

TECHNOLOGY HUNGER: M-COMMERCE ADOPTION IN THE FOOD DELIVERY MARKET

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1. INTRODUCTION

This article explores the context of mobile marketing, a dynamic, synergic and complex multi-communication interaction between firms and customers through mobile devices (Shankar & Balasubramanian, 2009). Mobile marketing is, actually, an answer from the market to a new consumer behavior, since shoppers use mobile devices even within a store, being the smartphone a shopping partner of the contemporary individuals (Shankar et al., 2016). In addition, Shankar et al. (2016) say there are more mobile devices than toothbrushes in the world, characterizing a global phenomenon.

In this scenario, m-commerce is an expression used to conceptualize the commercial transaction mediated by wireless technology, handled by mobile devices (Hung et al., 2012). M-commerce is a combination of e-commerce and the explosion of mobility, resulting in the new domain of mobile commerce, where individuals can purchase goods anywhere as long as they are connected (Clarke III, 2001). The configuration of m-commerce demands (i) a ubiquitous network, regarding a combination of networks such as a wireless LAN and 3G; (ii) constant access to the network; and (iii) the use of a mobile device enabling the access to the network (Kaplan, 2012).

Although m-commerce is a topic of great managerial and academic interest due to its impacts on consumer behavior and purchase processes, m-commerce is not a mature system, demanding scientific research in order to understand its acceptance, risk and the behavior of users and non-users, developing the existing theories (Groß, 2015; Marriot et al., 2017). As stated by Shankar et al. (2016), the development of m-commerce studies must address app design and its influence on consumer journey, consumer experience, context, temporal value, data security, decision models and the role of emotions (Shankar et al., 2016). Additionally, these directions corroborate the guidelines from the Marketing Science Institute – MSI (2018) and the research priorities for 2018 to 2020, regarding the need of understanding changes in consumer decision due to the impact of technology.

Literature also signalizes the need of understanding the drivers and antecedents of m-commerce, answering the question of how we achieve m-commerce and what are the main factors leading to m-commerce usage. These interrogations have conducted us to the literature of technology adoption and the Technology Acceptance Model – TAM, a well-known model that describes customer perceived ease of use, perceived usefulness and usage intentions (Marriott & Williams, 2016; Marriot et al., 2017; McLean, 2018).

The Technology Acceptance Model – TAM has two central cores, namely, perceived utility and perceived usage facility (Davis, 1989). This model finds convergence with the m-commerce research tradition, since the foundation of m-commerce is based on three dimensions – ubiquity, convenience, localization and personalization (Clarke III, 2001), although the interaction of these two streams of research remain undertheorized. Thus, given the importance of TAM in marketing literature, we understand TAM as an adequate starting point to introduce Clarke's (2001) dimensions in the context of technology adoption, in an attempt to explore m-commerce technology adoption.

In addition to the contribution of the TAM in an investigation about m-commerce, several scholars indicate the need of reviewing this model. The fast changing scenario for technology and the fact that perceived usefulness and perceived ease of use have been long investigated demonstrate weak empirical strength in works about mobile technology (Li et al., 2012; Holmes et al., 2014; Yang et al., 2017). On the other side, researchers question these results, proposing the excess of studies about TAM may have caused this impression,

demanding the need of an update in the Technology Acceptance Model, combining its constructs with other variables (Kokolakis, 2017; Yang et al., 2017).

Therefore, the aim of this article is to develop a model combining technology acceptance and m-commerce fundamental elements to explain m-commerce adoption. We address this purpose in a study in the food delivery context in Brazil, based on the growth potential of this sector (Abrasel, 2018) and the fact that Brazil is the 5th nation in smartphone usage in the world (Pag Brasil, 2019). We analyze iFood, the most downloaded app in Brazil for food delivery (McKinsey & Company, 2019). According to Luna *et al.* (2017), the Brazilian scenario is conducive for mobile marketing, as people are eliminating the physical wallet and migrating for the smartphone as an integrative device. Moreover, product specific m-commerce investigations may generate more reliable findings, since product differences impact consumer evaluation (Holmes et al., 2014).

