Congruency and Users' Sharing on Social Media Platforms: A Novel Approach

for Analyzing Content

Web Appendix

WEB APPENDIX A

Table A1. Summary of Firms per Industry per Platform, Their Posts, and Shares They Received

ICB[1]	Example Firms	No. of Firms	Platform	No. of Posts	No. (%) of the post with visual content	Mean No. of Shares
Basic Materials	Newmont Corporation; Pittsburgh Plate Glass; The Dow Chemical Company (TDCC)	3	Facebook	440	204 (46.36)	8.75
			Twitter	617	373 (60.45)	7.92
Consumer Goods	General Motors; Michael Kors; Ralph Lauren	12	Facebook	1,780	1,265 (71.07)	69.04
			Twitter	3,012	2,257 (74.93)	51.19
Consumer Services	Amazon; eBay; Columbia Broadcasting System (CBS)	26	Facebook	5,846	3,325 (56.88)	180.18
			Twitter	9,473	7,195 (75.95)	72.06
Financials	Nasdaq; Bank of America; Discover	21	Facebook	3,918	2,042 (52.12)	25.30
			Twitter	5,255	3,111 (59.20)	7.87
Health Care	Humana; Pfizer Inc.; Waters Corporation	15	Facebook	2,447	1,311 (53.58)	59.14
			Twitter	5,017	2,599 (51.80)	5.47
Industrials	3M; Caterpillar Inc.; Lockheed Martin	26	Facebook	5,039	2,444 (48.50)	48.29
			Twitter	7,797	5,147 (66.01)	11.49
Oil & Gas	Chevron; Range Resources	2	Facebook	250	97 (38.80)	9.29
			Twitter	385	273 (70.91)	10.19
Technology	Adobe; Cisco; International Business Machines (IBM)	31	Facebook	15,389	3,191 (20.74)	43.63
			Twitter	17,238	10,055 (58.33)	13.91
Telecommunications	American Telephone & Telegraph (AT&T); Frontier Communications	2	Facebook	182	156 (85.71)	31.85
			Twitter	454	254 (55.95)	9.62
Utilities	American Electronic Power (AEP); Entergy; Southern Company	8	Facebook	1,199	536 (44.70)	43.41
			Twitter	2,403	1,366 (56.85)	4.09
Total		**146**	**Facebook**	**36,490**	**14,571 (39.93%)**	**62.73**
			Twitter	**51,651**	**32,630 (63.17%)**	**24.35**

Notes: [1] ICB represents Industry Classification Benchmark; No.: number.

Table A2. Examples of Textual Content of Posts and the Degree to Which They Are Affective or Informative

Platform	Example of textual content	The degree to which the textual content is affective (i.e., TEXT_AFFECTIVENESS)	Normalized TEXT_AFFECTIVENESS (i.e., Z_TEXT_AFFECTIVENESS)	The degree to which the textual content is informative (i.e., TEXT_INFORMATIVENESS)
Facebook	*Keep your love close to your heart with this new sterling silver Return to Tiffany® Love lock necklace—a nod to our iconic Return to Tiffany® collection. At Tiffany it's always #LoveNotLike. Shop Return to Tiffany® Love: http://tco.nyc/GwjhpW* [1]	0.67	2.89	0.33
	Happy, happy birthday to Carrie Underwood, one of Music Choice's March #FemaleIcons! Celebrate #WomensHistoryMonth and Ms. Underwood w/ Music Choice On Demand: http://bit.ly/1TRjIeF. [2]	0.51	0.72	0.49
	College application costs can add up—fast. Hit the books, and uncover 5 smart ways to cut down the price tag: http://time.com/money/4083205/college-applications-no-fee-waiver/ [3]	0.43	−0.32	0.57
	Interested in advancing your management abilities or broadening your network? Our Women's Leadership Network is dedicated to strengthening these elements, with member Kristin Kosmides putting them to practice. We congratulate Kristin on her graduation from the Towson University Professional Leadership Program for Women, which focuses on the strength of women's leadership and influence,and addresses the challenges women face in the workplace. #LifeAtLeggMason [4]	0.29	−2.14	0.71
Twitter	*Layer ice cream sandwiches, frosting, and fruit for a No Bake Ice Cream Cake! #4thOfJuly #SummerToRemember* [5]	0.61	3.24	0.39
	Stunning RT @DaciaZimmer A5: I'm a night person so a #Sunset with a drink and friends is my favorite! #ExpediaChat [6]	0.55	1.94	0.45
	Read more about Innovation that Simplifies Commerce http://pbi.bz/21PiUZc #PowerofPrecision #commercecloud #APIs [7]	0.44	−1.61	0.56
	Join us tomorrow to hear about the key digital trends in the logistics industry http://sforce.co/29MZ5y7 [8]	0.41	−1.10	0.58

Notes: TEXT_AFFECTIVENESS + TEXT_INFORMATIVENESS = 1; the higher the TEXT_AFFECTIVENESS (i.e., the more the textual content of the firm's post is affective), the lower the TEXT_INFORMATIVENESS (i.e., the lower the textual content of the firm's post is informative); provided links may no longer be available or may have been modified, as firms can edit their posts;
[1] https://www.facebook.com/Tiffany/photos/a.132570878067.107794.48713703067/10153924041743068/?type=3;
[2] https://www.facebook.com/FrontierCorp/photos/a.92157032194/10154792806387195/?type=3&theater;
[3] https://www.facebook.com/BankofAmerica/photos/a.264003693653874/997429230311313/?type=3&theater;
[4] https://www.facebook.com/leggmason/photos/a.10151463260448822/10153885193438822/?type=3&theater;
[5] https://twitter.com/kroger/status/749603606928719872;
[6] https://twitter.com/Expedia/status/707654115078356993;
[7] https://twitter.com/PitneyBowes/status/729734691188772864;
[8] https://twitter.com/salesforce/status/752804725347741697.

