

The effect of perceived interactivity on marketing communication outcomes of corporate websites

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Keywords

Corporate websites, marketing communications, mediated moderation model, perceived interactivity

Abstract

Interactivity has been identified as a crucial element in the digital media; nevertheless, the complex relationship between interactivity and marketing communication outcomes has yielded inconsistent findings. The purpose of this research is to study the underlying mechanisms between interactivity and marketing communication outcomes of corporate websites.

This study develops a comprehensive conceptual model that empirically investigates the mediating role of the perceived interactivity in the impact of actual interactivity on marketing communication outcomes of corporate websites; moreover, it tests the moderating role of individual consumer differences on perceived interactivity.

To test the model the researcher employed a two-website treatment (highly interactive/low interactive) within-subject design, and a total of 450 participants from greater Cairo of different age groups and educational levels, specializations, and occupations were asked to browse these two websites. After browsing each website participants were requested to fill in an online questionnaire that measured their perceived interactivity, different attitudinal and behavioral measures towards the two websites. This research adopted a conclusive descriptive cross-sectional survey research design which allowed the collection of quantitative data through structured questionnaires. Data collected was analysed using structural equation modeling and multi-group analysis.

Findings indicated that perceived interactivity mediates the impact of actual interactivity on attitude towards the website, attitude towards the brand, purchase intention, and co-creation advertising; additionally, it reveals that age, educational level, years of using the Web, years of using the computer and academic major play significant moderating roles between actual and perceived interactivity. Thus, the empirical evidence supports the mediated moderation model. Moreover, this study provides useful insights for advertisers and marketing communication managers on how to effectively develop interactive strategies to reach different target audiences; furthermore, it provides evaluative criteria and guidelines on the updated interactive features that could be integrated into corporate websites.

1 Introduction

With the enormous expansion of the World Wide Web, marketers and advertisers are heavily using this platform to promote their products and are increasingly integrating their corporate websites into their marketing communications mix (Fahmy & Ghoneim, 2016, Song & Zinkhan, 2008; van Noort, Voorveld, & van Reijmersdal, 2012; Zollet, 2014).

Since the unique characteristic of the web that distinguishes it from other communication vehicles is inherited in its interactive nature (Coyle & Thorson, 2001; Liu & Shrum, 2009; McMillan & Hwang, 2002; Voorveld, Neijens, & Smit, 2011), the effective use of the corporate websites as marketing communication channels involves harnessing the power of its inherent interactivity (Fahmy & Ghoneim, 2016). Nevertheless, the potential of the web as a marketing communication medium has not been completely exploited; the justification for this was that advertisers and marketers did not completely apprehend the concept of interactivity and its effect on the marketing communication outcomes (Johnson, Bruner, & Kumar, 2006; Wu, 2006).

In order to contribute towards further understanding of interactivity and its impact on different marketing communication outcomes of corporate websites, this study will examine the relationship between the interactive features and the marketing communication outcomes of a corporate website by proposing a comprehensive model that empirically examines the mediating role of perceived interactivity in affecting actual interactivity's impact on different marketing communication outcomes. Furthermore, it will examine the role of the individual consumer differences between users in moderating the effect of actual interactivity on perceived interactivity.

2. Literature Review

2.1 Conceptualizing Interactivity

The researcher's extant review of the interactivity literature unfolds the dichotomy of the interactivity concept; where scholars have categorized them on the basis of the feature-based approach and the user-based approach (Lee, Lee, Kim, & Stout, 2004; Liu & Shrum, 2002; McMillan, 2000, 2002; Wu, 1999). Several communication scholars asserted that the first step in understanding the effects of interactivity is to explore the interactivity concept from both the feature-based and the user-based perspectives (McMillan, 2002). Thus, the researcher will first review the interactivity literature from the marketer's perspective and then the consumer's perspective.

2.1.1 Interactivity from the Marketer's Perspective

A marketer's perspective tends to view interactivity as a characteristic, feature, capability or property inherent in a medium, or as an interaction system that enables an interaction between two parties (Wu, 2006, p.88). Accordingly, actual interactivity could be defined in terms of the media features or its inherent capabilities that enables the creation of interactive content or/and messages, or potential interaction in general (Wu, 2005).

