PURCHASE INTENTION ON SOCIAL MEDIA FOR THE HEALTHCARE SERVICE SECTOR: Analysis of Mechanisms and Conditionings

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This study aims to examine the influence of social media marketing, generated by healthcare professionals, on consumer purchase intention through the mediation of value co-creation, and the parallel mediation of engagement and brand equity, moderated by frequency of consumption. The results of this study confirm that: (1) value co-creation and engagement have a mediating effect on the relationship between social media marketing and purchase intention; (2) value co-creation and brand equity have a mediating effect on the relationship between social media marketing and purchase intention; (3) consumption frequency has a moderating effect on the relationship between value co-creation and brand equity and on the relationship between value co-creation and engagement. The empirical evidence of the antecedent relationship between value co-creation and purchase intention mediated by the constructs of brand equity and engagement presents relevant original contributions.

1. Introduction

The service sector has a significant impact on the global economy. Within service classifications, healthcare services, including those provided by doctors and dentists (Reid, 2008) tend to be highly customized, complex, and delivered by qualified professionals, involving tangible actions on individuals in a series of appointments (Lovelock, 1983). In parallel with the relevance of services to the global economy, one must consider the significant increase in the consumption of social media around the world. In this context, social media has increasingly been used as a channel for healthcare promotion, patient recruitment, and marketing for healthcare service providers, among other purposes (Farsi, Martinez-Menchaca, Ahmed, and Farsi, 2022).

The concept of value co-creation emerges from interactions between healthcare providers and patients, enhancing the consumer experience (Prahalad & Ramaswamy, 2004). In this context, social media serves as a facilitator for active patient participation, contributing to the healthcare branding process. Regarding the study of brands, Aaker (1992) brings the concept of Brand Equity (BE), which is defined as the value that a brand adds to a product or service. Even though the influence of value co-creation on brand equity is discussed in the literature (Merz, He, and Vargo, 2009), empirical studies that have analyzed the effects of value co-creation on brand equity are scarce (Jeremías & Peña, 2021; Sadyk & Islam, 2022).

While social media is recognized as an effective tool for engaging consumers in brand value co-creation, studies connecting social media marketing strategies, value co-creation, and consumer brand engagement remain scarce and fragmented (Cheung, Pires, Rosenberger, Leung, and Ting, 2021; Sohaib & Han, 2023). Although Brand Equity (BE) and consumer brand engagement have been explored as drivers of behavioral intentions, with evidence supporting their antecedent role (Majeed *et al*., 2021; Lee & Park, 2022), research examining their simultaneous influence on purchase intention is still limited.

Furthermore, while value co-creation is often seen as a result of engagement (Nadeem, Tan, Tajvidi, and Hajli, 2021; France, Grace, Merrilees, and Miller, 2018), its role as a precursor to engagement, particularly in healthcare services, needs more investigation (Cheung *et al*., 2021). Despite some studies indicating the direct impact of value co-creation on brand equity and engagement (Mansilla, Contrí, and Cantallops, 2019; Jeremías & Peña, 2021; Cheung *et al*., 2021), its function as a mechanism in this process remains underexplored. In the specific scope of healthcare services, to the best of the authors´ knowledge, there are no studies that evaluate the role of value co-creation, brand equity and engagement as relationship mechanisms

between marketing on social networks and purchase intention. Additionally, the relationships between these three constructs are subject to conditioning processes, then, it is considered relevant to understand the potential moderating effect of the consumer's experience with the health professional on the relationship between the constructs.

Therefore, this study aims to examine the influence of social media marketing, generated by healthcare professionals, on consumer purchase intention, through i) the mediation of value co-creation, and the parallel mediation of engagement and brand equity; and ii) conditionings represented by the moderation effects of frequency of consumption. Theoretically, this study addresses a significant gap in the literature by exploring the roles of value co-creation, brand equity, and engagement in healthcare marketing.

2. Hypotheses Development

2.1 The mediating role of value co-creation, brand equity and engagement

The emergence of Web 2.0 allowed interaction between companies and their customers, which intensified the value co-creation process (Bell & Loane, 2010). It is theoretically established that value co-creation with the brand positively affects consumer brand engagement (Cheung *et al.*, 2021). Value co-creation activities initiated by the company stimulate feedback and ideas from consumers about the products (Andreu, Sanchez, and Mele, 2010). When consumers are active in connecting with the brand in the idea-generation process, they are deeply immersed in the brand and have a strong sense of dedication, which drives brand engagement (Carlson, Rahman, Voola, and De Vries, 2018).