Table A3. Top 30 Stems and Labels under Affective and Informative Topics Estimated by Seeded LDA Using Textual and Visual Content from Facebook and Twitter

Textual Content	Affective (TEXT_AFFECTIVENESS)	happi (0.0319), photo (0.0231), shop (0.0213), chanc (0.0189), feel (0.0152), chanc_win (0.0119), hope (0.0104), mom (0.0102), girl (0.0102), hit (0.0098), day (0.0098), kitchen (0.0086), dad (0.0082), comment (0.0073), kick (0.0068), cat (0.0065), mondaymotiv (0.0064), sunday (0.0064), schein (0.0063), henri (0.0061), vacat (0.006), tiffani (0.0058), good (0.0055), henri_schein (0.0055), win (0.0047), love (0.0046), magic (0.0045), celebr (0.0045), nyc (0.0044), summer (0.0041)
	Informative (TEXT_INFORMATIVENESS)	today (0.005), learn (0.005), power (0.0044), make (0.0038), world (0.0036), year (0.0031), work (0.0029), time (0.0028), share (0.0028), find (0.0026), busi (0.0025), digit (0.0024), live (0.0024), peopl (0.0024), check (0.0022), start (0.0021), technolog (0.0021), tip (0.0021), custom (0.002), read (0.0019), team (0.0019), life (0.0019), store (0.0019), proud (0.0019), import (0.0019), save (0.0018), great (0.0018), week (0.0018), join (0.0018), design (0.0018)
Visual Content	Affective (IMAGE_AFFECTIVENESS)	person (0.0373), man (0.0136), adaptation (0.0087), shoe (0.0083), dress (0.0075), food (0.0063), building (0.0062), water (0.0059), clothing (0.0059), woman (0.0058), vehicle (0.0055), photo_caption (0.0052), top (0.0047), tourism (0.0046), transport (0.0046), airplane (0.0045), pants (0.0044), event (0.0042), architecture (0.0042), sky (0.004), red (0.004), grass (0.0039), dish (0.0039), coat (0.0037), car (0.0034), photography (0.0033), nature (0.0033), hat (0.0033), athletic_shoe (0.0033), couch (0.0033)
	Informative (IMAGE_INFORMATIVENESS)	font (0.0761), line (0.0698), text (0.0655), **packaged_goods (0.0607)**, technology (0.0338), brand (0.0304), product (0.0291), logo (0.0229), diagram (0.0223), electronics (0.0207), electronic_device (0.0198), parallel (0.0194), banner (0.0187), mobile_phone (0.0186), graphics (0.0162), graphic_design (0.0155), screenshot (0.0131), advertising (0.0125), laptop (0.0114), design (0.0108), multimedia (0.0102), illustration (0.0097), organism (0.0094), gadget (0.0082), blue (0.0066), aqua (0.0065), smartphone (0.0062), document (0.0062), green (0.0059), circle (0.0057)

Notes: Underscore ("_") is used if two words describe a (single) object; values in parentheses correspond to the stem's or label's posterior probability from the estimated topic-stem and topic-label distributions, respectively. Reading example (see the bold stem and number): Performing seeded LDA on image labels yields 0.0607 as the posterior probability of the label *packaged_goods* for the informative topic.

Table A4. Example of GCV API Output for the Visual Content of a Firm's Post on Facebook

	Face on the image
	Yes

	Text on the image
	Yes

	Logo on the image
	Yes

	Objects and concepts embedded in the image
	Sky; Text; Morning; Fun; Sunlight; Summer; Leisure; Vacation; Happy; Photography; Man; Person; Top; Racket.

Notes: In this example, Travelers Insurance, an insurance company, informs users about its insurance for boaters by sharing a link on Facebook, along with an image related to sailing; we estimate the degree that the visual content is affective (IMAGE_AFFECTIVENESS) as 0.59, indicating that the visual of this post is more affective (than informative).

Link: https://www.facebook.com/travelers/photos/a.397969218521.177957.29123338521/10154127449153522/?type=3.

Table A5. Examples of Visual Content of Posts and the Degree to Which They Are Affective or Informative

Facebook

	1	2	3	4
Degree that the visual content is affective (i.e., IMAGE_AFFECTIVENESS)	0.64	0.58	0.45	0.44
Normalized IMAGE_AFFECTIVENESS (i.e., Z_IMAGE_AFFECTIVENESS)	1.40	0.49	−1.16	−1.42
Degree to which the visual content is informative (i.e., IMAGE_INFORMATIVENESS)	0.36	0.42	0.55	0.56

Twitter

	5	6	7	8
Degree to which the visual content is affective (i.e., IMAGE_AFFECTIVENESS)	0.64	0.60	0.52	0.42
Degree (normalized) to which the visual content is affective (i.e., Z_IMAGE_AFFECTIVENESS)	1.38	0.83	−0.33	−1.74
Degree to which the visual content is informative (i.e. IMAGE_INFORMATIVENESS)	0.36	0.40	0.48	0.58