2.1.2 Interactivity from the Consumer's Perspective

Scholars who define interactivity from the consumer's perspective are likely to view it as "a psychological state experienced by a consumer during an interaction, message responsiveness perceived by a consumer, or an individual trait" (Wu, 2006, p.89). In that scheme, Lee et al. (2004) found that it is the user's subjective perception of the website that distinguishes a web site from another; it is not the mere presence of features.

Many interactivity scholars have stressed the importance of studying the relationship between the actual interactivity and the perceived interactivity of corporate web sites (Lee et al., 2004; Liu & Shrum, 2002; McMillan, 2002; Song & Zinkhan, 2008). However, little empirical research has examined this relationship (Song & Bucy, 2008; Song & Zinkhan, 2008; Wu, 2005).

2.2 Marketing Communication Outcomes

The extant review of the interactivity literature reveals that the interactivity's impact on the marketing communication outcomes has yielded inconclusive results. In that context, some communications scholars argued that in order to gain a clear understanding of the media effects of interactivity, the interrelationship between these two independent constructs must be recognized (Bucy & Tao, 2007; Wu, 2005); and their independent influence on the outcome measures should be examined (Bucy & Tao, 2007). Accordingly, the researchers will investigate the mediating role of perceived interactivity in the effect of actual interactivity on the attitude towards the website, attitude towards the brand, purchase intention, and co-creation advertising.

2.2.1 Attitude towards the website

The studies which examined the relationship between actual interactivity and the attitude towards the website yielded inconsistent findings (Boushra, 2008; Coyle & Thorson, 2001; Sundar 2000). On the other hand, the findings of the studies that examined the relationship between the perceived interactivity and the attitude towards the website found that perceived interactivity has a positive effect towards the attitude towards the website (Ahn, Hong, & Pedersen, 2014;; Hwang & McMillan, 2002; Jee & Lee, 2002; Song & Zinkhan, 2008; Wu, 2000). Accordingly, Wu (2005) asserted using an integrative approach while designing a study on interactivity. In that scheme, Song and Bucy (2008) empirically tested a mediation model. Thus, the following hypotheses are developed:

H1a: Perceived interactivity mediates the impact of the actual interactivity on the attitude towards the corporate website.

2.2.2 Attitude towards the Brand

Whereas several empirical studies indicated that the both feature-based interactivity and perception-based interactivity of a website had a significant positive influence on the attitude towards the brand (Boushra, 2008; Changal, 2005; Macias, 2003; Schlosser, 2003), however, Wu's (2000) empirical research that examined the effect of both actual interactivity and perceived interactivity on advertising effectiveness measures found that only perceived interactivity positively influenced the attitude towards the brand. Accordingly, the following hypothesis is developed:

H1b: Perceived interactivity mediates the impact of the actual interactivity on the attitude towards the brand.

2.2.3 Purchase intention

Several studies indicated that perceived interactivity had a significant direct positive influence on purchase intention (Chniti & Bouslama, 2015; Wu, Hu, & Wu, 2010) while other studies found that perceived interactivity indirectly influenced purchase intention via attitude towards the website (Changal, 2005; Karson & Fisher, 2005). Nevertheless, Bucy and Tao (2007) contended that perceived interactivity is a mediator of the media effects. Accordingly, the following hypothesis is developed:

H1c: Perceived interactivity mediates the impact of the actual interactivity on the purchase intention.

2.2.4 Co-creation Advertising

Prahalad and Ramaswamy (2000) noted that consumers are stepping out of their well-defined roles to become co-creators of value as well as being consumers of value. Extending this perspective to the new media such as websites; perceived interactivity plays a critical role in the co-creation value of consumers during usage (Kirk & Swain, 2013). The internet gives the consumers the opportunity to interact and co-create brand value rather than to passively consume these brands (Chernatony & Christodoulides, 2004) via user-generated brand content (Christodoulides, Jevons, & Bonhomme, 2012).

Although some researchers have attempted to study the perceived interactivity and the co-creation value of consumers during usage, however the relationship between the perceived interactivity of websites and co-creation advertising remains an under-researched topic. Accordingly, the following hypotheses are developed:

H1d: Perceived interactivity mediates the impact of actual interactivity on co-creation advertising.

2.3 Individual Consumer Differences as Moderators

Different researchers called for focusing on individual characteristics while examining the interactivity effects (Tremayne, 2005; Zeithaml, Parasuraman, & Malhotra, 2002). However, Song and Bucy (2008) argued that the role of individual consumer differences should not only be examined for how such differences that affect the marketing communication outcomes of interactive websites but for their moderating effect on the relationship between actual interactivity and perceived interactivity. Accordingly, this study will explore the moderating effect of individual consumer differences on the relationship between actual and perceived interactivity.

