *Europe*. ([Online] Available at: <http://ipma.ch/membership/member-associations/europe/> [Accessed 17 01 2013]).
- Jenner, S., 2010. *Transforming Government and Public Services: Realising Benefits Through Project Portfolio Management*, First ed. Ashgate, Burlington.

- Jenner, S., 2012. *Managing Benefits: Optimizing the Return From Investments*, 1st ed. TSO, London.
- Johnson, G., Scholes, K., 2002. *Exploring Corporate Strategy*, Sixth ed. Prentice Hall, London.
- Jugdev, K., Müller, R., 2005. A retrospective look at our evolving understanding of project success. *Proj. Manag. J.* 36 (4), 19–31.
- Kaplan, R.S., Norton, D.P., 2008. *The Execution Premium: Linking Strategy to Operations for Competitive Advantage*, First ed. Harvard Business School Publishing Corporation, Boston.
- Kendall, G.I., Rollins, S.C., 2003. *Advanced Project Portfolio Management and the PMO: Multiplying ROI at Warp Speed*, First ed. J. Ross, Boca Raton.
- Kerzner, H., 2009. *Project Management: A Systems Approach to Planning, Scheduling and Controlling*, 10th ed. John Wiley & Sons, Hoboken.
- Kerzner, H., 2011. *Project Management Metrics, KPIs, and Dashboards: A Guide to Measuring and Monitoring Project Performance*, First ed. John Wiley & Sons, Inc., Hoboken.
- Kunc, M., Morecroft, J., 2010. Managerial decision-making and firm performance under a resource-based paradigm. *Strateg. Manag. J.* 31, 1164–1182.
- Kwak, Y.H., Anbari, F.T., 2009a. Analyzing project management research: perspectives from top management journals. *Int. J. Proj. Manag.* 27 (5), 435–446.
- Kwak, Y.H., Anbari, F.T., 2009b. Availability-impact analysis of project management trends: perspectives from allied disciplines. *Proj. Manag. J.* 40 (2), 94–103.
- Levine, H.A., 2005. *Project Portfolio Management: A Practical Guide to Selecting Projects, Managing Portfolios, and Maximizing Benefits*, First ed. Jossey-Bass, San Francisco.
- McLeod, L., Doolin, B., MacDonell, S.G., 2012. A perspective-based understanding of project success. *Proj. Manag. J.* 43 (5), 68–86.
- Melton, T., Iles-Smith, P., Yates, J., 2008. *Project Benefits Management: Linking Your Project to the Business*, First ed. Butterworth-Heinemann, London.
- Müller, R., Spang, K., Özcan, S., 2008. *Cultural Differences in Decision-making Among Project Teams: Examples From Swedish and German Project Teams*. Warsaw, Project Management Institute.
- Müller, R., Turner, J.R., 2004. *Cultural Differences in Project Owner–Manager Communication*. Project Management Institute, London.
- OGC, 2007. *Managing Successful Programmes*, Third ed. TSO (The Stationery Office), London.
- Pallant, J., 2010. *SPSS Survival Manual: A Step By Step Guide to Data Analysis Using the SPSS program*, Fourth ed. Open University Press, Maidenhead.
- Patanakul, P., Shenhar, A.J., 2012. What project strategy really is: the fundamental building block in strategic project management. *Proj. Manag. J.* 43 (1), 4–20.
- Peterson, R.A., 2000. *Constructing Effective Questionnaires*, First ed. Sage Publications, Thousand Oaks.
- Pinto, J.K., Mantel, S.J., 1990. The causes of project failure. *IEEE Trans. Eng. Manag.* 37 (4), 269–276.
- Prabhakar, G.P., 2008. What is project success: a literature review. *Int. J. Bus. Manag.* 3 (9), 3–10 (September).
- Price Waterhouse Coopers, 2007. *Insights and Trends: Current Programme and Project Management Practices*, 1st ed. Price Waterhouse Coopers, London.
- Project Management Institute, 2013. About Us. ([Online] Available at: <http://www.pmi.org/About-Us.aspx> [Accessed 17 01 2013]).
- Ritson, G., Johansen, E., Osborne, A., 2012. Successful programs wanted: exploring the impact of alignment. *Proj. Manag. J.* 43 (1), 21–36.
- Scott-Young, C., Samson, D., 2008. Project success and project team management: evidence from capital projects in the process industries. *J. Oper. Manag.* 26, 749–766.
- Serrador, P., 2013. The impact of planning on project success: a literature review. *J. Mod. Proj. Manag.* 1 (2), 28–39.
- Shenhar, J.A., Patanakul, P., 2012. What project strategy really is: the fundamental building block in strategic project management. *Proj. Manag. J.* 43 (1), 4–20 (February).
- Tabachnick, B.G., Fidell, L.S., 2007. *Using Multivariate Statistics*, Fifth ed. Pearson/Allyn & Bacon, Boston.
- Teddlic, C., Tashakkori, A., 2009. *Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioral Sciences*. SAGE, Los Angeles.
- The Economist, 2009. Closing the Gap — The Link Between Project Management excellence and long-term success. The Economist Intelligence Unit, London.
- Thiry, M., 2002. Combining value and project management into an effective programme management model. *Int. J. Proj. Manag.* 20, 221–227.
- Thorp, J., 2007. *The Information Paradox*, Revised ed. Fujitsu Consulting Inc., Toronto.
- Turner, J.R., 2009. *The Handbook of Project-Based Management — Leading Strategic Change in Organizations*, Third ed. The McGraw-Hill, London.
- Turner, J.R., Müller, R., 2003. On the nature of the project as a temporary organization. *Int. J. Proj. Manag.* 21, 1–8.
- Ward, J., Daniel, E., 2006. *Benefits Management — Delivering Value From IS & IT Investments*, 1st ed. John Wiley and Sons, Chichester.
- Yu, A.G., Flett, P.D., Bowers, J.A., 2005. Developing a value-centered proposal for assessing project success. *Int. J. Proj. Manag.* 23, 428–436.
- Zwikael, O., Shimizu, K., Globerson, S., 2005. Cultural differences in project management capabilities: a field study. *Int. J. Proj. Manag.* 23, 454–462.
- Zwikael, O., Smyrk, J., 2011. *Project Management for the Creation of Organisational Value*, First ed. Springer-Verlag London Limited, London.
- Zwikael, O., Smyrk, J., 2012. A general framework for gauging the performance of initiatives to enhance organizational value. *Br. J. Manag.* 23, S6–S22.