Notes: IMAGE_AFFECTIVENESS + IMAGE_INFORMATIVENESS = 1; the higher the IMAGE_AFFECTIVENESS (i.e., the more the visual content of the firm's post is affective), the lower the IMAGE_INFORMATIVENESS (i.e., the lower the visual content of the firm's post is informative); provided links may not be available anymore or modified as firms can edit their posts;

[1] https://www.facebook.com/alaskaairlines/photos/a.176872592485.126366.28488837485/10154367271112486/?type=3;

[2] https://www.facebook.com/Disney/photos/a.127564720953.105058.11784025953/10153471800700954/?type=3;

[3] https://www.facebook.com/Amazon/photos/a.10150354146103124.344011.9465008123/10154041974888124/?type=3;

[4] https://www.facebook.com/microchiptechnology/photos/a.71882186741/10154511142576742/?type=3&theater;
[5] https://twitter.com/Discover/status/726146539698147328;
[6] https://twitter.com/Yahoo/status/732172261487185920;
[7] https://twitter.com/IBM/status/707042278674550784;
[8] https://twitter.com/CaterpillarInc/status/739140685673160704.

Table A6.1. Robustness of Results for Association Between Users' Sharing and FGC on Facebook

Dependent variable						POST_SHARES_N						
Column	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Textual content variables												
TEXT_WORDS_N	0.007**	0.007**	0.007**	0.007**	0.007**	0.007**	0.007**	0.007**	0.006**	0.006**	0.006**	0.006**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_HAS_QUESTION	−	−0.293**	−0.288**	−0.288**	−0.288**	−0.288**	−0.287**	−0.287**	−0.281**	−0.281**	−0.281**	−0.281**
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_HAS_EXCLAMATION	−	−	0.120**	0.120**	0.119**	0.120**	0.115**	0.115**	0.119**	0.119**	0.119**	0.117**
			(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_HAS_CITATION	−	−	−	0.037	0.036	0.033	0.036	0.036	0.040	0.040	0.043	0.048
				(0.668)	(0.680)	(0.707)	(0.680)	(0.680)	(0.642)	(0.642)	(0.618)	(0.582)
TEXT_HAS_EMOJI	−	−	−	−	0.094	0.093	0.079	0.079	0.072	0.072	0.074	0.081
					(0.132)	(0.137)	(0.202)	(0.202)	(0.250)	(0.250)	(0.236)	(0.194)
TEXT_HAS_HASHTAG	−	−	−	−	−	−0.019	−0.029	−0.029	−0.028	−0.028	−0.029	−0.031
						(0.403)	(0.199)	(0.199)	(0.214)	(0.214)	(0.205)	(0.170)
TEXT_HAS_URL	−	−	−	−	−	−	−0.168**	−0.168**	−0.166**	−0.166**	−0.166**	−0.161**
							(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_POSITIVITY	−	−	−	−	−	−	−	−	0.034**	0.034**	0.034**	0.033**
									(0.001)	(0.001)	(0.001)	(0.002)
TEXT_NEGATIVITY	−	−	−	−	−	−	−	−	−0.052**	−0.052**	−0.053**	−0.052**
									(0.000)	(0.000)	(0.000)	(0.000)
Z_TEXT_AFFECTIVENESS	0.038**	0.045**	0.039**	0.038**	0.038**	0.039**	0.030*	0.030*	0.027*	0.027*	0.027*	0.027*
	(0.002)	(0.000)	(0.002)	(0.002)	(0.002)	(0.002)	(0.015)	(0.015)	(0.032)	(0.032)	(0.030)	(0.029)
Visual content variables												
POST_HAS_IMAGE	0.967**	0.993**	0.992**	0.991**	0.989**	0.994**	1.030**	1.030**	1.043**	1.043**	1.002**	0.927**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
POST_HAS_IMAGE×IMAGE_HAS_FACE	−0.430**	−0.443**	−0.454**	−0.454**	−0.452**	−0.453**	−0.463**	−0.463**	−0.465**	−0.465**	−0.468**	−0.475**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
POST_HAS_IMAGE×IMAGE_HAS_LOGO	−	−	−	−	−	−	−	−	−	−	0.074**	0.043
											(0.010)	(0.157)
POST_HAS_IMAGE×IMAGE_HAS_TEXT	−	−	−	−	−	−	−	−	−	−	−	0.114**
												(0.001)
POST_HAS_IMAGE× Z_IMAGE_AFFECTIVENESS	0.144**	0.139**	0.138**	0.138**	0.137**	0.137**	0.134**	0.134**	0.136**	0.136**	0.143**	0.153**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Control variables												
POST_PUBLISHED_WEEKEND	−0.118**	−0.117**	−0.118**	−0.118**	−0.118**	−0.118**	−0.119**	−0.119**	−0.119**	−0.119**	−0.119**	−0.120**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
POST_IS_LINK	0.818**	0.851**	0.851**	0.850**	0.850**	0.852**	0.887**	0.887**	0.899**	0.899**	0.895**	0.890**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Controls for an hour of the post	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls for firm	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	−0.792**	−0.843**	−0.830**	−0.827**	−0.835**	−0.839**	−0.886**	−0.886**	−0.972**	−0.972**	−0.951**	−0.945**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	36,490	36,490	36,490	36,490	36,490	36,490	36,490	36,490	36,490	36,490	36,490	36,490
Log likelihood	−144,704	−144,611	−144,595	−144,595	−144,594	−144,593	−144,571	−144,571	−144,555	−144,555	−144,552	−144,546

Notes: p-values are in parentheses; $^*p < 0.05$, $^{**}p < 0.01$.

