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User-generated images and its impact on consumer-based brand equity and on purchase intention[1]

Introduction

With the exponentially growing number of consumers using and relying on social media worldwide, it is essential for brand managers to know how to benefit from both firm-created social media and user-generated content (UGC). However, a problem emerges when millions of consumers start publishing different types of brand-related content, such as videos on YouTube, articles on Wikipedia, reviews on Amazon, messages on Twitter, pictures on Instagram, among other online activities. Although it is possible to measure the general effects of the creation of UGC on consumers' perception of brands, those findings cannot be generalized to all types of UGC on social media[2]. Different types of UGC have varying communities, requiring different creation techniques, and differ in their distribution online [3]. Addressing this problem, we decided to focus our research solely on one of the most popular types of brand-related UGC on the Internet, i.e., user-generated images (UGI), in other words, images created by consumers that expose a brand or product and are made available on the Internet.

This study aims to fill a gap in the literature with respect to understanding the effects of UGI on consumers' perception of brands and behavior on a social networking site (SNS); specifically, by examining the effects of consumers' involvement with the creation of UGI on consumers' perception of brands and behavior. While general types of UGC media (i.e., videos, text, audio, and pictures) were empirically tested and documented in literature from the consumption point of view[4, 5], and from the creation point of view[6, 7], thus far, no research has examined the effects of the consumer's involvement with UGI on brand equity and on purchase intention on a SNS context.

To address the gap in literature outlined above, we adapted the framework proposed by Christodoulides and colleagues[8] and tested with creators of brand-related images on the SNS deviantART - a platform that allows people to exhibit, promote, and share their content within a peer community dedicated to the arts. Therefore, we formulated the following research question:

"How does the involvement with UGI influence the consumers' perceptions of brands and behavior with regard to SNS environment?"

[1] This research was funded by the National Science Centre (NCN) – UMO-2012/07/N/HS4/02790.
[2] B. Schivinski, D. Dabrowski, The effect of social media communication on consumer perceptions of brands, „Journal of Marketing Communications", 2014, pp. 1-26.
[3] A.N. Smith, E. Fischer, C. Yongjian, How Does Brand-related User-generated Content Differ across YouTube, Facebook, and Twitter?, „Journal of Interactive Marketing", 2012, vol. 26, Issue 2, pp. 102–113.
[4] M. Bruhn, V. Schoenmueller, D.B. Schäfer, Are social media replacing traditional media in terms of brand equity creation?, „Management Research Review", 2012, vol. 35, Issue 9, pp. 770–790.
[5] B. Schivinski, D. Dabrowski, The Impact of Brand Communication on Brand Equity Dimensions and Brand Purchase Intention Through Facebook, "GUT FME Working Paper Series A, Gdansk University of Technology, Faculty of Management and Economics", 2014, vol. 4, Issue 4, pp. 1–24.
[6] T. Daugherty, M. Eastin, L. Bright, Exploring consumer motivations for creating user-generated content, „Journal of Interactive Advertising", 2008, vol. 8, Issue 2, pp.16–25.
[7] G. Christodoulides, C. Jevons, J. Bonhomme, Memo to Marketers: Quantitative Evidence for Change. How User-Generated Content Really Affects Brands, „Journal of Advertising Research", 2012, vol. 52, Issue 1, pp. 53–64.
[8] Ibidem, pp. 53–64.

To guide us throughout the study and answer the research question, we postulate two research objectives that are relevant for both practitioners and scholars, thus:

(1) To confirm the relationship of UGC drivers reported in literature with the consumers' involvement with the creation of brand-related images on a SNS.

(2) To observe the measure of effect that the consumers' involvement has on the creation of brand-related images, both on brand equity and on purchase intention on a SNS.

