Explore the effects of augmentation reality communication on brand affect: the moderating role of self-determined motivation

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Abstract:

Although researchers have investigated the consumers' responses towards augmented reality from technology driven approach and consumer experience approach, little is known about the underlying motivational mechanisms related to brand outcomes. Our research proposed a research model which outlined the effects of AR communication, one side, on generating consumer benefits and the other hand on producing brand benefits through a motivational process, especially by clarifying the moderating role of self-determined motivation. The results from an empirical study will be expected that individual's behavior driven by autonomous motivations (identified regulation and intrinsic regulation) evokes more positive consumers benefits and brand related outcomes than individual's behavior driven by controlled motivations (external regulation and introjected regulation). Our findings will help managers to integrate individual factor in AR communication process to get the optimal results.

Keywords: augmented reality communication, self-determined motivation, brand affect

Track: Advertising & Marketing Communications

1. Introduction

Nowadays, based on the emergence of different technologies, consumers are more «informed, networked, empowered» (Prahalad & Ramaswamy, 2004) and they don't want to be "manipulated" and "influenced". Customers are then no longer satisfied to receive passively messages diffused by companies, « active consumers » try to control the contents. It is becoming challenging for companies to target clients by classic media. Enterprises need then new forms of communication in order to meet the three following challenges: capturing consumers' attention; enriching consumer experience by increasing benefits perceived by targets; making consumers feel autonomous and not forced in front of communication content.

In this context, augmented reality showed also its potential as a marketing tool to enrich consumer experience due to its power to "put the product in the hand of the users, giving them opportunity to test the product as they already own it" (Eyüboğlu, 2011). Recently, numerous brands have embarked on this adventure for meeting different objectives: creating a positive brand image; generating brand preference, modernizing brand image and improving visitors' engagement; promoting products. In recent years, e-commerce is expanding rapidly, especially in the context of actual pandemic crisis, more and more consumers turn to online shopping. AR help e-retailers to meet the challenge by providing consumers with almost direct consumption experience.

Against this background, two main scholars dominate existing AR marketing research: consumer experience approach and technology driven approach in the field of academic research. The first approach showed that the interactive technology strengthens the customer experience, creates experiential values perceived by consumers and has a greater impact on consumer attitude and behavior than traditional communication (Hilken et al., 2017; Huang & Liao, 2015; Rauschnabel et al., 2017, 2019; Scholz & Duffy, 2018; Scholz & Smith, 2016; van Esch et al., 2019). The technology driven approach tried to understand consumers' AR adoption driven by technological characteristics (Javornik, 2016a, 2016b; Lee et al., 2015; Pantano et al., 2017; Rese et al., 2017). Technology Acceptance Model (TAM) is the most used theory to explain consumer's acceptance of this novelty (Chung et al., 2015; Lee et al., 2015; Pantano et al., 2017; Rauschnabel et al., 2018; Rese et al., 2014, 2017). Less research interested in motivation driven approach (Rauschnabel et al., 2015) to understand the underlying mechanisms of consumer's acceptance. The main objective of existing research is to assess the AR adoption and its effectiveness and their drives. Although previous researches have demonstrated the benefits perceived by consumer through AR communication, but little

is known about the underlying motivational mechanism who regulates this perception, especially his impact on consumer-brand relationship. To close these research gaps, we aim to examine the impact of self-determined motivation (external regulation, introjected regulation, identified regulation and intrinsic regulation) on consumers' cognitive and affective responses to AR communication, furthermore their influence on brand related outcomes: brand affect.

Our research aims to answer the following problem: How augmented reality communication shapes consumer-brand relationship through motivational process?

This problem is articulated at several levels. The first part of this work aims to identify firstly the role of perceived augmentation as the unique AR characteristic that triggers consumer perceived benefits from both information processing approach and experiential view of point. Does the levels of perceived augmentation impact hedonic benefits and utilitarian benefits outcomes? Utilitarian and hedonic benefits are drivers of brand affect (A Chaudhuri & Holbrook, 2002). In the context of AR communication, the intensity of consumers benefits may be influenced by the levels of perceived augmentation, then we should figure out if brand related outcomes will be different. Do the different levels of perceived augmentation have an indirect impact on brand affect? According to self-determined theory, consumer's behavior are driven by different forms of motivation (Ryan & Deci, 2000a). Self-determined motivation is composed of four forms of motivation: external regulation, introjected regulation, identified regulation and intrinsic regulation depending on the extent to which a person feels autonomous or self-determined to regulate his behavior. Distinct forms of motivations generate different outcomes of experience performance (Deci & Ryan, 2000). What is the role of self-determined motivation in the relationship between AR communication and consumer benefits?

2. Literature review

Although more and more marketing practitioners used AR to increase the reach and brand awareness, to create brand experience, to engage consumers, etc, researchers talked about usually terms like AR marketing (Rauschnabel et al., 2019), AR experiential marketing (Bulearca & Tamarjan, 2010; Eyüboğlu, 2011), AR advertising (Sung & Cho, 2012), AR campaign (Scholz & Smith, 2016). But it still doesn't exist a clear definition for this concept in academic field. Rauschnabel et al. (2019) are the only researchers who have proposed a definition for AR marketing.