2.3.1 Internet Self-efficacy

Internet self-efficacy (ISE) is defined as a "belief in one's capabilities to organize and execute courses of internet actions required to produce given attainments" (Eastin and LaRose, 2006, p.1),

Song and Bucy (2008) explored the moderating influence of ISE on the relationship between actual and perceived interactivity, where they found that ISE significantly moderates the relationship between actual interactivity and perceived interactivity. They argued that experienced users enjoy surfing websites with highly interactive features, whereas novice users are likely to feel more comfortable while surfing websites with low interactivity. Accordingly, it can be hypothesized that:

H2a: The relationship between actual interactivity and perceived interactivity is moderated by internet self-efficacy.

Age

Guo, Dobson, & Petrina (2008) examined the effect of age on an individual's competency of Information and Communication Technology (ICT), and findings indicated that there is no significant statistical relationship between age effects and (ICT) competency. On the other hand, the findings of the study of (Kirk et al., 2012) showed that younger consumers were more satisfied with the interactive digital information products, while older consumers were more satisfied with the static digital information products. To reconcile these inconclusive findings, the following hypothesis is developed:

H2b: The relationship between actual interactivity and perceived interactivity is moderated by age.

Gender

Meng (2008) examined the impact of the gender gaps on the perceived importance of websites' interactivity and the results revealed that females exhibited more positive perceptions of the interactive features of the websites than males. However, McMahan, Hovland, & McMillan (2009) found that males change or customize content on the website while females don't change or customize content. Since the relationship between gender and interactive websites is far from conclusive, hence, the following hypothesis is developed:

H2c: The relationship between actual interactivity and perceived interactivity is moderated by gender.

Web Experience

Liu and Shrum (2009) who proposed a dual-process model of interactivity effects; while taking involvement into consideration found that highly interactive website elicited more positive website and brand attitudes for experienced internet users than the less interactive websites, while the low interactive websites generated more positive website and brand attitudes for inexperienced internet users than the highly interactive websites. On the other hand, McMahan et al. (2009) and Kirk et al. (2012) contended that savvy internet users (e.g. young consumers) have very high interactivity expectations of websites; consequently, they will negatively respond to a website that does not meet their anticipated level of interactivity. Since the findings seem to be confusing, accordingly the following hypothesis is developed:

H2d: The relationship between actual interactivity and perceived interactivity is moderated by Web experience.

Computer Experience, Years of Using Computer, Years of Using Web

Considering that McMillan (2000) has emphasized the importance of testing the influence of the years of using the web and the years of using the computer, and since most of the studies on web search have differentiated experienced users from novice users based on their web use, computer use, and searching experience on the search success (Aula & Nordhausen, 2006); accordingly the researcher will examine their moderating role, accordingly and the following hypotheses are developed:

H2e: The relationship between actual interactivity and perceived interactivity is moderated by computer experience.

H2f: The relationship between actual interactivity and perceived interactivity is moderated by years of using the Web.

H2g: The relationship between actual interactivity and perceived interactivity is moderated by years of using the computer.

Educational Level

Several studies investigated the effect of the educational levels of web users on the web users' attitudes and behaviors, where Susskind (2004) indicated that users with higher education levels exhibited lower desire for interpersonal interaction when shopping online. However, Boushra (2008) found that educational levels have no effect on the web users' attitudes and behaviors towards websites. Since findings are inconclusive, accordingly the following hypothesis is developed:

H4h: The relationship between actual interactivity and perceived interactivity is moderated by the educational level.

Academic Major

Previous studies showed significant differences in internet usage patterns and consumers' perceptions of digital products among respondents of different academic majors (Loan, 2011; Wu & Chen, 2012), where Loan (2011) who was comparing the internet usage frequency and making use of the internet among college students in various disciplines found that that computer science students made use of the internet the most, and they were the most frequent internet users followed by the Business students, while those from Social Sciences and Humanity reported the least among students with respect to making use of internet and usage frequency. The results of these studies suggest that the academic major might play a moderating role in influencing the relationship between the actual and perceived interactivity of websites. Hence, the following hypothesis is developed:

H2i: The relationship between actual interactivity and perceived interactivity is moderated by the educational level.

Accordingly, Figure 1 summarizes the proposed conceptual model of the study, and the hypotheses the researchers have derived.