This research uses structural equation modeling (SEM) to observe the effects that UGC drivers have on the consumers' involvement with UGI, which subsequently influences brand equity and purchase intention. The article is organized as follows. The first section presents a literature review of the conceptual domain and previous researches of UGC, moving afterwards to UGI and its influence on consumers' perceptions of brands and behavior. In the second section, we provide a description of our research methodology. The third section presents the results of the study. Finally, the last section provides a summary and a discussion of our results, as well as, practical implications for practitioners. Research limitations and suggestions for further studies are also included in this article.

Literature review and study hypotheses

Academic literature on UGC can still be considered to be in its initial phase[9]. According to the OECD, UGC can be defined as: "i. content that is made publicly available over the Internet, ii. content that reflects a certain amount of creative effort, and iii. content created outside professional routines and practices"[10]. In this context, the domains of online brand-related UGC includes different types of digital media such as reviews, ratings, blogs and microblogs, images and photos, videos, audio, games, and podcasts. In line with the UGC delimitation, we define brand-related UGI as original content that are created by consumers outside professional routines and practices, expressed as digital images (such as drawings, photography, photomontage and customization, manga and comics, and 3D renders), which expose a brand or product, and are widely shared on the Internet.

Christodoulides, Jevons and Bonhomme used expert opinions to evaluate four motivating factors for consumers to get involved with general UGC i.e., co-creation, empowerment, community, and self-concept[11]. In this research, we extended their UGC framework to UGIs uploaded to the SNS deviantART.com, in the attempt to enrich the current body of literature on this domain. Therefore, we expect that the factors perceived co-creation, perceived empowerment, perceived community, and perceived self-concept to be positively correlated to the consumers' involvement with UGI.

Brand equity is a key marketing asset[12]. The correct management of brands creates a relationship that differentiates the bonds between a company and its public, thus, generating long-term buying behavior, raising competitive barriers, and driving brand wealth[13]. D.A. Aaker defined brand equity as "a set of brand assets and liabilities linked to a brand, its name and symbol that add to or subtract from the value provided by a product or service to a firm and/or to that firm's customers"[14]. Bearing in mind that brand-related UGI is a form of brand communication, it is expected that its conception to positive influence CBBE as long as the message creates a satisfactory customer reaction to the product in question[15].

Finally, to assess the behavioral influences of the involvement with UGI among consumers, we added brand purchase intention to the conceptual model. Research has shown that consumers are turning more

[9] C. Burmann, A call for "User-Generated Branding, „Journal of Brand Management", 2010, vol. 18, Issue 1, pp. 1–4.

[10] OECD, Participative Web and User-Created Content: Web 2.0 Wikis and Social Networking, Organisation for Economic Cooperation and Development, Paris 2007, p. 9.

[11] G. Christodoulides, C. Jevons, J. Bonhomme, Memo to Marketers: Quantitative Evidence for Change. How User-Generated Content Really Affects Brands, „Journal of Advertising Research", 2012, vol. 52, Issue 1, pp. 53–64.

[12] B. Schivinski, P. Łukasik, Rozwój badań nad kapitałem marki bazującym na konsumencie – przegląd literatury, "Marketing i Rynek", 2014, nr 11, str. 74–80.

[13] K.L. Keller, Conceptualizing, measuring, and Managing Customer-Based Brand Equity, „Journal of Marketing", 1993, vol. 57, Issue 1, pp. 1–22.

[14] D.A. Aaker, *Managing brand equity: Capitalizing on the value of a brand name*, The Free Press, New York 1991, p. 15.