2. THEORETICAL FRAMEWORK

2.1 M-commerce

M-commerce represents the action of navigate, search, compare and buy products and services in the online environment through mobile devices, specially smartphones and tablets (Chong, 2013; Groß, 2015; Marriot et al., 2017). This reality demands the design of retail strategies to plan and execute marketing activities based in mobile devices, covering consumer search, purchase, consumption, repurchase and recommendations (Shankar et al., 2016).

M-commerce holds unique variables, namely, personalization, ubiquity, convenience and location (Clarke III, 2001). Convenience refers to the factors creating time and place utility. Next, localization regards user location and service provider strategies. Ubiquity concerns the ability of communication independent of user location and, lastly, personalization refers to the system interface that allows personalized content.

After extensive literature review, we organized these constructs in two dimensions: perceived convenience and situation-dependent content. **Perceived convenience** covers ubiquity and personalization traits related to use convenience (Brown, 1990; Kim & Garrison, 2009; Okazaki & Mendez, 2013b; Ozakaki et al., 2012; Morosan, 2014; Morosan & Defranco, 2016; Lee & Rha, 2016; Roy & Moorthi, 2017; McLean, 2018). **Situation-dependent content** regards location and personalization traits related to consumer individual characteristics captured by service provider in real time such as location and interests that may turn the purchase more convenient (Kramer et al., 2000; Kenny & Marshall, 2000; Figge, 2004; Shen et al., 2013; Morosan, 2014; Bilgihan et al., 2016; Morosan & Defranco, 2016; McLean, 2018).

Early developments indicate perceived usefulness, perceived ease of use, social influence, perceived cost and trust as drives of m-commerce adoption (Tsu Wei et al., 2009). Zhang et al. (2012) revealed perceived usefulness and ease of use predict attitude, perceived cost, perceived behavioral control, subjective norms, innovativeness, compatibility, trust and perceived enjoyment predict behavioral intention. For its turn, behavioral intention predicts use. According to Chong (2013), perceived value, trust, perceived enjoyment and personal innovativeness are determinants of m-commerce adoption as well. Recently, Liu and Huang (2017) confirmed the role of perceived risk, perceived usefulness and positive emotion in m-commerce adoption.

Nevertheless, literature indicates unsolved questions leading to contradictory results regarding the importance of utility and hedonism in e-commerce contexts (Childers et al., 2001; Li, Dong, & Chen, 2012; Venkatesh et al., 2012; Holmes et al., 2014; Bilgihan et al., 2016). There are problems also concerning perceived ease of use (Kokolakis, 2017) and

privacy concerns in mobile devices adoption (Chen et al., 2008; Lee & Rha, 2016; Kokolakis, 2017; Roy & Moorthi, 2017).

These results signalize the need of deeper investigation on the possible drivers of m-commerce adoption. Furthermore, such findings find resonance in the Technology Acceptance Model (TAM), a useful path to understand e-commerce adoption (Ha & Stoel, 2009; Ingham, Cadieux, & Berrada, 2015).

2.2 Technology Acceptance Model

The Technology Acceptance Model – TAM is considered the most used model in predicting new technologies acceptance (Marriot & Williams, 2016; Marriott et al., 2017). Two central cores form the TAM: (i) perceived usefulness, regarding user perception to the help provided by technology; and (ii) perceived ease of use, in reference to user perception on how much technology use will promote an effort-free activity (Davis, 1989; Taylor & Todd, 1995).

However, the utilitarian dimension was insufficient to explain technology adoption, since people resort to technology devices for hedonic reasons as well (Venkatesh et al., 2012; Bilgihan et al., 2016). In this regard, Voss et al. (2003) indicate the importance of both dimensions, utilitarian and hedonic, enabling a comparison between them. In addition, literature holds adaptations of its main constructs: instead of perceived usefulness and perceived ease of use, effort expectation; and instead of perceived usefulness, performance expectation (Venkatesh et al., 2003; Venkatesh et al., 2012).