Table A6.2. Robustness of Results for Association Between Users' Sharing and FGC on Twitter

Dependent variable						POST_SHARES_N						
Column	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Textual content variables												
TEXT_WORDS_N	0.023**	0.024**	0.024**	0.024**	0.024**	0.024**	0.019**	0.019**	0.019**	0.019**	0.019**	0.019**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_HAS_QUESTION	–	−0.102**	−0.107**	−0.107**	−0.107**	−0.108**	−0.114**	−0.114**	−0.114**	−0.114**	−0.113**	−0.114**
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_HAS_EXCLAMATION	–	–	−0.079**	−0.079**	−0.079**	−0.082**	−0.109**	−0.109**	−0.109**	−0.109**	−0.110**	−0.112**
			(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_HAS_CITATION	–	–	–	0.117	0.118	0.123	0.113	0.113	0.113	0.113	0.118	0.119
				(0.526)	(0.521)	(0.504)	(0.541)	(0.541)	(0.540)	(0.540)	(0.521)	(0.520)
TEXT_HAS_EMOJI	–	–	–	–	0.185	0.188	0.167	0.167	0.168	0.168	0.168	0.172
					(0.085)	(0.080)	(0.121)	(0.121)	(0.119)	(0.119)	(0.119)	(0.108)
TEXT_HAS_HASHTAG	–	–	–	–	–	0.035**	0.015	0.015	0.015	0.015	0.015	0.013
						(0.000)	(0.111)	(0.111)	(0.111)	(0.111)	(0.130)	(0.196)
TEXT_HAS_URL	–	–	–	–	–	–	−0.195**	−0.195**	−0.195**	−0.195**	−0.194**	−0.187**
							(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_POSITIVITY	–	–	–	–	–	–	–	–	0.006	0.006	0.006	0.006
									(0.282)	(0.282)	(0.260)	(0.270)
TEXT_NEGATIVITY	–	–	–	–	–	–	–	–	−0.005	−0.005	−0.006	−0.005
									(0.461)	(0.461)	(0.447)	(0.465)
Z_TEXT_AFFECTIVENESS	0.046**	0.048**	0.053**	0.053**	0.053**	0.052**	0.041**	0.041**	0.041**	0.041**	0.041**	0.042**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Visual content variables												
POST_HAS_IMAGE	0.429**	0.429**	0.429**	0.429**	0.429**	0.426**	0.407**	0.407**	0.407**	0.407**	0.395**	0.341**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
POST_HAS_IMAGE×IMAGE_HAS_FACE	−0.039**	−0.043**	−0.041**	−0.041**	−0.041**	−0.041**	−0.051**	−0.051**	−0.052**	−0.052**	−0.051**	−0.057**
	(0.003)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
POST_HAS_IMAGE×IMAGE_HAS_LOGO	–	–	–	–	–	–	–	–	–	–	0.026*	−0.007
											(0.018)	(0.576)
POST_HAS_IMAGE×IMAGE_HAS_TEXT	–	–	–	–	–	–	–	–	–	–	–	0.102**
												(0.000)
POST_HAS_IMAGE× Z_IMAGE_AFFECTIVENESS	−0.062**	−0.062**	−0.062**	−0.062**	−0.062**	−0.062**	−0.064**	−0.064**	−0.064**	−0.064**	−0.061**	−0.050**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Control variables												
POST_PUBLISHED_WEEKEND	0.041**	0.042**	0.043**	0.043**	0.043**	0.044**	0.042**	0.042**	0.042**	0.042**	0.042**	0.041**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Controls for an hour of the post	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls for firm	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	2.090**	2.078**	2.070**	2.070**	2.070**	2.061**	2.304**	2.304**	2.289**	2.289**	2.290**	2.296**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	51,651	51,651	51,651	51,651	51,651	51,651	51,651	51,651	51,651	51,651	51,651	51,651
Log likelihood	−164,765	−164,727	−164,702	−164,702	−164,701	−164,694	−164,533	−164,533	−164,532	−164,532	−164,530	−164,497

Notes: *p*-values are in parentheses; *$p < 0.05$, **$p < 0.01$

Table A7. Results for Association Between Users' Sharing and FGC on Facebook and Twitter (Initial Seeds Enriched with LIWC and Harvard Dictionaries)