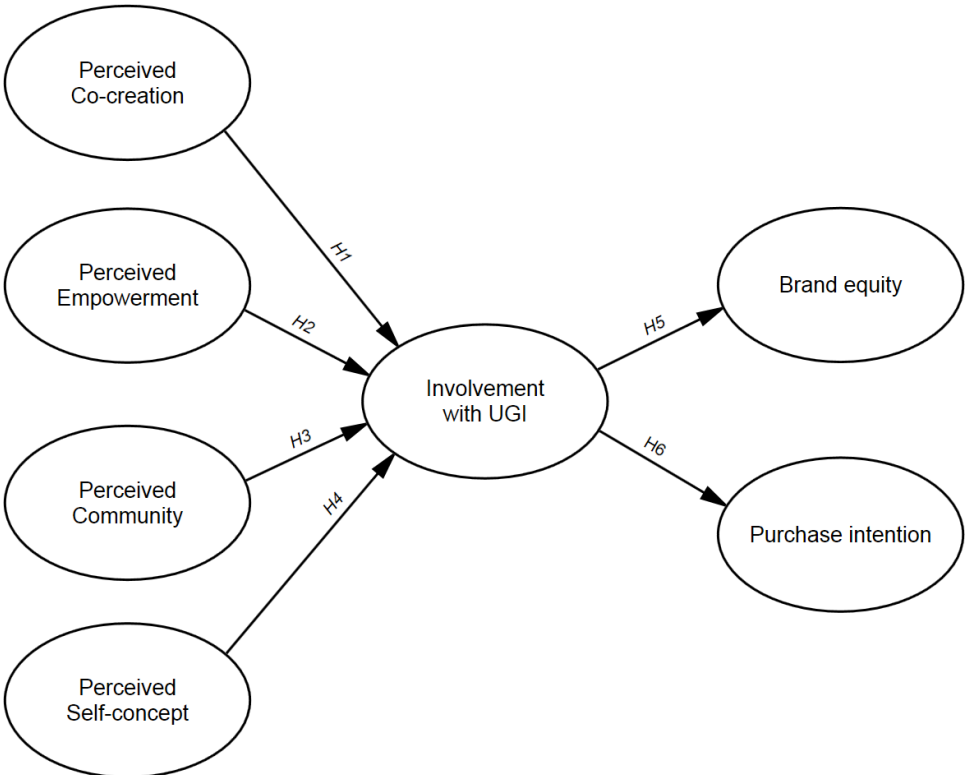
[15] K.L. Keller, Conceptualizing…, op. cit., pp. 1–22.

frequently to social media to conduct their information searches and to make their purchasing decisions[16], we expect involvement with the UGI to positively influence the brand purchase intentions of consumers.

Therefore, we summarize as follows:

H1. Perceived co-creation positively impacts the consumers' involvement with brand-related UGI.
H2. Perceived empowerment positively impacts the consumers' involvement with brand-related UGI.
H3. Perceived community positively impacts the consumers' involvement with brand-related UGI.
H4. Perceived self-concept positively impacts the consumers' involvement with brand-related UGI.
H5. The consumers' involvement with brand-related UGI positively influences brand equity.
H6. The consumers' involvement with brand-related UGI positively influences purchase intention.

Figure 1. Proposed conceptual framework.



Source: own elaboration based on G. Christodoulides, C. Jevons, J. Bonhomme, Memo to Marketers: Quantitative Evidence for Change. How User-Generated Content Really Affects Brands, „Journal of Advertising Research", 2012, vol. 52, issue 1, pages 53–64.

Research methodology

To test the conceptual framework we collected data using a standardized online survey on the SNS deviantART. To identify individual pieces of UGI necessary for the study, searches were undertaken in the SNS using brand and product names as keywords. If the image fitted into the UGI definition's domain, a personalized link of the questionnaire was sent to the author with an invitation to the survey. A total of eleven brands were analyzed (i.e., Adidas, Dr. Pepper, Dunkin' Donuts, Nike, Converse, Vans, Volkswagen, BMW, Audi, Apple, and Persol). From a total of 702 invitations 336 participants took part in the survey (acceptation rate of 48%). Invalid and incomplete questionnaires were rejected, resulting in 301 valid questionnaires. The questionnaires were administrated in English and the only differences between the questionnaires were the brand names.