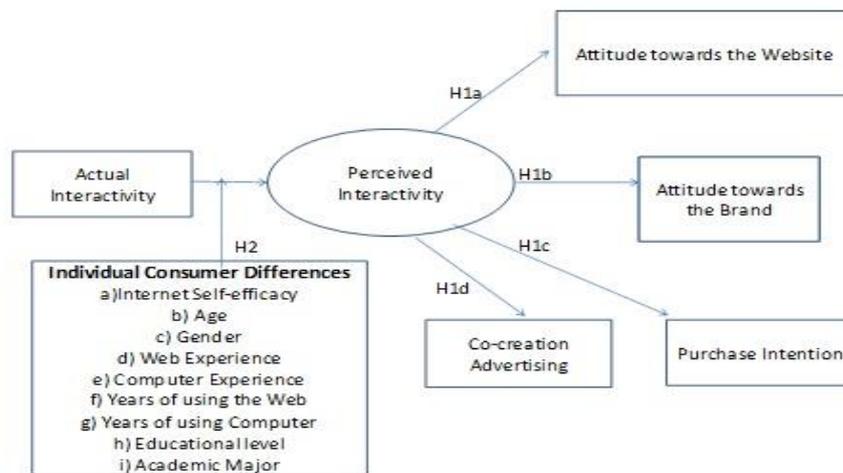


Figure 1: Proposed Conceptual Model

3. Research Methodology

3.1 Experimental Design, Sample and Stimulus Materials

To test the model, an experiment was conducted in natural settings inside greater Cairo. The data were obtained from a convenience sample of 419 respondents. To test the effect of individual consumer differences the sample comprised students and staff members from different faculties in several universities inside greater Cairo, as well as employees from different departments in many firms that operate inside greater Cairo.

The current research employed a two-website treatment (highly interactive/low interactive) within-subject experimental design to test the model. Therefore, a sample size of (838) responses was used in the analysis for the two websites. An expert panel was formed of digital media experts from different well-established advertising/media agencies in Cairo and Dubai, chose the two stimulus websites. The two automotive websites that were chosen were Kia Egypt website (Kia.com.eg) that represented the highly interactive website and Nissan Egypt website (Nissan.com.eg) that represented the low interactive website.

3.2 Data Collection Procedure and Research Setting

The online questionnaires were distributed via email, whereas participants filled them in real-life surfing environments with varying connectivity speeds. Participants were instructed first to browse the two automotive websites before filling in an online questionnaire that measured their online experience.

3.3 Statistical Procedure

3.3.1 Mediation Test Using Structural Equation Model

To test the mediation model (H1a, H1b, H1c, and H1d) a structural equation modeling using AMOS 23 was conducted.

Paths for Suggested Mediation Model	Stand. B	Total Effect	Direct Effect	Indirect Effect
Perceived Interactivity<---Actual	-.28**	-.28	-.28	--
Attitude towards Website<---Actual	-.07**	-.31	-.07	-.23
Attitude towards Website <---Perceived	.82**	.82	.82	--
Attitude towards Brand<---Actual	-.07**	-.28	-.07	-.210
Attitude towards Brand<---Perceived	.73**	.73	.73	--
Purchase Intention<---Actual Interactivity	-.04*	-.26	-.04	-.221
Purchase Intention<---Perceived Interactivity	.77**	.77	.77	--
Co-creation Advertising<---Actual	.009	-.19	.009	-.202
Co-creation Advertising<---Perceived	.71**	.71	.71	--
	Y1	Y2	Y3	Y4
Squared Multiple Correlations R^2	.823	.782	.727	.701

** Coefficient is significant at p-value < 0.01.

*Coefficient is significant at p-value < 0.05.

Table 1: Path Analysis Results for the Suggested Mediation Model

As shown in Table 1, the suggested mediated model demonstrated a good fit for the sample data; as P-value <.05 for all estimated standard coefficients, and all the coefficients of (R^2) were greater than 70% which is acceptable for the social science researches. The results show that there were significant direct effects of actual interactivity on perceived interactivity (P-Value < 0.01), attitude towards the website (P-Value < 0.01), attitude towards the brand (P-Value < 0.01), and purchase intention (P-Value < 0.05), but actual interactivity had no effect on co-creation advertising. However, perceived interactivity had significant direct effects on the attitude towards the website, attitude towards the brand, purchase intention, and, co-creation advertising.