Venkatesh et al. (2003) added hedonic motivation, price value and habit to the TAM, confirming mobile internet users support the model. Roy and Moothi (2017) added ubiquity to the model, confirming the variable as a predictor of m-commerce adoption. Shen et al. (2013) adapted the TAM to observe system utility and information utility to predict an app adoption, indicating aesthetics, design, network stability, immediacy and customization as relevant aspects in perceived information utility. Morosan and Defranco (2016) included involvement, privacy concerns and perceived personalization as predictors of intention of use for apps.

We have also identified the need of understanding the effectiveness of the hedonic factor and perceived ease of use, as these drivers have been questioned by literature. This connection has led us to investigate the possibility of a unique model combining technology acceptance predictors and m-commerce fundamental elements to explain m-commerce adoption. We have also included privacy concerns, since it may limit the use of technology (Roy & Moorthi, 2017).

2.3 The m-commerce adoption theoretical model

By combining TAM's dimensions (perceived usefulness and perceived ease of use) and the elements that compose m-commerce – localization, personalization, convenience and ubiquity (Clarke III, 2001), we have reached six dimensions to be tested as predictors of m-commerce adoption: perceived convenience, situation-dependent content, perceived ease of use, hedonic dimension, utilitarian dimension and privacy concerns.

Perceived convenience

In the context of consumer behavior, convenience is a construct that covers time and space flexibility, related to an economy of psychological and cognitive effort, resulting in speed, accessibility and the availability of a service (Okazaki & Mendez, 2013a). Similarly, according to Shankar et al. (2016), convenience in the digital environment must address convenience, ubiquity and personalization traits that focus on the possibility of user adapting m-commerce to his preferences.

Consumer perception on ubiquity arises from the use of m-commerce for simultaneous task fulfillment and the feelings of speed and immediacy, along with the possibility of internet searching without constraints of time and space, creating a perception of convenience (Okazaki & Mendez, 2013b; McLean, 2018). For its turn, personalization concerns an effort reduction brought by the possibility of choosing favorite items, facilitating the access to them on the app (Lee & Rha, 2016; Morosan, 2014; Morosan & Defranco, 2016).

Considering the above, our concept of perceived convenience in m-commerce context integrates convenience itself, ubiquity and personalization aspects. From this, we present the first hypothesis of the study:

H1: Perceived convenience positively affects m-commerce adoption.

Situation-dependent content

Marketing efforts must rely on the specific context of purchase in order to affect consumer decision, scenario in which localization and temporal aspects create positive conditions for consumers (Kenny & Marshall, 2000; Luo et al., 2013). Hence, consumers are willing to close deals with offers closer to them (Banerjee & Dholakia, 2008; Luo et al., 2013; Spiekermann et al., 2011).

As Figge (2004) proposed, situation-dependent context implies personalization and localization attributes that demand an attitude from the service provider, who offers specific products and services according to the user situation, his personal tastes and location. This means offer proposals and specific products for consumers (Kramer et al., 2000; Bilgihan et al., 2016).

Localization regards user perception that the received information is specific to his current location (Shen et al., 2013) and personalization in the online environment reflects the level of information design to access and satisfy the needs of the user (Kramer et al., 2000; Bilgihan, et al., 2016). Together these variables create situation-dependent context, combining consumer location, tastes and preferences. Based on this, we present the second hypothesis:

H2: Situation-dependent context positively affects m-commerce adoption.

Perceived ease of use

In the TAM, ease of use reflects how much a person believes that a system is capable of providing an effort-free task (Davis, 1989). Hence, there is an expectation of effort, translated to consumer context as the level of ease of use the consumers associated to a particular technology (Vankatesh et al., 2012).

On the context of internet, ease of use enables the user to feel in control, conforming a signal that the company understands, care and respects consumers (Bilgihan et al., 2016).

H3: Ease of use positively affects m-commerce adoption.