Males represented 53.5% of the sample. The age of the respondents ranged from 14- to 69- years old (mean 22.55; median 22; std. deviation 6.88). Concerning the educational level of the respondents, the majority (40.7%) affirmed to have a high school diploma; 34.9% declared to have a university degree; and

[16] B. Schivinski, D. Dabrowski, The Impact of Brand Communication on Brand Equity Dimensions and Brand Purchase Intention Through Facebook, "GUT FME Working Paper Series A, Gdansk University of Technology, Faculty of Management and Economics", 2014, vol. 4, Issue 4, pp. 1–24.

the remainder had secondary school certificates or elementary school certificates. Considering their profession, 59.5% of the respondents affirmed to be students; 13.3% were employees; 9% were self-employed; workers were 6.6%; executive employees were 2%; and 9.3% did not provide an answer to this metric.

The items in this research were adapted from Christodoulides and colleagues original framework[17] with the exception of purchase intention that was adapted from B. Yoo, N. Donthu, and S. Lee[18]. The items were measured using a seven-point Likert scale, ranging from (1) "strongly disagree" to (7) "strongly agree". Involvement with UGC, that was measured with a seven-pointed semantic differential scale. The complete list of items can be found at Appendix, Table A1.

Analysis

We utilized reflective measurements to assess the conceptual model. The reliability, dimensionality, and validity of the measures were assessed using exploratory and confirmatory techniques using *M*plus 7.11 software package.

Exploratory factor analysis (EFA) was performed with principal axis factoring method and Varimax rotation. The Kaiser-Meyer-Olkin measure of sampling adequacy test value was 0.94. A total of six factors were extracted and 63.29% of the total variance was explained with no evidence of cross-loadings among the items.

To establish reliability, we used Cronbach's alpha (CA) and composite reliability (CR). The alpha coefficients ranged from 0.76 to 0.91, higher than the recommended value of 0.7[19]. The CR values ranged from 0.76 to 0.92, meeting the standard minimum threshold value of 0.7[20].

To achieve convergent validity, three criteria must be achieved: (a) the model fit must be adequate; (b) the lambda values must be significant and greater than 0.30; and (c) the average variance extracted (AVE) must exceed 0.50[21]. All three criteria were met during the study (for std. loading values see Table A1 in Appendix). For discriminant validity, we relied on the Fornell-Larcker test, which requires the square root AVE for each construct to be greater than any inter-construct correlations[22]. All the latent variables from the conceptual model met this criterion. The reliability, convergent and discriminant validity scores are summarized in Table 02.

Table 02. Reliability, convergent and discriminant validity table chart.

	CA	CR	AVE	BE	PIN	CM	EM	SC	PI	CC
BE	0.910	0.913	0.600	0.774						
PIN	0.919	0.920	0.537	0.492	0.733					
CM	0.880	0.881	0.649	0.658	0.598	0.806				
EM	0.772	0.782	0.546	0.476	0.521	0.692	0.739			
S.C.	0.900	0.901	0.694	0.630	0.562	0.591	0.675	0.833		
PI	0.853	0.856	0.664	0.645	0.432	0.633	0.505	0.643	0.815	
CC	0.767	0.767	0.524	0.695	0.581	0.763	0.606	0.706	0.654	0.724

Source: own elaboration.

Notes: CC = Co-creation; EM = Empowerment; CM = Community; SC = Self-concept; PIN = Personal involvement with UGI; BE = Brand equity; PI = Purchase intention. The square roots of the AVE are marked in italics.

[17] G. Christodoulides, C. Jevons, J. Bonhomme, Memo to Marketers: Quantitative Evidence for Change. How User-Generated Content Really Affects Brands, „Journal of Advertising Research", 2012, vol. 52, Issue 1, pages 53–64.

[18] B. Yoo, N. Donthu, S. Lee, An examination of selected marketing mix elements and brand equity, „Journal of the Academy of Marketing Science", 2000, vol. 28, Issue 2, pp. 195–211.

[19] J.F. Hair Jr., C.M. Ringle, M. Sarstedt, PLS-SEM: Indeed a Silver Bullet, „The Journal of Marketing Theory and Practice", 2011, vol. 19, Issue 2, p. 145.

[20] Ibidem, p. 145.

[21] Ibidem, p. 145.