Through interactions between the company and customers, engagement generates behavioral manifestations of these customers (Brodie, Ilic, Juric, and Hollebeek, 2013). Consumer engagement behavior contributes directly and indirectly to the company. Indirect contributions concern customer references and recommendations (Kumar *et al.*, 2010). Direct contributions refer to customer purchases, as they directly contribute to the brand's value (Kumar *et al.*, 2010).

Aaker and Keller's framework suggests that customers' perceptions of a brand can be formed and influenced by the contact they have with that brand (Aaker, 1992; Keller, 1993). As a result, customers are considered active creators of Brand Equity through their interactions with suppliers and other participants (Merz *et al.*, 2009). Siano, Vollero, and Bertolini (2022), in their systematic review, identified a paradigm shift in the branding literature, moving from brand control to brand co-creation. Thus, the literature emphasizes the need for new branding

studies based on co-creation mechanisms between the company and stakeholders (Siano *et al.*, 2022). Interactions between customers, suppliers, and other participants are embraced by the concept of value co-creation (Prahalad & Ramaswamy, 2004). Thus, customer value creation plays an important role in brand formation (Brodie, Glynn, and Little, 2006) and is therefore likely to influence Brand Equity assessments (Merz *et al.*, 2009).

The main objective of social media marketing is to make consumers intend to buy or use the marketed product (Hutter, Hautz, Dennhardt, and Fuller, 2013). Social media marketing affects brand equity and therefore affects consumer behaviors such as purchase intention (Seo & Park, 2018). Purchase intention is a variable that is considered a consequence of brand equity dimensions (Aaker, 1992; Keller, 1993). Thus, it is important to develop empirical studies that evaluate the mediating effect of brand equity on purchase intention (Majeed *et al.*, 2021). Thus, consumer brand engagement and brand equity work together, influencing the consumer's purchase intention. Accordingly, the first hypothesis is established: **H1**. *Social Media Marketing has a positive and significant impact on purchase intention, through the multiple mediations' role of value co-creation, engagement, and brand equity.*

Value co-creation initiates a sequential process that mutually influences brand engagement and brand equity, leading to the following division of H1: **H1A**. *Social Media Marketing has a positive and significant impact on purchase intention, through the mediating role of value co-creation and engagement;* **H1B**. *Social Media Marketing has a positive and significant impact on purchase intention, through the mediating role of value co-creation and brand equity.*

2.2 The moderating role of purchase frequency

It is theoretically established that purchase history is likely to affect post-purchase evaluations, as well as intentions and future purchases (Soderlund, 2002). Particularly noteworthy is the study of Mansilla *et al.* (2019), who analyzed the effects of value co-creation perception on Brand Equity and consumer participation, moderated by consumer experience. The authors found that the perception of value co-creation varies according to the consumer's experience, and can be considered more important for consumers who have never consumed, that is, who have less brand awareness. It is also highlighted that the authors divided the sample into two groups, first-time consumers and experienced consumers, to test the aforementioned moderation. In seeking a more detailed understanding, this paper tests the moderating effect of consumption frequency at three different levels: one standard deviation above the mean, on the

mean, and one standard deviation below the mean. Thus: **H2**. *Frequency moderates the relationship between value co-creation and engagement, and the higher the frequency, the lower the impact on the relationship;* **H3**. *Frequency moderates the relationship between value co-creation and brand equity, and the higher the frequency, the lower the impact on the relationship.*

3. Research Methodology

To establish the data collection instrument, the following constructs were considered: (I) Social Media Marketing (SMM) – being a second-order construct – formed by the first-order dimensions interactivity (INT), informativeness (INF), personalization (PER), trendiness (TRE) and word of mouth (WOM) (Yadav & Rahman, 2017); (II) Value Co-Creation (VCC) (Nysveen & Pedersen, 2015); (III) Consumer Brand Engagement (CBE), composed of three distinct dimensions: Cognitive Processing (CP), Affection (AFE) and Activation (ACT) (Hollebeek, Glynn, and Brodie, 2014); (IV) Brand Equity (BE), composed of the dimensions: Brand Loyalty (BL), Perceived Quality (PQ), Brand Awareness with Brand Associations (BA) (Kim & Hyun, 2011) and (V) Purchase Intention (PI) (Jahn & Kunz, 2012).

Data were collected through a self-administered online survey, using the LimeSurvey system. For data collection, two approaches were used. In the first, healthcare professionals shared the questionnaire with their audiences on Instagram. In the second, the questionnaire was disseminated via email to students, professors, and public servants from several Brazilian Federal Universities. At the beginning of the questionnaire, respondents went through screening questions to check whether they use any social media application, and if they digitally follow a healthcare professional. If the answer was negative, the questionnaire ended. Then, the interviewees were asked to indicate a profile about which they would answer the research questions, to guide the answers to the questionnaire. To reduce the effects of response bias, each section had its items randomized. After the data collection stage, the structural equation modeling technique was applied. The statistical software SmartPLS 4 was used to validate the scale measures (measurement model) and to analyze the mediation and moderation relationships.

