Product Presentation, Promotions and its Impact on the Use of the App and on Purchase Intention of Food Through SmartPhones

The Food Sector within the Hospitality industry has adapted to new technologies services. Specifically, restaurants have migrated their menu to Apps Companies and met a new competition dynamic marked by a variety of product offerings and promotions. Thus, the main purpose of this research was to investigate the impact of the product presentation and promotions on the use of the App and the customer´s purchase intention. A survey was conducted with 217 individuals, smartphone owners that use Apps to make purchasing. The data were analyzed using the PLS technique on Smart-Pls 3.0. The results showed a positive relationship between product presentation and promotions on the use of the App, as well, positive effects among product presentation, promotions, use of the App on customer´s purchase intention.

Keywords: hospitality, food and beverage, Apps

Introduction

The hospitality industry is big and diverse. This trade area is composed of diverse business models, for example, hotels, spas, bars, and restaurants. In general, these business models have faced new challenges given the emergence of innovative technologies that become possible to improve their competitiveness. Hotels have used virtual tours, digital check-in, and robots to welcome guests (Tourism review, 2019). Other businesses as bars and restaurants have implemented digital point-of-sale hardware and software to customers ordering food and sales control (BinWise Consultancy, 2020).

Business food within the hospitality industry has adapted to these digital tools. More specifically, restaurants have also migrated their menus to Mobile Devices through Apps (abbreviation for Applications) available for Smartphones. Specifically, an App is a piece of software developed for a specific purpose that can be downloaded onto a smartphone or other mobile device. A smartphone is a mobile phone with an operating system, for example, android or Apple iOS. This small software has changed the dynamic that companies use to promote and sell their products to customers.

Moreover, by 2021, the number of smartphone users is expected to rise to 3.76 billion, i.e., nearly half of the world population at the time. The average user in Brazil spends nearly five hours a day on their device. The other countries in the top five are China, USA, Italy, and Spain. The average time for people on their phones in the US is four hours a day (including tablets). As these devices become more integrated into our personal and digital lives, this increase in time is a depiction of both culture and technology shift (Leftronic, 2020)

According to industry research, 63 percent of Millennials claim to shop on their phones every day (Alliance Data, 2020). Other industry study shows that over 230 million U.S consumers own smartphones and 80% of shoppers used a mobile phone inside of a psychical store to either look up product reviews, compare prices or find alternative store locations (OuterBox, 2020). In a nutshell, the making decision is much more in the consumer´s hand than ever.

A lot of Apps have been developed to integrate food business and customers, for instance, Uber Eats (American Company), Rappi (Colombian Company), and Ifood (Brazilian Company). These Apps facilitate transactions between restaurants and customers and are potential channels for marketing strategies.

Previous researchers have investigated the use of Apps by consumers on predicting Mobile App usage for purchasing and information sharing (Taylor & Levin, 2014), the intention to use mobile shopping application and its influence on price-sensitive (Natarajan, Balasubramanian, & Kasilingam, 2017), and mobile App usage and Its implications for service management (Schmitz, Bartsch, & Meyer, 2016) and more recently on the effect of presentation, product availability and ease upon transaction reliability for online food (Verma, 2020).

However, a study to understand the impact of the product presentation and promotions on the use of the App and purchase intention in the context of restaurants is still lacking. Thus, this paper addresses the impact of product presentation and promotions on the use of the App and customer´s purchase intention based on the S-O-R model (Merahbian and Russel, 1974) and Signaling Theory (Spencer, 2002).

Based on these theories, we posit that product presentation and promotions act as stimuli, the use of the App as an organism, and purchase intention as a response. At the same time, the product´s pictures (product presentation) and the information available (promotions) act as a sign to customers infer their decisions. Therefore, this study joined two theories to investigate

the influence of these stimuli upon the restaurant´s customers, as well as presenting a lens to academicians investigate the use of Apps toward the hospitality field.

While the use of product presentation (pictures of products) and promotions (discouns) is an ordinary practice among companies that operate toward Apps, a scientific approach to understanding such phenomenon is important to advance in literature and for the robustness of such managerial practices. To shed light on this topic, the **main purpose** of this paper was to identify the impact of product presentation and promotions on the use of the App as well on the customer purchase intention.