Dependent variable	Model (1) POST_SHARES_N				Model (2) POST_SHARES_N			
Column	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Platform	Facebook	Twitter	Facebook	Twitter	Facebook	Twitter	Facebook	Twitter
Textual content variables								
TEXT_WORDS_N	0.007**	0.019**	0.007**	0.019**	0.003**	0.024**	0.004**	0.024**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_HAS_QUESTION	−0.285**	−0.114**	−0.285**	−0.113**	−0.350**	−0.100**	−0.350**	−0.100**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_HAS_EXCLAMATION	0.111**	−0.114**	0.111**	−0.111**	−0.125**	−0.089**	−0.126**	−0.085**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_HAS_CITATION	0.043	0.117	0.041	0.126	0.343*	0.272	0.335*	0.285
	(0.618)	(0.524)	(0.637)	(0.493)	(0.037)	(0.234)	(0.042)	(0.211)
TEXT_HAS_EMOJI	0.078	0.173	0.082	0.175	0.146	0.014	0.151*	0.018
	(0.211)	(0.107)	(0.190)	(0.103)	(0.051)	(0.915)	(0.044)	(0.891)
TEXT_HAS_HASHTAG	−0.039	0.013	−0.040	0.011	0.008	0.038**	0.005	0.035**
	(0.093)	(0.164)	(0.085)	(0.257)	(0.793)	(0.001)	(0.852)	(0.003)
TEXT_HAS_URL	−0.150**	−0.185**	−0.149**	−0.186**	−0.325**	−0.214**	−0.326**	−0.214**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_POSITIVITY	0.025*	0.006	0.024*	0.006	0.085**	0.009	0.083**	0.009
	(0.020)	(0.294)	(0.023)	(0.296)	(0.000)	(0.173)	(0.000)	(0.171)
TEXT_NEGATIVITY	−0.051**	−0.005	−0.050**	−0.005	−0.019	−0.009	−0.018	−0.008
	(0.000)	(0.483)	(0.000)	(0.514)	(0.326)	(0.326)	(0.347)	(0.344)
Z_TEXT_AFFECTIVENESS	0.080**	0.046**	0.081**	0.049**	0.105**	0.053**	0.109**	0.058**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Visual content variables								
POST_HAS_IMAGE	0.913**	0.340**	0.917**	0.355**	−	−	−	−
	(0.000)	(0.000)	(0.000)	(0.000)				
POST_HAS_IMAGE×IMAGE_HAS_FACE	−0.453**	−0.056**	−0.457**	−0.060**	−0.360**	−0.045**	−0.363**	−0.050**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
POST_HAS_IMAGE×IMAGE_HAS_LOGO	0.037	−0.006	0.037	−0.006	0.088**	0.018	0.088**	0.018
	(0.224)	(0.612)	(0.228)	(0.625)	(0.002)	(0.130)	(0.002)	(0.119)
POST_HAS_IMAGE×IMAGE_HAS_TEXT	0.103**	0.102**	0.105**	0.098**	0.056	0.084**	0.058	0.081**
	(0.004)	(0.000)	(0.003)	(0.000)	(0.089)	(0.000)	(0.079)	(0.000)
POST_HAS_IMAGE×Z_IMAGE_AFFECTIVENESS	0.125**	−0.051**	0.125**	−0.049**	0.072**	−0.055**	0.071**	−0.053**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Z_TEXT_AFFECTIVENESS×POST_HAS_IMAGE× Z_IMAGE_AFFECTIVENESS	−	−	−0.028	−0.042**	−	−	−0.027	−0.045**
			(0.060)	(0.000)			(0.052)	(0.000)
Control variables								
POST_PUBLISHED_WEEKEND	−0.123**	0.041**	−0.124**	0.042**	−0.036	0.010	−0.037	0.011
	(0.000)	(0.000)	(0.000)	(0.000)	(0.260)	(0.430)	(0.252)	(0.385)
POST_IS_LINK[a]	0.890**	−	0.891**	−	−	−	−	−
	(0.000)		(0.000)					
Controls for an hour of the post	yes	yes	yes	yes	yes	yes	yes	yes
Controls for firm	yes	yes	yes	yes	yes	yes	yes	yes
Constant	−0.997**	2.300**	−0.992**	2.302**	4.153**	1.956**	4.169**	1.975**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	36,490	51,651	36,490	51,651	14,571	32,630	14,571	32,630
Log likelihood	−144,542	−164,488	−144,540	−164,457	−59,701	−113,459	−59,699	−113,423

Notes: p-values are in parentheses; *$p < 0.05$, **$p < 0.01$; [a] applies to Facebook.

Table A8. Results for Association Between Users' Sharing and FGC on Facebook and Twitter (Using Propensity Score Matching)