[22] Fornell C., Larcker D., Evaluating structural equation models with unobservable variables and measurement error, „Journal of Marketing Research", 1981, vol. 18, Issue 1, pages 39–50.

Proceeding with the analysis, all latent variables were included in one single multi-factorial confirmatory factor analysis (CFA) model with robust maximum likelihood estimation (MLM). The robust chi-square test of model fit value was 787.08 with 494 degrees of freedom, the comparative fit index (CFI) value was 0.94, the Tucker-Lewis index (TLI) was 0.94, and the root mean square error of approximation (RMSEA) value was 0.04; 90% C.I. 0.03, 0.05 (probability RMSEA ≤ 0.05 of 0.94). All the values indicated a good fit of the measurement model[23].

To test the postulated hypothesis, all latent variables were included in one single multi-factorial structural equation model (SEM) also using MLM estimation method. The MLM chi-square test value was 889.75 with 502 degrees of freedom, the CFI value was 0.93, the TLI value was 0.92, and the RMSEA value was 0.05; 90% C.I. 0.04, 0.05 (probability RMSEA ≤ 0.05 of 0.41). These results demonstrate a good fit for the structural model.

Results and implications

Presented in Table 03 is a summary of statistics related to the estimations and test of the hypotheses. In reviewing the regression weights related to the relationship of the four UGC drivers and the consumers involvement with UGI it is noticeable that only the perception of community is statistically significant (β 0.34; *t*-value 2.33; *p*-value 0.01), confirming *H3.*Co-creation did not impact the consumers involvement with UGI (β 0.34; *t*-value 1.39; *p*-value 0.16), thus, not supporting *H1*. The factor Empowerment did not explain the consumers' involvement with UGI (β -0.05; *t*-value -0.25; *p*-value 0.79), which not supported *H2*. Finally, the factor Self-concept also did not explain the consumers involvement with UGI (β 0.05; *t*-value 0.42; *p*-value 0.67), not supporting *H4*.These results demonstrate that the consumers involvement with the creation of brand-related images is driven by their perception of community and social engagement within the SNS peers.

In parallel with the findings of Christodoulides and colleagues[24], the consumers' involvement with UGI had a positive impact on consumer-based brand equity (β 0.52; *t*-value 11.83; *p*-value < 0.001), which supported *H5*. Lastly, the consumers' involvement with UGI positively impacts their brand purchase intention (β 0.46; *t*-value 10.49; *p*-value < 0.001), leading to the confirmation of *H6*. These results confirm that the consumer involvement with user-generated images influences his or her perception of value of a brand and purchase behavior.

Table 03. Structural results.

HYPOTHESIS	ESTIMATE	*t*-value	*p*-value	ACCEPTANCE OR REJECTION
H1 Co-creation on involvement with UGI	0.34	1.39	0.16	Rejected
H2 Empowerment on involvement with UGI	-0.05	-0.25	0.79	Rejected
H3 Community on involvement with UGI	0.34	2.33	0.01	Accepted
H4 Self-concept on involvement with UGI	0.05	0.42	0.67	Rejected
H5 Involvement with UGI on brand equity	0.52	11.83	0.001	Accepted
H6 Involvement with UGI on purchase intention	0.46	10.49	0.001	Accepted

Source: own elaboration.

Notes: MLM $\chi^2_{(502)}$ = 889.75; CFI = 0.93; TLI 0.92; RMSEA = 0.05 (90% C.I. 0.04, 0.05).

Discussion of the findings

User-generated content has important practical implications for marketers, as it is one of the fastest-growing categories of media on Internet. Although user-generated images can be created for any purpose, a growing number of people create them about brands and products. This article provides greater perspective on understanding the effects of UGI on consumers' responses, contributing with new insights on literature. Our findings show that from the UGC drivers reported in literature (i.e., co-creation, empowerment, community, and self-concept) only the perception of community is influencing the consumers' involvement

[23] J.F. Hair Jr., W.C. Black, B.J. Babin, R.E. Anderson, *Multivariate data analysis* (Seventh Ed.), Pearson Education Limited, Harlow 2014, p.584.