The results showed that product presentation has a positive effect on the use of the app and purchase intention. Promotions also showed a positive effect on the use of the app and the customer's purchase intention. Finally, product presentation, promotions, and use of the App had a positive effect on the endogenous variable purchase intention.

2. Theoretical Background

This study joins the Signaling Theory (Spencer, 2002) and S-O-R Model (Mehrabian and Russel, 1974) to investigate the influence of product presentation (information clues) and promotions (stimulus) on the use of the App (organism) and purchase intention (response). First, the Signaling theory posits that individuals use information as clues to infer their expectations about a product and to make their purchase decisions. To this study, product presentation is considered the set of information about the product, product availability, and the quality of images used to present the products that are available on the App. The S-O-R model is applied to explain the use of stimulus (promotions) on the use of the App (organism) and its response (purchase intention). Conceptual model Figure 1.

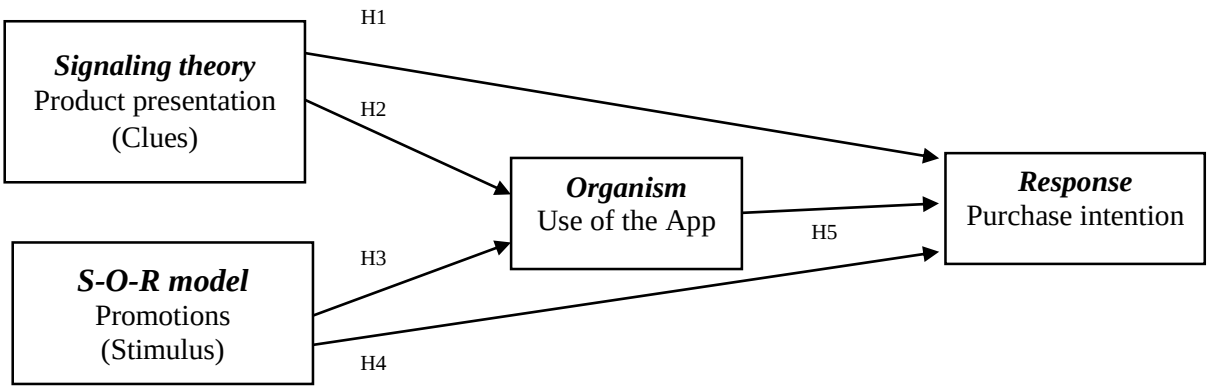


Figure 1. Conceptual Model

The conceptual model shows the application of the theories for each construct and its dynamic relationship. Following, the empirical studies and their findings support the hypothesis proposed for testing.

2.1 Product Presentation its influence on the Use of the App and Purchase Intention

The presentation of products in online contexts, Websites / APPs is a powerful tool for its promotion and of fundamental importance to stimulate consumer interest (Orus, Gurrea, & Flavían, 2017). Online experience and mobile experience both positively related to the

possession of shopping apps and also browsing behavior for non-shopping apps helps understand the possession of shopping apps as it reflects user preferences for acquiring more apps (Kim, Kim, Choi, & Trivedi, 2017). According to Daft and Lengel (1986) and Martin et al., (2019) the presentation of the product through advertising to the consumer assists in the evaluation of its attributes as well as its quality. Çelik (2011) identified that product presentation, even in a virtual way, stimulates consumer information processing, increases virtual interactivity, and assists in its evaluations, as well as in its interactivity (Xu, Chen, & Santhanam, et al., 2015). In this way, the following hypotheses are presented:

H1. Product presentation positively influences the use of the APPs
H2. Products presentation positively influences on purchase intention

2.2 Promotions and its influence on the Use of the App and Purchase Intention

The use of promotion strategies by FoodDelivery business through a mobile application (App from this point on) is widely used. Promotions are incentives that companies offer to consumers to leverage sales; the most common being, price discount, or more usually, discount coupons on the purchase price. Te'eni-Harari (2018) argues that premiums can be used as an incentive among the young population. Through promotions, food delivery companies encourage the use of their App as well as the purchase of the products they offer. The use of promotions as a strategy by such companies, for instance, in the restaurant business, leads to the fast dissemination of information about the promotion, further stimulates the use of the App and customer loyalty, and also the purchase intention of products they offer (Chen & Yao, 2018; Kapoor & Vij, 2018; Coursaris & Sung, 2012). To test these previous findings in a linear model, the following hypotheses are presented in which:

H3: promotion has a positive relationship with the use of the App;
H4: promotion has a positive relationship with purchase intention

2.2 Use of the Apps and Purchase Intention

Using Apps for food purchasing is a massive behavior and is an important part of the Omnichannel retailing. According to Taylor and Levin (2014), the level of interest in a retail App is positively related to the consumer´s intention to engage in both purchasing (Agrebi & Jallais, 2015) and information-sharing activities. In other words, using Apps to share information is an important element to increase customer´s purchase intention. Another study investigated the intention to use mobile shopping and its influence on price sensitivity. The results pointed out that personal innovativeness and perceived risk influence the intention to use shopping Apps. It suggests that high innovative users and with higher intention to use the Apps are less sensitive to price (Natarajan, 2017). Besides such studies, Schmitz, Bartsch, and Meyer (2016) highlighted that information fit to the task, convenience value, and speed of transaction affects the perceived usefulness of mobile apps. Moreover, ease of understanding, intuitive handling, and reliability were found to drive perceived ease of use. outcomes of app usage. These studies show that the use of the App enhances the propensity of a customer to purchase while using the App. Thus, the next hypothesis is presented:

H_5. The use of the App positively influences purchase intention

This research intends to test a model about the use of the App and Purchase Intention based on Product Presentation and Promotions. The research model summarizes the hypothesis of this study. Figure 2.

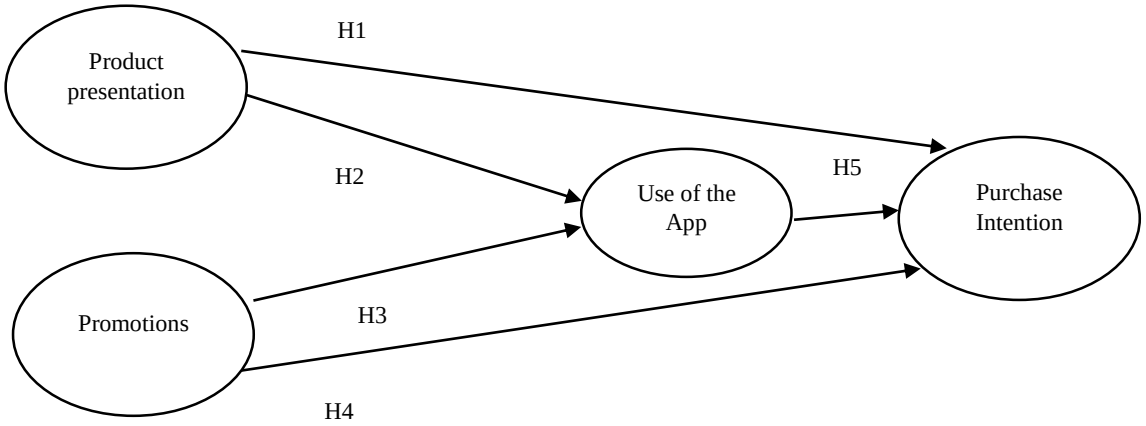


Figure: 2 Research Model

3. Method

In total 217 respondents participated in this research. Table 1 presents the demographic distribution.

Variable	Category	Frequency	%
Gender	Male	113	52.1
	Female	104	47.9
Occupation	Student	24	11.06
	Public service	17	7.83
	Private company	128	58.98
	Household	16	7.37
	Retired	11	5.11
	Entrepreneur	12	5.51
	Not-employed	9	4.14
Civil Status	Single	163	75.12
	Married	54	24.88

Table 1. Demographics

The survey was based on a self-administrated questionnaire and data collection followed the quantitative approach. To data gathering, a research link was posted in a Social Network for two weeks during Jun 2020. The individuals were invited to participate in research about the Use of Apps for food delivery. The questionnaire covered the following constructs: product presentation: pp1, pp2, pp3, pp4 (Verma, 2020), Promotions: prom1, prom2, prom3, prom4, prom5 (Honeaa & Dahlb, 2005), Use of the App: uapp1, uapp2, uapp3, uapp4, uapp5 (Verma,

2020) and Purchase Intention: purcint1, purcint2, purcint3, purcint4 (Pan, Zhang & Gao, 2010). Each observable variable was measured on a Likert scale of five points (1 strongly disagree to 5 strongly agree).