Hedonic dimension

The hedonic dimension aims to analyze the pleasure involved in technology use. Early works about the combination of the TAM and the fun factor have proved its ability in predicting m-commerce adoption (Bruner II & Kumar, 2005; Childers et al., 2001; Chong, 2013). Recently, Yang et al. (2017) also confirmed the role of social influence and fun on technology adoption. These results reinforce the idea of testing the influence of a hedonic dimension on m-commerce adoption. Fun also has a close relation with convenience, customization and engagement (McLean, 2018). Convenience is presented as well as associated with ease of use in TAM, considering that utility leads to convenience (Okazaki & Mendez, 2013a).

The hedonic dimension reflects the good feelings brought by the use of a specific technology, being the object of the following hypothesis:

H4: The hedonic dimension positively affects m-commerce adoption.

Utilitarian dimension

Next, we adapted perceived usefulness to a utilitarian dimension, so we could compare both hedonic and utilitarian dimensions in predicting technology adoption, as recommended by Voss et al. (2003). Considering that perceived usefulness and utilitarian dimension share the same semantics, this adaptation does not harm the core of the model (Davis, 1989, Voss et al., 2003; McLean, 2018). Utilitarian aspects evaluated by a consumer reflect his expectation of the benefits a technology brings in certain activities (Venkatesh et al., 2012). In this sense, the utilitarian dimension points out the functionality of products and services, related to used utility perception.

In the digital environment, utility is associated to the utilitarian consumption, guided by objectives and derived from a rational behavior, concerned more with task achievement than experiences (Batra & Ahtola, 1991; Bilgihan et al., 2016). This kind of consumption is typical of consumers that evaluate time as a crucial resource and prefer online services due to its convenience and money economy (Bilgihan et al., 2016; Huang, 2005). Based on this, we have created a new hypothesis:

H5: The utilitarian dimension positively affects e-commerce adoption.

Privacy concerns

Information privacy is related to the individual rights of consumers, who must decide the level of information sharing they want (Eastin et al., 2016; Roy & Moorthi, 2017), being influenced by a subjective notion of justice and equity originated in a particular context, covering culture, law and industry sector (Campbell, 1997; Malhotra et al., 2004). As personal data collection and storage increase, privacy concerns arise, especially regarding the information shared on mobile devices for commercial transactions (Okazaki et al., 2009; Roy & Moorthi, 2017). This means the risk of information for a specific purpose could be used for other objectives, or even by other users or firms, originating the last hypothesis:

H6: Privacy concerns negatively affect m-commerce adoption.

Figure 1 illustrates the research model.