[24] G. Christodoulides, C. Jevons, J. Bonhomme, Memo to Marketers: Quantitative Evidence for Change. How User-Generated Content Really Affects Brands, „Journal of Advertising Research", 2012, vol. 52, Issue 1, pp. 53–64.

with UGI in a SNS environment. This does not, however, mean that only the community dimension is driving the involvement of consumers with UGI, but that there are other hidden factors motivating consumers to create brand-related images. In pair with our results, we suggest marketers in their branding and social media communication agenda to implement techniques that foster brand communities[25]. Such techniques drive peer interactions and consequently motivate consumers to engage into brand-related UGI. For instance, Coca-Cola elicits UGI on SNS by constantly asking consumers to get involved into the creation process. As a result of this practice, consumers feel motivated to upload their content exposing the brand/product to a wide reach of users.

Similarly to the findings of Christodoulides and colleagues, our results also confirmed that the consumers' involvement with UGI impacts CBBE. Additionally, the involvement with UGI was found to be positive correlated with the consumers' brand purchase intention. These findings are of great relevance to practitioners, as they suggest the consumers' involvement with the process of brand communication strengthens their psychological bonds with the brands and lead to brand loyalty. This notion, however, is in parallel with the concept that consumers involved with creation of brand-related content are likely to be brand advocates, sharing their opinions and preferences with other consumers[26].

Future research on brand-related UGI is required both to confirm and to extend the insights we advance in this study. We suggest qualitative research to be undertaken with creators of UGI to identify their motivations for creating and sharing content on different social media channels. Three important questions emerge from this problem: (a) are the brand-related UGI drivers different from one social media channel to another? If so, what are those differences? (b) Are there common brand-related UGI drivers among social media channels? (c) Is it possible to generalize the drivers according to the quality of the brand-related UGIs (i.e., from amateurish – pictures exposing consumer with a brand; to semi-professional – illustrations that apply the styles of advertising)? These qualitative studies should be followed by quantitative verification.

Summary

Our study thereby contributes with three new perspectives on the existing body of knowledge of UGC research. First, our results show that the perception of community on a SNS is driving the consumers to get involved with the creation of brand-related images. Second, this study demonstrates that it is not possible to generalize findings of general UGC media to specific UGC types. Based on our findings, we urge scholars to distinguish UGC types and social media channels in research. The understanding of the motivations behind consumers to get involved into the creation of each type of brand-related media, as well as, their outcomes, are of great importance to practitioners when allocating resources on social media campaigns. Third, our findings confirm that users which actively get involved with the process of creation of brand-related images have their bonds with the brand strengthen, consequently increasing their perception of the brand's value and influencing their future purchase decisions.

Abstract

Researchers and brand managers have limited knowledge of the effects that different types of user-generated content (UGC) have on consumers' perception of brands and behavior. In this study we investigated 301 authors of a specific category of UGC, i.e., user-generated images (UGI) on a social networking site to confirm the relationships of four drivers reported in literature (co-creation, empowerment, community, and self-concept) to the consumers involvement with UGI, and consequently how it impacts consumer-based brand equity and purchase intention. When analyzing the data, we applied the structural equation modeling technique with *M*plus software. The results of the empirical study showed that from the four drivers, only the perception of community influenced the consumers' involvement with the creation of brand-related images. Subsequently, the consumers' involvement with UGI directly affected both brand equity and brand purchase intention.

[25] G. Shao, Understanding the appeal of user-generated media: a uses and gratification perspective, „Internet Research", 2009, vol. 19, Issue 1, pp. 7–25.

[26] T. Daugherty, M. Eastin, L. Bright, Exploring consumer motivations for creating user-generated content, „Journal of Interactive Advertising", 2008, vol. 8, Issue 2, pp.16–25.