AR marketing is defined as " a strategic concept that integrates digital information or objects into the subject's perception of the physical world, often in combination with other

media, to expose, articulate, or demonstrate consumer benefits to achieve organizational goals" (Rauschnabel et al., 2019)..

This definition has emphasized the consumer's perception from both technological and beneficial perspectives, its dependence on other medias and his utility. But it ignored the role and the way that consumers intervene in this communication process. AR has revolutionized the communication process at two levels: media and message. This innovative medium changes the form of message by integrating the consumer in the process. We then define AR in the context of marketing as following:

Relying on other mediums, AR is a communication platform that integrates consumers in the process of co-creating messages through their perception to interact with virtual objects in a physical world, in order to generate consumer's benefits and achieve organizational goals.

For this reason, we use the term "AR communication" in our study.

3. Conceptual framework and hypothesis

Augmentation is considered to be the unique characteristic of AR technology (Javornik, 2016a, 2016b). Javronik (2016a) defined augmentation as the ability to overlay physical environments with virtual elements, which makes AR fundamentally differ from other interactive technologies. Different levels of augmentation have been identified. Low augmentation is linked to image recognition through which a smart device unlocks the content and augments it with additional informational, visual or video material. For example, some AR prints like wine labels used low level of augmentation. Medium level of augmentation concerns personalized content and gamification content, where interactivity between the user and the augmented content occurs on multiple levels. We take the example of Sephora Virtual Artist where consumer can try virtually cosmetics by this AR app. The highest level of augmentation includes interactivity among the user, augmented content and the space-real time simulation aligns digital content with the spatial surrounding and adapts commercial content in a functional or experiential way (Javornik, 2014). IKEA Place is a AR app based on a high level of augmentation where consumer aligns virtual furniture with real surrounding environment in real time. Poushned and Vasquez-Parraga (2018a) distinguished three dimensions of this concept: information quality, correspondence quality or mapping quality and user empowerment. The information quality refers to the extend "to which AR is able to generate useful, trustworthy, personalized, and reliable virtual content to the user", correspondence quality refers to the level "to which augmented reality is able to map the related virtual content onto the corresponding place in which it belongs" and user

empowerment refers to the degree "to which is able to augment users' capabilities in relation to tasks they intend to accomplish" (Poushneh, 2018b). Then, Rauschnabel et al. (2019) suggested that perceived augmentation quality "refers to the extent to which a user perceives the augmented content as realistic". This concept insisted on consumers' cognition rather than the technology perspective**.**

Previous research provided empirical evidence that using AR communication leads to perceived augmentation (Javornik, 2016b; Rauschnabel et al., 2019). AR is a technology which allows consumers to have an almost direct consumer experience. Holbrook and Hirshman (1982) posited that utilitarian dimension and hedonic dimension of consumer experience foster consumers' perception of utilitarian and hedonic benefits (Hirschman & Holbrook, 1982). Prior research on AR communication has demonstrated that branded AR apps can generate directly or indirectly both utilitarian benefits and hedonic benefits (Hilken et al., 2017; Javornik, 2016a; Poushneh & Vasquez-Parraga, 2017; Rauschnabel et al., 2017, 2018, 2019; Rese et al., 2014, 2017; Sung & Cho, 2012; Yim et al., 2017). Poushned et al. (2017) distinguished three different levels of augmented reality (high, middle and low) and found that AR had a positive and significant influence on consumer experience from both pragmatic quality and hedonic quality dimensions.

Consequently, we assume that consumers' perception of augmentation level can enrich consumer experience by generating consumers' hedonic experience and utilitarian benefits.

H1: More perceived augmentation is high, more utilitarian benefits will be perceived by consumers;

H2: More perceived augmentation is high, more hedonic benefits will be perceived by consumers;

Previous research has validated self-determined motivation concept with four dimensions: external regulation, introjected regulation, identified regulation and intrinsic regulation (Leung & Matanda, 2013; Lin et al., 2009; White, 2015). Extrinsically motivated actions can also become self-determined when individuals fully assimilate their regulation and internalize the reasons (Gilal et al., 2019). External regulation and introjected regulation are related to controlled self-determined motivation and identified regulation and intrinsic regulation are combined to autonomous self-determined motivation (Gilal et al., 2019; Ryan & Connell, 1989; Ryan & Deci, 2000a). The quality of experience and performance vary differently when one is behaving for autonomous or controlled motivations. Autonomous regulation of behavior was been proved to be associated with more quality performance,

experience and positive effects on human being than controlled regulation (Deci & Ryan, 2000; Leung & Matanda, 2013; Lin et al., 2009) .