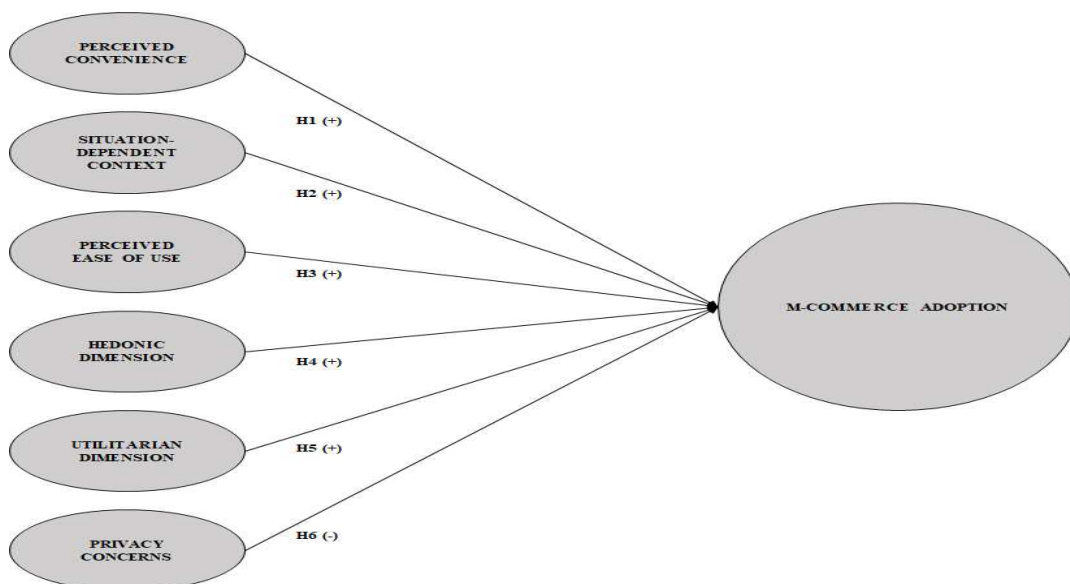


Figure 1. Research model

Table 1 presents a synthesis of the dimensions of the model.

Table 1
Synthesis of the dimensions of the model

Dimension	Definition	Theoretical Support
<i>Perceived convenience</i>	Time-space flexibility, covering ubiquity, convenience and the part of personalization related to users' preferences	Clarke III (2001); Okazaki and Mendez (2013a); Morosan and Defranco, 2016; McLean, 2018
<i>Situation-dependent content</i>	Attributes from personalization that demand an attitude from service provider: products and services according to consumer situation	Kremer et al. (2000); Figge (2004); Shen et al. (2013); Bilgihan et al. (2016)
<i>Ease of use</i>	How much a person believes a particular system provides an effort-free task	Davis (1989); Clarke III (2001)
<i>Hedonic dimension</i>	Pleasure in using technologies	Voss et al. (2003); Brown and Venkatesh (2005); Venkatesh et al. (2012); Bilgihan et al. (2016)
<i>Utilitarian dimension</i>	Functional attributes of a product or service	Davis (1989); Voss et al. (2003); Okazaki and Mendez (2013a); Morosan (2014); Bilgihan et al. (2016); Morosan and Defranco (2016); McLean (2018)
<i>Privacy concerns</i>	Concerns about data security and risk	Wright (2005); Chen et al. (2008); Roy and Moorthi (2017)

3. METHOD

The primary data of this study was collected by an online survey with Brazilian iFood consumers in 2019. For data collection, we developed a survey instrument formed by 35 items as Table 2 shows.

The first step was back-translation, as the original scales were in English and the questionnaire were available in Portuguese, following Brislin's (1970) guidance: the original instrument is translated to the language of the context of application, followed by a translation to English and a comparison between the three documents, looking for semantic equivalence of the items. The final version of the questionnaire was submitted to a pre-test. After this stage, questionnaire was available online using Google Forms platform. We shared the survey on several university groups' communities and iFood communities on Facebook. We received 282 eligible responses, predominantly female (62%), between 20 and 29 years old (42% are in the range 20-24 and 36% in the range 25-29). Participants used iFood at least once a month (43%) and at least once a week (27%).

Table 2
Dimensions of the model and corresponding items and scales

Dimension	Operational Definition	Source
Perceived Convenience (PCO)	7 points Likert scale	McLean (2018); Okazaki and Mendez (2013); Lee and Rha (2016)
Situation-dependent content (SDC)	7 points Likert scale	Shen <i>et al.</i> (2013); Morosan (2014)
Ease of use (EOU)	7 points Likert scale	Venkatesh and Bala (2008)
Hedonic dimension (HED)	Reverse semantic difference scale, being (1) an extreme and (2) the other extreme	Voss <i>et al.</i> (2003)
Utilitarian dimension (UTI)	Reverse semantic difference scale, being (1) an extreme and (2) the other extreme	Voss <i>et al.</i> (2003)
Privacy concerns (PRC)	7 points Likert scale	Malhotra <i>et al.</i> (2004)
Adoption (ADP)	7 points Likert scale	Limayem <i>et al.</i> (2000)

4. STATISTICAL ANALYSYS

Initially, an evaluation of the measurement model was performed using the confirmatory factor analysis (CFA). The data in Table III show that the model presents reliability, that is, all Cronbach alphas are higher than 0.75 and the composite reliability of the constructs are higher than 0.82. In the analysis of convergent validity, two aspects were considered: the significance and value of the item loads. Although all loads were significant, some items had loads below 0.5 and were therefore excluded (these items are highlighted in Table III). Only six items were excluded, out of a total of 33 (18%), which does not indicate that the model should be reassessed (Hair et al., 2014). Another aspect that demonstrates convergent validity is the average variance extracted (AVE), which must be equal to or greater than 0.5 from each dimension, which can be seen in Table 3.