	Model (1)			
Dependent variable	**POST_SHARES_N**			
Column	**(1)**	**(2)**	**(3)**	**(4)**
Platform	Facebook	Twitter	Facebook	Twitter
Textual content variables				
TEXT_WORDS_N	0.023**	0.016**	0.023**	0.016**
	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_HAS_QUESTION	−0.282**	−0.101**	−0.283**	−0.101**
	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_HAS_EXCLAMATION	0.065	−0.109**	0.064	−0.108**
	(0.112)	(0.000)	(0.119)	(0.000)
TEXT_HAS_CITATION	−1.136**	0.125	−1.139**	0.129
	(0.004)	(0.620)	(0.004)	(0.610)
TEXT_HAS_EMOJI	−0.267	0.127	−0.265	0.130
	(0.161)	(0.255)	(0.164)	(0.243)
TEXT_HAS_HASHTAG	0.055	−0.022	0.055	−0.023
	(0.130)	(0.254)	(0.131)	(0.227)
TEXT_HAS_URL	−0.237**	−0.289**	−0.238**	−0.288**
	(0.000)	(0.000)	(0.000)	(0.000)
TEXT_POSITIVITY	0.113**	−0.002	0.113**	−0.002
	(0.000)	(0.889)	(0.000)	(0.874)
TEXT_NEGATIVITY	−0.068*	−0.016	−0.068*	−0.016
	(0.010)	(0.255)	(0.010)	(0.264)
Z_TEXT_AFFECTIVENESS	0.051	0.027**	0.050	0.028**
	(0.077)	(0.005)	(0.083)	(0.003)
Visual content variables				
POST_HAS_IMAGE	1.787**	0.385**	1.785**	0.393**
	(0.000)	(0.000)	(0.000)	(0.000)
POST_HAS_IMAGE×IMAGE_HAS_FACE	−0.373**	−0.079**	−0.371**	−0.081**
	(0.000)	(0.003)	(0.000)	(0.002)
POST_HAS_IMAGE×IMAGE_HAS_LOGO	0.186**	−0.040	0.186**	−0.040
	(0.000)	(0.087)	(0.000)	(0.089)
POST_HAS_IMAGE×IMAGE_HAS_TEXT	−0.029	0.081**	−0.030	0.078**
	(0.554)	(0.002)	(0.540)	(0.003)
POST_HAS_IMAGE×Z_IMAGE_AFFECTIVENESS	0.122**	−0.046**	0.118**	−0.043**
	(0.000)	(0.000)	(0.000)	(0.000)
Z_TEXT_AFFECTIVENESS×POST_HAS_IMAGE×	−	−	0.025	−0.021*
Z_IMAGE_AFFECTIVENESS			(0.380)	(0.041)
Control variables				
POST_PUBLISHED_WEEKEND	−0.126**	0.062**	−0.126**	0.062**
	(0.002)	(0.004)	(0.002)	(0.004)
POST_IS_LINK[a]	1.798**	−	1.798**	−
	(0.000)		(0.000)	
Controls for an hour of the post	yes	yes	yes	yes
Controls for industry	yes	yes	yes	yes
Constant	−1.818**	3.575**	−1.816**	3.578**
	(0.001)	(0.000)	(0.001)	(0.000)
N	11,507	11,507	11,507	11,507
Log likelihood	−39,326	−38,369	−39,326	−38,367

Notes: p-values are in parentheses; $^{*}p < 0.05$, $^{**}p < 0.01$; [a] applies to Facebook.
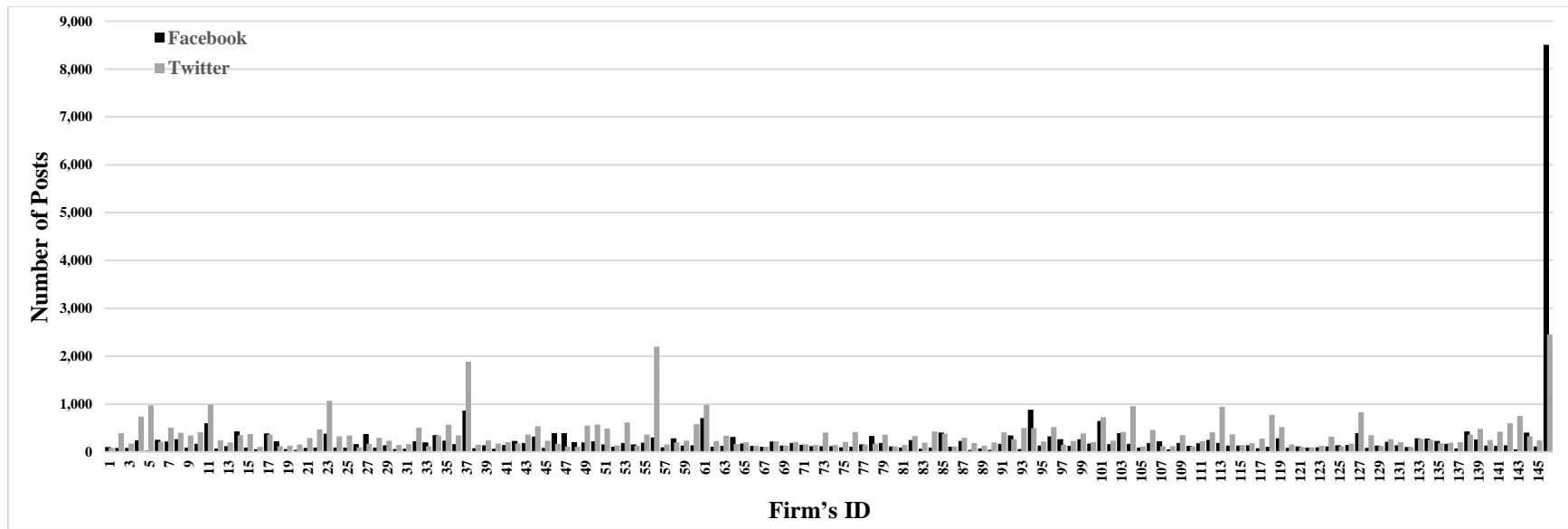
Figure A1. Number of Posts by Firms per Platform