SDT suggested that supported the hypothesis that competence and autonomy supported social-contextual environment will trigger motivated action, and furthermore, will facilitate motivation action to be self-determined rather than controlled (Deci et al., 1991). Prior studies proved that an autonomy and competent-supporting environment influence positively self-determined motivation (Grolnick & Ryan, 1989) and supports for competence should facilitate internalization only if autonomy is supported (Grolnick & Ryan, 1989; Vallerand et al., 1997). Self-determined motivation can be classified as high or low autonomous according to the degree individual perceives the "origin" of their behavior (Deci & Ryan, 1987; Ryan & Deci, 2000b). In the context of education, Vallerand (1991) found that student's perception of autonomy support of teachers were positively associated with autonomous forms of self-determined motivation (intrinsic motivation and identified regulation) and their perceptions of control were related to non-self-determined forms of motivation (amotivation and external regulation) (Deci et al., 1991; Vallerand et al., 1992). This argument is consistent with perceived augmentation theory which suggested that high level perceived augmentation is associated with perception of high level of autonomy and competence to manipulate and interact with AR content (Feng & Mueller, 2019; Hilken et al., 2017; Javornik, 2016b; Poushneh, 2018).

Furthermore, prior research showed evidence that higher level self-determined or autonomous motivation leads to behavior effectiveness and high service quality perception (Grolnick & Ryan, 1989; Leung & Matanda, 2013). Wunderlich explored consumer's motivation on intention to adopt transformative service and found that both internal perceived locus of causality and external perceived locus of causality are positively associated to perceived usefulness (Wunderlich et al., 2013). Malhotra (2008) investigated external, introjected and internal perceived locus of causality on consumer's information technology adoption and found that internal PLOC with high level of autonomy (identified regulation and intrinsic regulation) had a more significant effect on perceived usefulness (Malhotra et al., 2008). Perceived usefulness is a utilitarian benefit which could be viewed as other's approval or self-valued and personal meaningful activities. Otherwise, autonomous regulatory styles predict affective outcomes. Intrinsic motivation and identified regulation are positively correlated to enjoyment, positive emotions and satisfaction (Ryan & Connell, 1989). White (2015) suggested that intrinsic motivation has a stronger influence on positive emotions than controlled forms of motivation: external and introjected regulations (White, 2015).

Consequently, we assume that self-determined motivations moderate the relationship between perceived augmentation and utilitarian and affective outcomes.

H3: Perceived augmentation evokes more utilitarian benefits for consumers driven by autonomous self-determined motivation than consumers driven by controlled self-determined motivation.

H4: Perceived augmentation evokes more hedonic benefits for consumers driven by autonomous self-determined motivation than consumers driven by controlled self-determined motivation.

Brand affect is a positive emotional response after the use of a brand (Arjun Chaudhuri & Holbrook, 2001). Branded AR content enables the encounter between consumers and brand through an almost direct consumption experience which generates utilitarian and hedonic benefits for consumers (Hirschman & Holbrook, 1982; Rauschnabel et al., 2018, 2019). A higher level of hedonic and utilitarian values result in positive emotional affective response, more precisely brand affect (Arjun Chaudhuri & Holbrook, 2001) which is the driver of both attitudinal and purchase loyalty (Matzler et al., 2006). We then expect that consumer's perceived hedonic and utilitarian benefits generated from AR communication impact positively brand affect.

H5: utilitarian benefits and hedonic benefits interaction effect impact brand trust.

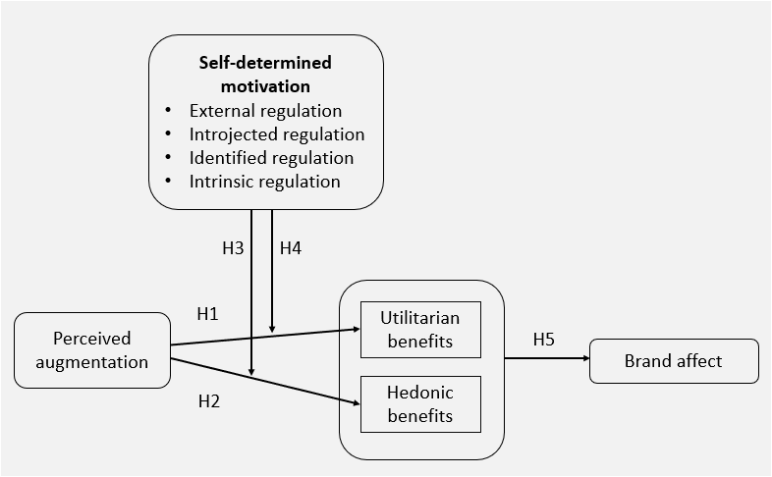

Figure 1: Research Model

4. Methodology and contributions

A quantitative research based on Ikea place application will be engaged.

Our research proposed a research model which outlined the effects of AR communication, one side, on generating consumer benefits and the other hand on producing brand benefits through a motivational process. The second expected theoretical contribution

based on the clarification of the concept AR communication. Although AR is widely used in the context of marketing, but the concept is always blurry.

From a managerial point a view, this work aims to provide more precise answers for managers to understand how AR communication can shape consumer-brand relationship. Less research has interested in brand related outcomes generated by AR. This study showed to managers the importance and how integrate individual variable in AR communication process to get the optimal results.

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