4. Results

First, we proceeded with validity and reliability analysis. There are reliability measures (two) which have been analyzed in this research, one measure is composite reliability and the other one is Cronbach's alpha. According to the PLS-SME method, the value of Cronbach's alpha should be greater than 0.70. T**able 1** shows that all the constructs have Cronbach's alpha values, greater than 0.70 and this value shows the good reliability of the constructs. The value of composite reliability must be greater than 0.70 and table 1 shows that all the constructs have composite reliability values more than its limit 0.70 exceeding from 0.80. The value of convergent validity is represented by the value of the average variance extracted (AVE). According to (Bagozzi, Yi, & Phillips, 1991), the value of the (AVE) must > or = to 0.5. The above results show that the data is collected by a reliable and valid source.

Table 1: Reliability of Variables

Constructs	Cronbach´s Alpha	rho_A	Composite reliability	AVE
Product Presentation	0.834	0.845	0.889	0.668
Promotions	0.829	0.841	0.881	0.600
Purchase Intention	0.749	0.757	0.839	0.566
Use of the App	0.843	0.853	0.888	0.613

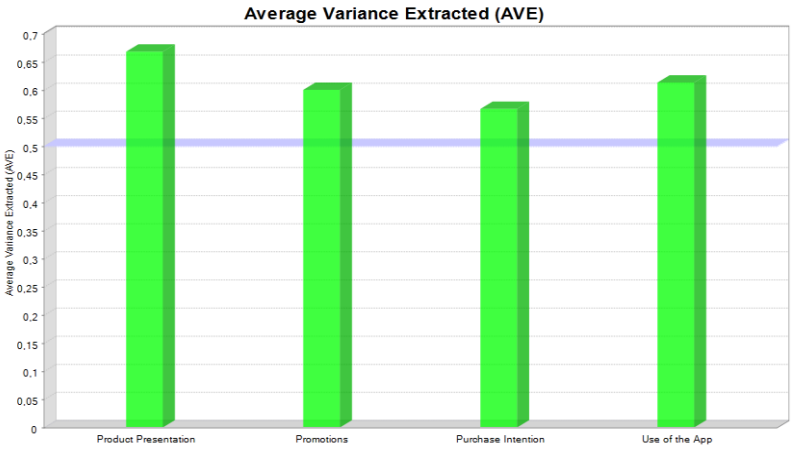


Figure 3. AVE

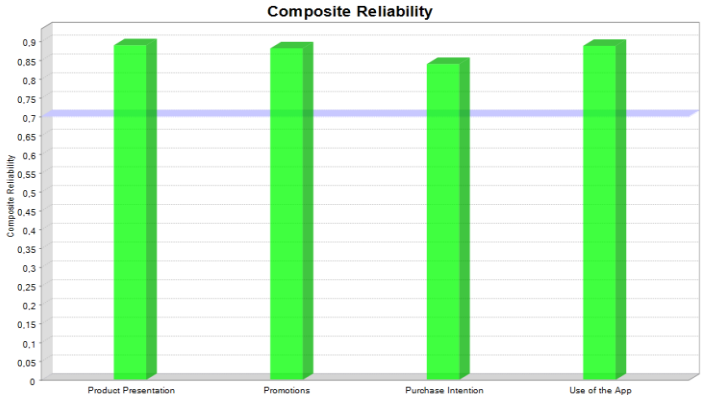


Figure 4. Composite reliability

The next step was to check the discriminant validity. According to (Urbach and Ahlemann & Ahlemann, 2010) the discriminant validity evaluates that the indicators of latent variables (LVs) are also different from each other. Discriminant validity shows that whether an indicator of a certain construct is also measuring another construct or not. There are two criteria to evaluate discriminant validity in the PLS-SEM approach that one is cross-loadings and the other one is the Fornell-Larcker criterion (Fornell & Larker, 1981). The model of the discriminant validity could be determined by comparing the factor loadings along with values of cross-loadings of all the indicators to their perspective LVs. A score of each construct is correlated with all other indicators, to obtain cross-loadings (Chin, 1998). Discriminant validity is checked by an indicator loading values are higher against its measure constructs and each construct contains the highest values with its assigned indicators. **Table 2** shows the Fornell-Larcker criterion of the model in this study.