Furthermore, it is easily observed that all the indirect effects of the actual interactivity on all marketing communication outcomes are strictly greater than its direct effects (in its absolute value), which implies that the actual interactivity affects these outcome variables through another variable; especially the co-creation advertising, due to the divergence between the indirect and direct effects.

According to such findings, perceived interactivity was found to partially mediate the relationship between the actual interactivity and the attitude towards the website, the attitude towards the brand, and the purchase intention, however, it fully mediates the relationship between the actual interactivity and the co-creation advertising; thus H1a, H1b, H1c, and H1d are supported.

3.3.2 Moderation Test

In this section the following hypotheses were tested using Multiple Group Analysis:

H2: The relationship between actual interactivity and perceived interactivity is moderated by the following individual consumer differences:

Internet Self-efficacy, b) Age, c) Gender, d) Web Experience, e) Computer Experience, f) Years of using the Web, g) Years of using Computer, e) Educational Level, i) Academic Major.

Paths		Stand. B	Pairwise Parameter Comparisons
PI←AI	Internet Self-efficacy	Low	.651**
		High	.71**
	Age	Low	.826**
		High	.327*
	Gender	Male	.706**
		Female	.604**
	Web Experience	Low	.628**
		High	.727**
	Computer Experience	Low	.659**
		High	.688**
	Level of Education	Low	1.509**
		High	.504**
	Years of using the Web	Low	.846**
		High	.248**
	Years of using the computer	Low	1.128**
		High	.65**
	Academic Major	Non-scientific	.413**
		Scientific	1.077**
			-.381
			3.126**
			.982
			-.609
			-.081
			5.92**
			1.89*
			2.08**
			-1.07**

**Significant at the 0.01 level.

*Significant at the 0.05 level.

Table 2: Pairwise Comparisons for the Individual Consumer differences that moderate the relationship between the Actual and Perceived Interactivity

Median splits were conducted for all moderating variables [except for the gender variable which is already binary and the academic major variable which was grouped into non-scientific (Business/Economics/Political Science, Mass Communication, Arts) and scientific (Engineering, Computer Science, Medicine/Dentistry/ Pharmacy)]. A multiple-group analysis was performed for the model by comparing the two sub-samples based on the respective moderating variables and testing for differences between the two groups was achieved by performing pairwise comparison across levels of variables using the critical ratios for differences performed via AMOS.

According to Table 2, the empirical results indicated a significant effect of the actual interactivity on the perceived interactivity for the two groups of all the individual consumer differences of the respondents. However, the strength of these relationships was influenced by the varying degrees of respondents' efficiency in internalizing the different levels of actual interactivity, which were tested by multiple-group analysis technique.

As per the Pairwise Parameter Comparisons, significant group differences were only found for the effect of age, educational level, years of using the Web, years of using the computer, and the academic major. Thus, the hypotheses H2b, H2f, H2g, H2h, and H2i were supported, while H2a, H2c, H2d, and H2e were not supported.

4. Findings/Results

Further to the mediated moderation model proposed by Bucy and Tao (2007) and later tested by Song and Bucy (2008); this study analyses interactivity by exploring the role of perceived interactivity in mediating the impact of actual interactivity on different key marketing communication outcomes, and by scrutinizing the moderating role of various key individual consumer differences.

The result of the mediating impact of perceived interactivity on the attitude towards the website of the current study was in line with the previous studies (Song & Bucy, 2008; Wu, 2005) where perceived interactivity was found to partially mediate the relationship between the actual interactivity and the attitude towards the website. Moreover, findings of this study indicated that perceived interactivity partially mediated the relationship between the actual interactivity and the attitude towards the brand,

and the purchase intention, nevertheless, it fully mediated the relationship between the actual interactivity and the co-creation advertising. Thus, the whole mediated model was supported.

The current study attempted to further investigate the explanatory power of the individual consumer differences in generating different levels of consumers' perceived interactivity for the same interactive interface, where the results indicated that age, educational level, years of using the Web, years of using the computer and academic major moderated the relationship between actual interactivity and perceived interactivity, while internet self-efficacy, gender, Web experience and computer experience did not moderate the relationship between actual interactivity and perceived interactivity.

In accordance with the findings of the current study, the mediated moderation model was supported. The model posits that individual consumer differences (e.g. age, educational level, years of using the Web, years of using the computer and academic major) moderate the influence of actual interactivity on perceived interactivity, and that perceived interactivity mediates the influence of actual interactivity on key marketing communication outcomes: purchase intention, attitude towards the brand, attitude towards the website, and co-creation advertising.