Facebook

N = 36,490
M = 65.74
SD = 558.35

Twitter

N = 51,651
M = 24.35
SD = 128.49
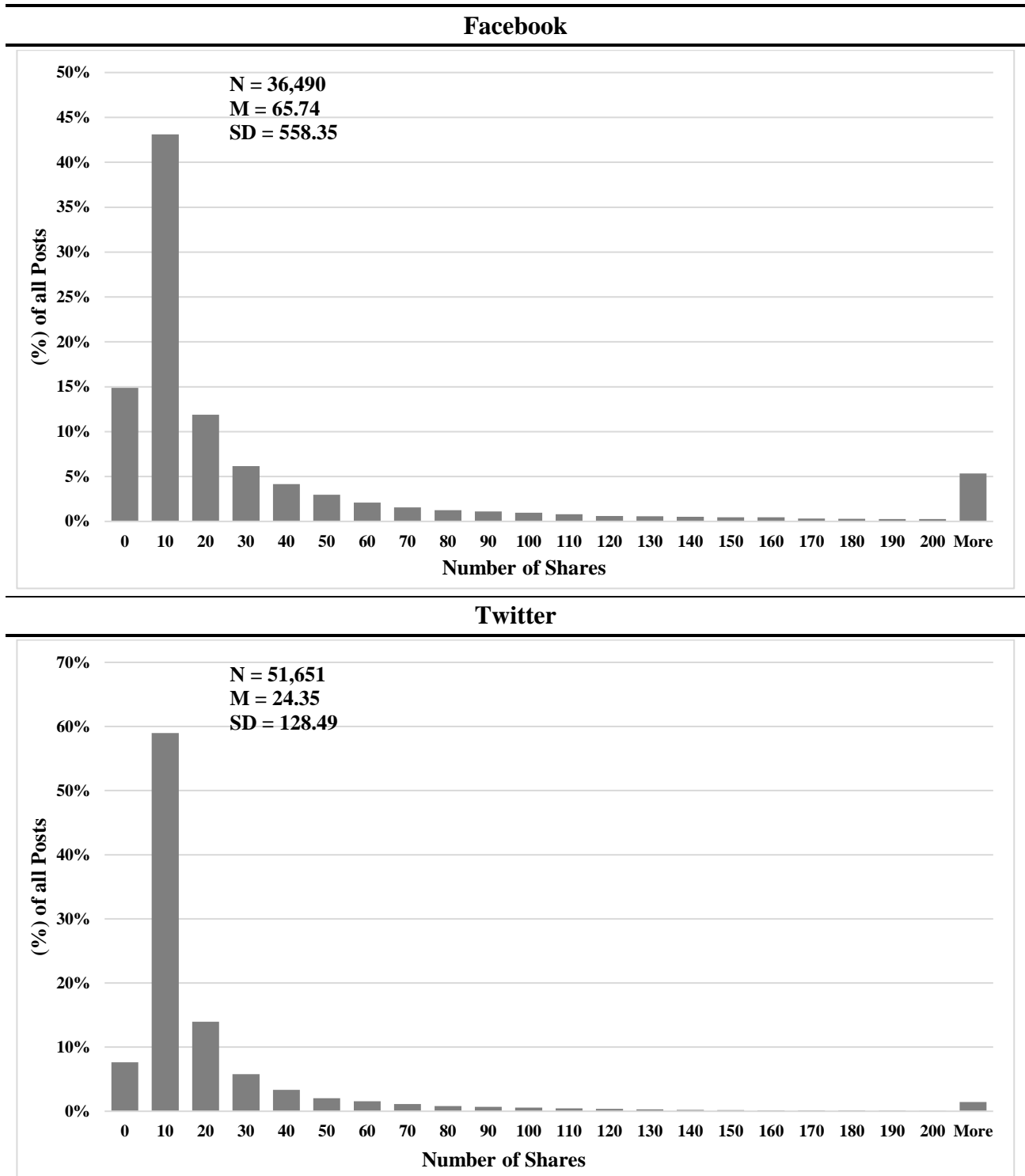
Figure A2. Distribution of the Number of Shares that FGC Received on Facebook and Twitter

Notes: N represents the number of observations; M represents the mean; SD represents the standard deviation.

WEB APPENDIX B

Identification of Seeds for Informative and Affective Textual Content

We rely on Amazon Mechanical Turk (MTurk) workers to find proper seeds for informative and affective topics. We start by randomly picking 500 posts per platform (i.e., 1,000 posts in total). Then we take the textual content of these posts and ask five MTurk workers[1] to evaluate the degree the textual content is perceived as informative or affective (in line with our definitions in the main manuscript; on the 7-point scale from 1 to 7). More specifically, we instruct MTurk workers to rely on the following definitions while annotating the content:

Informative content: An image or text is considered informative when it contains information such as product characteristics, features, factual data, and objective selling arguments such as price, components, ingredients or performance.

Affective content: An image or text is considered affective when its main purpose is to elicit an affective or emotional response (i.e., relating to moods, feelings, and attitudes).

Before proceeding with our analysis, we deleted 120 responses (out of 1,000; 3 posts for which LDA could not assign a topic because the text was very short or an empty string; 117 posts where workers were undecided, giving a median response of 4). To decide whether or not the textual content of a post is informative, we employ a voting method: Textual content of a post is informative (affective) if identified as more informative (affective) by more than half of MTurk workers.

Once the textual content is labeled as informative or affective, we apply stemming (using the same text processing techniques as above), and remove stems that appear only once or twice in the drawn subsample. Next, we use the remaining stems as seeds of the affective (or informative)

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[1] All MTurk workers in our study are located in the US and have job approval ratings of at least 90%.

topic if, in at least two-thirds of the cases, the respective textual content (which contains the respective stem) was classified as affective (or informative) by our voting method.[2] Subsequently, we use seeded LDA to calculate document-topic probabilities that represent the degree to which (the textual content of) the firm's post is affective or informative.