Table 2: Fornell-Larcker criterion

	Presentation	**Purchase intention**	**Promotion**	**Use of the App**
Presentation	***0.817***			
Purchase intention	0.431	***0.753***		
Promotion	0.289	0.601	***0.775***	
Use of the App	0.280	0.433	0.315	***0.783***

As shown in table 2 the values in the table are greater than the values located in their corresponding column and row except revisit intention. This value shows the discriminant validity of the measurement model except for one construct. In the sequence Table 3 presents the Cross loadings values.

Table 3: Cross loadings

Cross Loadings	**Product Presentation**	**Promotions**	**Purchase Intention**	**Use of the App**
pp1	0.786	0.211	0.333	0.195
pp2	0.758	0.172	0.255	0.291
pp3	0.859	0.218	0.367	0.223
pp4	0.862	0.325	0.434	0.216
purcint1	0.482	0.400	0.748	0.400
purcint2	0.252	0.655	0.781	0.244
purcint3	0.320	0.283	0.746	0.284
purcint4	0.236	0.399	0.734	0.381
prom1	0.199	0.834	0.443	0.195
prom2	0.251	0.762	0.536	0.303
prom3	0.337	0.824	0.463	0.257
prom4	0.239	0.831	0.467	0.289
prom5	0.051	0.595	0.395	0.142
uapp1	0.261	0.098	0.278	0.727
uapp2	0.258	0.125	0.309	0.765
uapp3	0.244	0.309	0.360	0.806
uapp4	0.123	0.369	0.365	0.801
uapp5	0.236	0.268	0.366	0.813

In the sequence, we tested the model fit. Fitness of a model can be calculated by the two criteria; one is the coefficient of determination (R^2) and standardized root mean square residual (SRMR) values. The value of R^2 is 0.476 to Purchase intention and 1.138 to Use of the App. A value near to 0.333 shows the average. and value near 0.190 lower shows weak (Chin. 1998). The value of the (SRMR) should be greater than 0.05 and less than 0.10 (Rigle, Da Silva, & Bido, 2014), then this model shows a fit model. The value of the R^2 is shown in **Table 4:**

Table 4: Adjusted R^2

Constructs	R Square	R Square Adjusted
Purchase Intention	0.476	0.468
Use of the App	0.138	0.130

Table 5 (SRMR)

Fit Summary	Saturated Model	Estimated Model
SRMR	0.095	0.095
d_ULS	1.530	1.530
d_G	0.468	0.468
Chi-Square	585.601	585.601
NFI	0.701	0.701

The value of R^2 for latent variables were Use of the App = 0.138 and Purchase intention =0.476). The acceptable value for the coefficient of determination (R^2) shows the explanatory power. The values of LVs are within the premises of acceptable values which shows that model is highly fit. On the other hand, the value of the (SRMR) in table 4 is also within the premises of acceptable which shows that model is highly fit.

The path model was build up and executed for testing the hypothesis path model through smart PL-SEM to find the P-Value and calculate the Beta (B) Coefficient values. PLS-SEM Path analysis explains the change in one variable and there change on other variables and relationships between them. The Beta (B) coefficient is based on the magnitude, significance, and sign. The beta (B) coefficients signify the strength of the connection between LVs. The value of the Beta (B) coefficient should be more than 0.20 (Hildebrand 1986). The sign of the Beta coefficient should correspond to the proposed hypothesis. The value of the Beta coefficient (B) is significant at 0.05 levels. P-value should be less than 0.05 (Neyman-Pearson, 1966). Because of small sample size is employed in PLS-SEM, the bootstrap sample size is equal to the original sample size in this study.