Table 3
Measurement items and constructs

Construct/items	Mean	β	α	CR	AVE
Perceived Convenience (PCO)					
I don't need to interrupt what I am doing to use iFood	5.48	0.76			
iFood enables me to order food in the most convenient time to me	5.78	0.81			
iFood is practical because I can use it easily wherever I am	5.70	0.67			
With iFood. I can compare options in a way that I could not do using other platforms					
Buying with iFood is an efficient way of managing my time			0.81	0.80	0.50
Buying with iFood makes my life easier					
Buying with iFood matches my schedule					
Having an iFood login makes me feel recognized as a client					
iFood allows me saving time and effort by making easier the access to my favorite options	5.58	0.63			
Situation-dependent content (SDC)					
iFood offers me product options according to my localization	6.19	0.58			
iFood offers me specific promotion based on localization	5.26	0.93			
I receive offers and promotions in iFood according to my localization	5.37	0.84	0.82	0.84	0.57
iFood suggests offers and promotions according to my preferences	4.73	0.61			
Ease of use (EOU)					
My interaction with iFood is clear and comprehensible	6.19	0.55			
Interacting with iFood does demand much mental effort	6.10	0.57	0.76	0.82	0.54
I think it is easy to use iFood	6.36	0.81			
It is easy to perform and complete orders in iFood	6.27	0.83			
Hedonic dimension (HED)					
Buying on iFood is (1) Fun - Not Fun (7)	4.26	0.75			
Buying on iFood is (1) Exciting - Not Exciting (7)	3.69	0.75			
Buying on iFood is (1) Pleasurable - Non Pleasurable (7)	4.48	0.83	0.87	0.85	0.55
Buying on iFood is (1) Stimulating - Not Stimulating (7)	4.15	0.82			
Buying on iFood is (1) Enjoyable - Not Enjoyable (7)	5.45	0.51			
Utilitarian dimension (UTI)					
Buying on iFood is (1) Efficient - Non Efficient (7)	6.19	0.76			
Buying on iFood is (1) Useful - Useless (7)	6.36	0.78			
Buying on iFood is (1) Functional - Not Functional (7)	6.38	0.79	0.85	0.85	0.58
Buying on iFood is (1) Necessary - Unnecessary (7)					
Buying on iFood is (1) Practical - Not Practical (7)	6.38	0.74			
Privacy concerns (PRC)					

Comparing to other people. I am more concerned about the way I share information with companies through smartphones	4.97	0.63			
To me, it is very important to keep my privacy considering companies that act through smartphones	5.79	0.81	0.79	0.80	0.57
I concern about threats to my personal privacy nowadays	5.82	0.82			
Adoption (ADP)					
I intend to use iFood for buying food in the near future	6.05	0.91			
I will probably buy food through iFood in the near future	6.11	0.92	0.91	0.92	0.78
I expect to use iFood for buying in the near future	5.87	0.82			

Standardized Loading (β); Cronbach alpha (α); Composite reliability (CR); Average variance extracted (AVE); Low load items were excluded and are highlighted in the table.

In the verification of the discriminant validity, the average variance extracted (AVE) is compared with the variance shared by the constructs. Following the recommendation by Fornell and Larcker (1981), the square root of the AVE is positioned diagonally in Table IV and the correlations are positioned at the bottom. As can be seen, all AVE have higher values than shared variances (correlations).