Wpływ obrazów graficznych tworzonych przez użytkowników marki na postrzegany kapitał marki oraz skłonności o jej zakupu

Streszczenie

Badacze oraz menedżerowie marki mają ograniczoną wiedzę na temat wpływu różnych rodzajów treści dotyczących marek (user-generated content, UGC) na postrzeganie marek oraz zachowania konsumentów. Na potrzeby niniejszego badania pozyskano dane od 301 autorów szczególnego rodzaju UGC, a mianowicie obrazów graficznych tworzonych przez użytkowników marek (user-generated images, UGI), aby potwierdzić istnienie związków czterech opisanych w literaturze czynników motywujących do angażowania się w tworzenie UGI (tj. współtworzenia, skłonności do tworzenia, poczucia wspólnoty oraz samooceny) na zaangażowanie konsumentów wobec UGI i aby zbadać wpływ UGI na postrzegany przez konsumenta kapitał marki oraz skłonność do jej zakupu. W trakcie analizy danych zastosowano modelowanie strukturalne z wykorzystaniem programu MPlus. Wyniki pokazują, że spośród czterech czynników, tylko postrzeganie poczucia wspólnoty wpływa na zaangażowanie konsumentów w tworzenie UGI. W dalszej kolejności, zaangażowanie wobec UGI bezpośrednio wpływa zarówno na postrzeganych przez konsumenta kapitał marki, jak i skłonność do jej zakupu.

Literature

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[5]. Daugherty T., Eastin M., Bright L., Exploring consumer motivations for creating user-generated content, „Journal of Interactive Advertising", vol. 8, Issue 2, pages 16–25, 2008.
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Appendix

Table A1. List of items used

CONSTRUCTS		Std. loading
Perceived co-creation		
CC1: I enjoy creating online content about X		0.688
CC2: I want to be able to have online dialogue with X		0.729
CC3[e]: I find information from other consumers about X trustworthy		--
CC4: If I can customize X, then I feel more confident using X		0.759
Perceived empowerment		
EM1*: I expect to be able to create content about X		0.745
EM2[e]: Owning what I create online about X is important to me		--
EM3**: I create online content about X to show myself to the others		0.675
EM4**: It is good to know that other people see the content I created about X		0.784
Perceived community		
CM1: I feel a sense of community from posting my own content about X		0.820
CM2*: I communicate with other people online because of a common interest in X		0.798
CM3: My membership in a social network encourages me to produce content about X		0.814
CM4**: When I see what other people post in a social network about X encourages me to do the same		0.790
Perceived self-concept		
SC1: I use X to express myself online		0.836
SC2: My link with X says a lot about me		0.865
SC3:I make my point of view known by creating online content about X		0.784
SC4**: The content I create about X reflects my personality		0.847
Personal involvement with UGI		
To me (object to be judged is):		
PIN1: important	unimportant	0.666
PIN2***: boring	interesting	0.693
PIN3: relevant	irrelevant	0.685
PIN4: exciting	unexciting	0.776
PIN5***: means nothing	means a lot to me	0.617
PIN6: appealing	unappealing	0.827
PIN7: fascinating	mundane	0.807
PIN8***: worthless	valuable	0.630
PIN9: involving	uninvolving	0.755
PIN10**: not needed	needed	0.661
Brand equity		
BE1**: I believe that brand X increases the value of products		0.788
BE2**: I identify myself with brand X		0.799
BE3**: I trust brand X		0.664
BE4**: I prefer to buy brand X instead of unbranded products		0.794
BE5**: I think that brand X is a warranty of good quality		0.704
BE6**: I prefer to pay more but have brand X products		0.802
BE7**: Products that carry the brand X logo are more valuable than unbranded ones		0.727
Purchase intention		
PI1: I would buy this product/brand rather than any other brands available		0.852
PI2: I am willing to recommend that others buy this product/brand		0.808
PI3: I intend to purchase this product/brand in the future		0.783

Source: own elaboration.

Notes: * Reworded item; ** New item developed for the study; *** Item is reverse scored; [e] Item excluded during the EFA analysis