In **table 6**, the Beta (B) value between Product Presentation and Purchase intention is 0.235 and the T statistic value is 3.505, and P-Value is 0.001 so the path between these two variables an acceptable value. The Beta (B) value between Product Presentation and Use of the App is 0.206 and the T statistic value is 2.278 and P-Value is 0.001 so the path between these two variables an acceptable value. The Beta (B) value between Promotions and Purchase Intention is 0.463 and the T statistic value is 7.096 and P-Value is 0.000 so the path between these two variables an acceptable value. The Beta (B) value between Use of the App and Purchase intention is 0.221 and the T value is 3.763 and P-Value is 0.000 so the path between these two variables an acceptable value. Table 5: shows the value of the Path Coefficient. From table 7., we can easily determine that all indirect effects are significant by meeting criteria recommended by the literature ($p < 0.05$; T Statistics >1.96). **Table 6** shows the result of the

significance level and **Table 7** shows the indirect effect's values. T values and path coefficients to backing the results of the PLS-SEM of path analysis.

Table 6: Path coefficient

Mean. STDEV. T-Values. P-Values	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Hypothesis
Product Presentation -> Purchase Intention	0.235	0.237	0.067	3.505	**0.000**	Supported
Product Presentation -> Use of the App	0.206	0.208	0.076	2.728	**0.006**	Supported
Promotions -> Purchase Intention	0.463	0.466	0.065	7.093	**0.000**	Supported
Promotions -> Use of the App	0.255	0.263	0.059	4.326	**0.000**	Supported
Use of the App -> Purchase Intention	0.221	0.220	0.059	3.763	**0.000**	Supported

*Significant Positive relationship

Table 7: Indirect effects

Mean. STDEV. T-Values. P-Values	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Product Presentation -> Use of the App -> Purchase Intention	0.046	0.047	0.023	2.017	**0.044**
Promotion -> Use of the App -> Purchase Intention	0.057	0.058	0.021	2.736	**0.006**

In the sequence, the testing path model **Figure 5** presents the inner loadings and $R^{2.}$

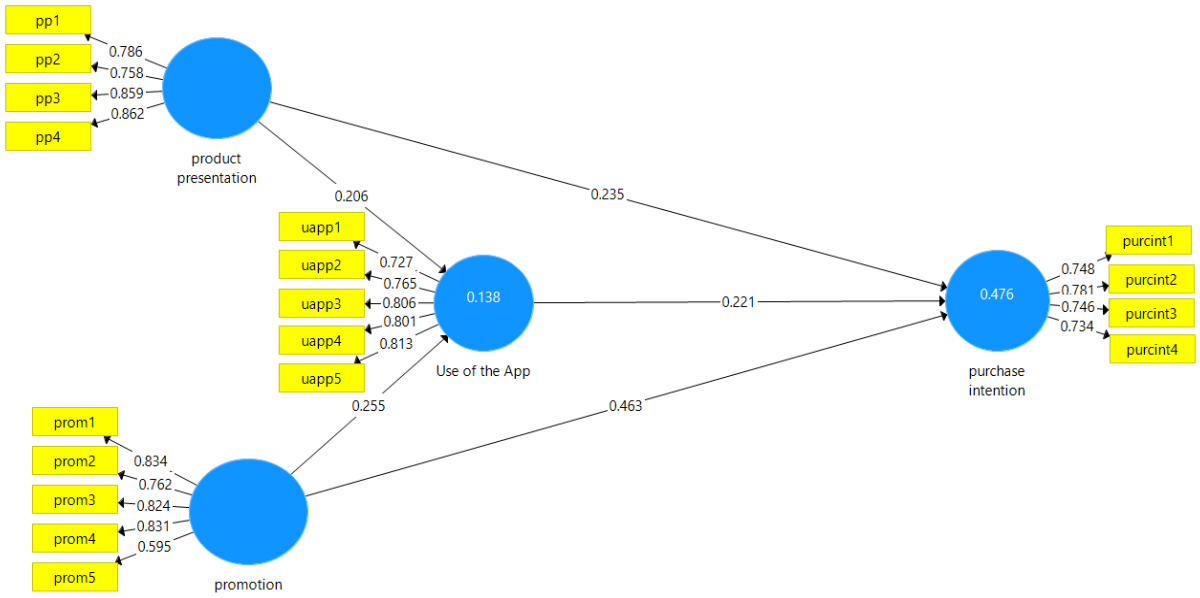


Figure 5: Testing Path Model

5. Discussion

The main purpose of this research was to investigate the impact of product presentation and promotions on the use of the App and the customer´s purchase intention. In doing so, our results showed aligned with the S-O-R model and Signaling theory. Indeed, product presentation has an important role in attracting customer´s interest in products and influencing the use of the App and purchase intention.