4. Results

The profile of the sample that composed the study revealed that, of the total of 376 respondents, the majority were female (80.32%), with a high level of education, having a

graduate degree at a specialization level, master´s or doctorate (57.72%). In terms of age, 64.89% of respondents were over 30 years old. This outcome aligns with our expectations, as younger individuals typically are not the primary demographic target for health services.

Next, all indicators were retained as the quality of the scales used was attested to in terms of reliability parameters (i.e., Cronbach's alpha and composite reliability varying between 0.629 and 0.902), convergent validity (i.e., AVE values ranging from 0.526 and 0.802) and discriminant validity (All HTMT values below the upper threshold of 0.90) established in the literature (Hair, Hult, Ringle, and Sarstedt, 2017). In addition, VIF values were all below 5, which indicates the lack of collinearity issues.

To analyze the structural model, a bootstrapping of 10,000 samples were used, with a confidence interval of 95%. Regarding the structural model, as well as the predictive relevance, the relationships between the constructs and the strength and quality of the structural model were evaluated. The analysis was performed using the adjusted coefficient of determination (R^2), the predictive relevance of the model (Q^2), and the effect size (f^2) (Hair *et al*., 2017).

The results show an R^2 of 0.549 for the endogenous variable purchase intention. Such value can be positioned from moderate to strong (Hair, Ringle, and Sarstedt, 2011). The Q^2 values, in turn, must be greater than zero, which signals that the exogenous variable has predictive relevance for the endogenous variable (Hair *et al*., 2017). Values greater than zero were obtained for all variables. The variables social media marketing and value co-creation have strong effect sizes, brand equity from moderate to strong, and, finally, engagement has a weak effect size (Cohen, 1992).

For the analysis of the significance of the paths, the p values and the confidence interval were observed. Mediation tests were conducted based on the guidelines from Hair *et al*. (2017) through two paths: SMM → VCC → CBE → PI, and SMM → VCC → BE → PI. The results of each path are shown in Table 1. The first path explored the mediation effect of social media marketing on purchase intention going through value co-creation and consumer brand engagement. First, the total indirect effect (SMM → VCC → CBE → PI) was examined and found to be significant (β = 0.078; 95% CI: 0.021; 0.141). Consistently, the second mediation test was developed to explore the mediation effect of value co-creation and brand equity on the relationship between social media marketing and purchase intention. The findings show that value co-creation and brand equity mediate the relationship between social media marketing and purchase intention (β = 0.250; 95% CI: 0.183; 0.322). On the other hand, the direct effect (SMM → PI) was significant (β = 0.327; 95% CI: 0.265; 0.393). This leads to the conclusion

that there is partial mediation within the model. The total effect of the multiple mediations accounts for 0.328, which is slightly higher when compared to the direct effect.

Table 1 - Path Coefficients for the Mediation Test

Paths	β	Mean	SD	p-value	2.50%	97.50%	Hypotheses
SMM → PI	0.327	0.329	0.033	0.000	0.265	0.393	-
Total Indirect Effect	0.328	-	-	-	-	-	H1: Supported
SMM → VCC → CBE → PI	0.078	0.078	0.031	0.000	0.021	0.141	H1A: Supported
SMM → VCC → BE → PI	0.250	0.251	0.035	0.000	0.183	0.322	H2B: Supported

As a last step, the moderating effects of frequency were tested. For this test, the PROCESS tool, available in Smartpls 4 was used. This tool allowed the moderation test at three different levels: upper level, medium level, and lower level. The results demonstrates that the moderating effect was significant at all three levels, varying from 0.713 to 0.651 for engagement, and from 0.562 to 0.378 for brand equity. Additionally, the impact of value co-creation on engagement and brand equity diminishes with increasing consumption frequency.

5. Conclusion

There is a partial mediation within the proposed model. Social Media Marketing is sufficient to generate purchase intention, however, value co-creation, engagement, and brand equity act as important mechanisms to boost the relationship. The moderating effects of frequency were also confirmed, which indicates that the conceptual framework proposed is more important to boost the purchase intention of consumers who have not yet consumed the services.

The findings of this research can be explored for a better understanding of the phenomenon in the object of study. For future research, it is proposed to explore the model's applicability to both high and low-convenience services, considering the moderating role of convenience in the relationship between engagement and purchase intention.

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