Table 4
Discriminant validity of the constructs e correlations between constructs

Construct	PCO	SDC	EOU	HED	UTI	PRC	ADP
Perceived Convenience (PCO)	0.707						
Situation-dependent content (SDC)	0.442	0.755					
Ease of use (EOU)	0.404	0.244	0.735				
Hedonic dimension (HED)	0.440	0.253	0.147	0.742			
Utilitarian dimension (UTI)	0.491	0.227	0.401	0.445	0.762		
Privacy concerns (PRC)	0.042	0.040	-0.079	0.006	-0.085	0.755	
Adoption (ADP)	0.643	0.285	0.288	0.319	0.468	0.134	0.883

Bold numbers in the diagonals represent the square root of average variance extracted (AVE) and the lower cells represent the correlation among constructs

Finally, the evaluation of the measurement model presents good adjustment indexes (Table 5), which gives security to continue with the analysis of the structural model.

Table 5
Model Fit Indices for Measurement Model

χ^2	df	χ^2 / df	RMSEA	CFI	TLI
540.799	303	1.785	0.053	0.935	0.925

Note. χ^2 = Chi-square, df = degree of freedom, RMSEA = Root Mean Square Error of Approximation, CFI= Comparative Fit Index, TLI = Tucker-Lewis Index.

The results of Structural equation modeling (SEM) are presented in Table VI. Of the six proposed hypotheses, only three were accepted. The Perceived Convenience (PCO) has a positive effect on Adoption ($\beta = 0.339$, $p < 0.001$), confirming hypothesis 1. The Utilitarian dimension (UTI) has a positive effect on Adoption ($\beta = 0.226$, $p < 0.001$), confirming hypothesis 5. Finally, Privacy concerns (PRC) has a positive effect on Adoption ($\beta = 0.130$, $p < 0.05$), confirming hypothesis 6.

Table 6

Standardised regression weights for the causal paths and result of hypothesis test

Hypothesis	B	t	Sig.	Result
H1: PCO → ADP	0.539	6.06	0.000	Accepted
H2: SDC → ADP	-0.003	-0.053	0.958	Rejected
H3: EOU → ADP	-0.007	-0.103	0.918	Rejected
H4: HED → ADP	-0.018	-0.269	0.788	Rejected
H5: UTI → ADP	0.226	3.078	0.002	Accepted
H6: PRC → ADP	0.130	2.320	0.020	Accepted

 $\chi^2 / df = 1.785$, RMSEA=0.053, CFI=0.935, TLI= 0.925

5. DISCUSSION

Perceived convenience is the most significant and influent variable of the model. As literature corroborates, consumers value the possibility of using the app anywhere and anytime, even when moving (Andrews et al., 2015; McLean, 2018; Shankar et al., 2016). This result points out to the work of Okazaki and Mendez (2013a) when they say perceived convenience is the conductor of m-commerce. Although this is a known result, when we control the effect of other benefits of mobile devices, such as personalization and localization, as our model proposed in the variable situation-dependent content, adding a hedonic dimension, perceived convenience is reaffirmed as the most important factor. We understand that the range of types of food and restaurants covered by iFood has an impact on its adoption, indicating that the higher the convenience, the better.

Although the matter of perceived convenience ratifies previous research, this cannot be treated as an obvious result. In this paper, perceived convenience conforms an amplified construct, covering personalization and ubiquity traits. In this sense, we understand perceived convenience is intrinsically related to connectivity, being a construct that should be included in any model regarding technology adoption due to its prediction power.

Regarding **situation-dependent content**, our results contradict the literature that conceives this a driver of m-commerce adoption (Figge, 2004; Kramer, Noronha, & Vergo, 2000; Shen et al., 2013; Bilgihan, Kandampully, & Zhang, 2016). However, studies on such subject have focused on the impact of situation-dependent content for coupons, emergence services and advertising (Clarke III, 2001; Banerjee & Dholakia, 2008; Spiekermann et al., 2011; Luo et al., 2013), but in the case of apps, the results is distinct, and two considerations must be made. Firstly, iFood can be in a process of customizing the app, as it is a new technology and this kind of context is in constant development. Second, we address localization and the fact that the number of options varies from place to place and, in a country of continental dimensions as Brazil, differences from city to city must be analyzed.