In a research conducted by Verma (2020) product presentation and mobile screen enhanced the perception of product availability and made it easy to search. In our view, such aspects are important to incentive the customer´s purchase intention. Hence, after theorizing on that, we tested it through the first hypothesis H1 and H2 in that, both showed significant results. In sum, product presentation beyond enhancing the perception of product availability as Verma (2020) supported, it also impacts on the use of the App as well on the customer´s purchase intention.

Still, in line with both theories (S-O-R and Signaling), we proposed that promotions could impact the use of the App and the customer´s purchase intention could. Moreover, the use of promotions on customers purchase intention have shown positive effects on TV (Saumendra, 2018), and on Internet (Baltas, 2003); however, its effect on Smartphones still demanded an investigation. Martins et al., (2018) showed that advertising value, flow experience, web design quality, and brand awareness explain purchase intention.

In our view, promotions act as a stimulus and signaling to the customer to make decisions. According Te'eni-Harari (2018) premiums can be used as an incentive among the young population. Taylor and Levin (2014) investigated the impact of consumers' likelihood to use the apps for information-sharing activities and purchasing. Parallel to their hypotheses, we proposed the impact of promotions on the use of the App and customer´s purchase intention. The results showed a significant effect on both constructs supporting the H3 and H4.

According to Matrolha (1984), the volume of messages received by customers can cause overload information and psychological problems—confusion, panic perplexity, frustration, and withdrawal. This argumentation makes it more relevant to investigate such strategy, massively used by Apps companies because it continues occurring nowadays and can affect the effectiveness of product presentation and promotions strategies.

Previous literature showed that promotions lead to the fast dissemination of information among customers (Chen and Yao, 2018). Also, promotions can be seen as a stimulus and signaling to check for the benefits offered, which in turn, tend to enhance the use of the App and consequently customer´s purchase intention. The fifth (H5) hypothesis was tested and supported, in that, the use of the Apps would positively influence purchase intention.

In sum, all hypotheses tested were supported by classical theories--S-O-R Model (Mehrabian and Russel, 1974), and Signaling Theory (Spencer, 2002) and previous findings. Although we have investigated the impact of stimulus and signals used by App companies, our findings are in line with past findings of the effectiveness of messages on TV and the Internet and extend the comprehension of customer´s responses on purchasing through Smartphones.

5.1 Theoretical and Managerial Implications

This research has some implications. First, from a theoretical perspective product presentation was positively related to the use of the App and customer´s purchase intention. Product presentation showed a stronger effect on purchase intention than on the use of the App.

It means that product presentation acts much more as a stimulus (Mehrabian and Russel, 1974) favoring the purchase of products than a signal (Spencer, 2002) to stimulate the use of the App.

Second, promotions showed stronger effects than product presentation on purchase intention and the use of the App. The relationship between promotions and purchase intention was the strongest one in the model. This means that promotions act as signaling and stimulus favoring the use of the App as well as the customer´s purchase intention. Thus, this study joins two theories to investigate the impact of stimulus and signals through mobile devices on customer´s behavior. In doing so, this study extends the theory by explaining the customer´s responses in the face of stimulus and signals in mobile device contexts.

From a managerial perspective, this study also presents implications. First, this study supports that Apps Companies Marketing Managers should develop different types of promotions, for example, bonus, price discounts, and delivery service for free. Also, the use of algorithms can be applied to identify customers that are more influenced by product presentations or promotions and in some cases for both of them.

5.2 Limitation and future research

This research presents limitations as usually in all studies. First, controlling for age could be beneficial to better understand the customer´s behavior. Different results can be found for younger consumers because they are more prone to use smartphones than older ones. Gender also can be an important variable to understand customer purchasing behavior on mobile devices. Usually, women look up for more information than men when making online buying. Additionally, including channels for customer services in the model and the time that customers use the App can be beneficial to understanding the customer's purchase intention.

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