Moreover, we check the validity of our method by using the posts that MTurk workers tagged as informative or affective. For this purpose, we apply a five-fold cross-validation procedure (using 80% of the dataset as training and the remaining 20% as hold-out).

To evaluate our results, we consider the topic probability of 0.5 as the cut-off point, and transfer our estimated probability for each post to a dummy (i.e., a textual content is considered informative if TEXT_INFORMATIVENESS $\geq$ 0.5 and is considered affective if otherwise). Even though we lose information by applying this cut-off, we find an average accuracy of 74.56%, which constitutes a lower accuracy boundary and supports our approach and construct validities (see Table B1).[3]

Table B1. Classification Accuracy Results

	Textual Content (N = 880)	Visual Content (N = 888)
Accuracy	74.56%	78.45%
Sensitivity	51.80%	82.80%
Specificity	85.00%	68.93%

However, we note that our study reaches higher accuracy by removing borderline cases. More specifically, if we consider those posts that received clearer (median) scores by MTurk workers (i.e., rated as 6 or 7 for affective and rated as 1 or 2 for informative), we reach an accuracy of 80.04% (N = 560). We reach an even higher accuracy of 84.86% (N = 177) if we consider those posts that received (median) scores of 7 for affective and 1 for informative by MTurk workers.

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[2] For example, if the stem X appears five times (four times labelled as affective (by at least three workers) and once labelled as informative), we then consider the stem X in our affective seeds (because 4/5 = 80% > 2/3).

[3] We rely on sensitivity and specificity (over precision and recall), as both true negatives and true positives are equally important for checking the validity of our approach.

We next proceed with applying our method to the entire dataset, using seeds constructed from the full subsample developed from MTurk workers' responses. Our results reveal that affective textual content has mean topic-probabilities of 0.45 (SD = 0.08) and 0.47 (SD = 0.04) for Facebook posts and tweets, respectively.

Table 3 presents the most common stems for both topics estimated by seeded LDA. As anticipated, our results show that the stems under the affective topic (TEXT_AFFECTIVENESS) have a more emotional or feeling nature (e.g., celebrate, hope, summer, or other happiness-related words) as compared to those of the informative textual topic (TEXT_ INFORMATIVENESS), which mostly consist of words related to advertising, product, and brand-related topics (e.g., business-, product-, company-, store-, and technology-related words). This provides face validity for our approach.

Identification of Seeds for Informative and Affective Visual Content

To estimate the degree to which the visual content is affective or informative, we follow steps similar to those applied for textual content, and employ seeded LDA to classify the images along with the two topics (i.e., affective and informative). In particular, to find our seeds for informative and affective images, we select 500 random images per platform (i.e., 1,000 images in total), and for each image ask five MTurk workers to evaluate the degree the image is perceived as informative or affective (in line with our definitions in the main manuscript; on the 7-point-scale from 1 to 7). Next, we dropped 112 responses (where workers were undecided, giving a median response of 4). Afterward, by employing the voting method, we label these images as informative or affective and take their respective labels as our seeds for informative or affective topics.

Following five-fold cross-validation using the images tagged by Amazon MTurk workers

(using 80% of the dataset as training and the remaining 20% as hold-out, with 0.50 as the cut-off

point for our estimated probabilities), we obtain an average accuracy of 78.45% (which can be

considered a lower bound—as we lose some information by the application of the cut-off; see

Table B1). Similar to what we did for textual content, if we consider those posts that received

clearer (median) scores by MTurk workers (i.e., rated as 6 or 7 for affective and rated as 1 or 2

for informative), we reach an accuracy of 82.81% (N = 633). Moreover, we reach an even higher

accuracy of 88.93% (N = 266) if we consider those posts that received (median) scores of 7 for

affective and 1 for informative by MTurk workers.

Table 3 summarizes the most common labels for both affective and informative visual topics

estimated by seeded LDA. Accordingly, Table 3 shows that emotional- and feeling-related labels

frequently appear under the IMAGE_AFFECTIVENESS topic (e.g., nature, tourism, sky) while

the IMAGE_INFORMATIVENESS topic contains more of advertising-, product-, and brand-

related labels (e.g., product, brand, technology). This provides face validity for our approach.

WEB APPENDIX C

Validation of Google's Cloud Vision (GCV) Application Programming Interface (API) Output

We randomly pick 200 images $i \in I$ (100 per platform $p \in P$) with a total of 1,610 unique labels identified by GCV API.[4] Formally, $J_i \in J$ is the set of labels identified by GCV API for the image i in the set of all labels J. Next, for each image i, we randomly pick 5 labels from the set of $J \backslash J_i$ (i.e., labels that are not identified for the respective image and are, therefore, classified as true negative) and add them to the set of labels of the respective image i to create a new set of labels J_i'.

For each label in the new set of labels J_i' for image i, we ask three MTurk workers to evaluate whether or not the respective label in J_i' is clearly identified as an entity in image i. For each label in the set J_i' for image i, we conclude that an entity is identified as part of an image if at least two MTurk workers identify it.

We examine the validity of GCV output, where we find an accuracy rate = 86.42%, precision = 97.64%, recall = 81.36%, and F1 = 88.76%.

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[4] GCV also provides a reliability score for each label, and we retrieve all labels with a reliability score in range [0.5, 1.0].