5. Discussions and Conclusions

We can conclude from the findings of the current study that the younger age-groups (16-25 and 26-35 years categories) who have been using the computer and Web for less number of years than their older counter parts have experienced a higher feeling of perceived interactivity for the highly interactive website (Kia) than the users of the older age groups (36-55 and over 55 years categories) who have been using the computer and Web for more number of years; likewise they experienced a lower sense of perceived interactivity for the low interactive website (Nissan) than their older counter parts. These findings are in line with the findings of the previous studies, where Kirk et al. (2012) found that the younger "digital native" consumers were more satisfied by the interactive digital products while the older "digital immigrants" consumers were more satisfied by the static digital products.

Also, students who have not graduated yet have experienced a higher feeling of perceived interactivity for the highly interactive website than the college or post graduate holders, likewise they have experienced a lower sense of perceived interactivity for the low interactive website than college or post graduate holders. These findings are in line with the findings of the study of Susskind (2004). Furthermore, respondents from scientific academic majors have experienced a higher feeling of perceived interactivity for the highly interactive website than the users of the non-scientific majors. These findings were in line with the findings of the study of Loan (2011).

Although findings of Song and Bucy (2008) indicated that the internet self-efficacy significantly moderates the relationship between actual and perceived interactivity; however interestingly, the current study found no moderating effect for the internet self-efficacy. Possible explanations for this might be due to the drastic improvement in the internet skills in the past few years, or it might be linked to the cultural differences between participants in the two studies and to how individuals tend to evaluate their own internet capabilities in these two different cultural contexts.

Thus, findings of this research provide useful insights for advertisers and marketing communication managers on how to effectively develop interactive strategies to reach different target audiences, for example findings suggest designing a corporate website with high challenging levels of actual interactivity when targeting the students or young consumers (16 - 35 years), users from scientific majors, and undergraduate students, while suggest designing a low interactive corporate website when targeting older age consumers (36 years and above), college degree holders and post graduate holders, and users from non-scientific academic majors.

Nevertheless, in the light of the ever-changing interactive technologies, this study provides evaluative criteria and guidelines on the updated interactive features that could be integrated into corporate websites, and hence facilitate the operationalization of the actual interactivity nowadays. Moreover, the researcher developed a new version of the co-creation scale specified for advertising; the so-called "co-creation advertising", where advertisers and scholarly research could use for measuring advertising purposes of co-creation.

Furthermore, this research makes a significant contribution to the emerging interactivity literature by proposing a comprehensive conceptual model that proposes a combination of the theoretical linkages

with new interactive marketing communication outcomes (e.g. co-creation advertising); thus the proposed model serves as a critical point for studying the underlying mechanisms between the actual interactivity and the marketing communication outcomes. Furthermore, this study pioneered in empirically testing the mediated moderation model in the Egyptian context, where the empirical evidence indicated that the model holds well across diverse population of Egyptian consumers.

6. Limitations and Direction for Future Research

The restricting effect that the limitations of this study, namely using a convenience sample and a one-product category as a stimulus material may seem to possess has turned out to positively benefit the research. Concerning the one-product category to which the stimulus was limited, experts reached a consensus that the nature of the selected product category enables the inclusion of numerous interactive elements (e.g. customization feature, social network features, a 360° interactive view of the interior/exterior of the vehicle, etc.).

However, further research may test the moderating role of other individual consumer differences than those tested in the current study (e.g. demographic variables like consumer's occupation and language proficiency, or motivational traits like need for cognition, computer frustration, or need for novelty and stimulation). Moreover, since the results of the effect of the moderating variable "internet self-efficacy" of the current study differed from the results of Song and Bucy's (2008) study; which could be attributed to the cultural differences between these two studies, thus it is recommended to test the proposed model in other cultural contexts. Additionally, further studies may want to explore the role of perceived interactivity in mediating the impact of actual interactivity on other marketing communication outcomes (e.g. brand awareness, brand recall, brand trust, brand image, brand loyalty, online patronage, intention to repurchase, website revisit). It is also recommended that future research would replicate this study with other product categories to test whether the model holds well across products of different nature. Nevertheless, future studies may test the mediated moderation model in other social media contexts, such as companies' Facebook business pages to test whether the same results will hold.

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