For **ease of use** results, we consider a counterintuitive finding, as literature sets ease of use as the basis the Technology Acceptance Model (Okazaki & Mendez, 2013a; Shen et al., 2013; Bilgihan et al., 2016; Morosan & Defranco, 2016; 2017; McLean, 2018). Nevertheless, recent studies have indicated this likely occurrence. As technology advances, ease of use shifts from a concern to a non-perceived variable, especially for young people (Yang et al., 2017), matching the respondents of the present research. Besides, familiarity with e-commerce make people find the use of technologies intuitive, being unable to evaluate ease of use (Chong, 2013). From this, we understand ease of use may be losing prediction power.

Previous research indicate that the cognitive effort of using a technologic tool becomes lower with time due to the diffusion of technological devices in people's routines (Chong, 2013; Yang et al., 2017). In this sense, using technology is not a matter of wanting, but a

reality. Hence, the rejection of the idea that ease of use impacts m-commerce adoption reveals the need of reformulating the TAM as the relationship between man and technology changes.

The results for the **hedonic dimension** diverge from studies that associate this dimension with the adoption of new technologies, putting hedonism in the same level of importance of the utilitarian aspects (Childers et al., 2001; Bruner II & Kumar, 2003; Chong, 2013). We understand these differences must be related to the product category, as the hedonic dimension is a predictor of m-commerce adoption in the context of entertainment. From this, we interpret that when an app works as an intermediate for reaching a product or service, the hedonic dimension is not relevant. However, when an app is the end itself, the hedonic dimension works as a driver of technology adoption.

In this sense, our findings endorse the influence of the **utilitarian dimension** on m-commerce adoption. Utilitarian consumption has always been associated to the online environment, where consumers are guided by objectives and seek task fulfillment more than experiences (Batra & Ahtola, 1991; Bilgihan et al., 2016). We highlight that, although utility is a driver of technology acceptance, one of its items, “need”, has been excluded from the questionnaire. Therefore, despite its usefulness, m-commerce is not necessary (Teo, 2001; Huang, 2005; Bilgihan et al., 2016). In the case of this research, consumers can buy and get food many other ways, being the app a convenient option among others.

Considering the results for the hedonic dimension, we alert for generalizations regarding this factor being more important than the utilitarian dimension, since context is determinant to the impact of each dimension.

Lastly, although results show there are **privacy concerns** (the means of its items were 6.15 from 7), we observed a significant positive effect, contradicting the fact that consumers’ worries about safety in the online environment are a constraint factor (Roy & Moorthi, 2017). Hence, we expected a negative relation between privacy concerns and m-commerce adoption, as consumers are asked to provide personal information in a mobile platform. Nevertheless, we identified a positive effect. This result lead us to the privacy paradox: although consumers worry about privacy, they easily provide important data for relatively small rewards (Kokolakis, 2017; Lee & Rha, 2016; Norberg et al., 2007). One of the motivations for this behavior is the bias of immediate gratification, as consumers value immediate benefits, without elaborating about the risks (Gilovich et al., 2002; Kokolakis, 2017).

We have identified a paradox regarding perceived personalization and privacy concerns, following the clues from Lee and Rha (2016) and Kokolakis (2017). Another possible reason for this effect is related to the construct trust. Since iFood is a popular and well known brand in Brazil, consumers may see this brand as a reliable brand, reducing risk perception around technology adoption and privacy concerns. Hence, despite the concern about information and consumer data, this concern tends to be reduced when consumers trust a brand.

6. CONCLUSION

The objective of this article was to propose a model combining technology acceptance and m-commerce elements to explain m-commerce adoption. Our main contribution is a model composed by perceived convenience, utilitarian aspects and privacy safety, conforming the drivers of m-commerce adoption. Perceived convenience is the main driver, covering personalization and ubiquity traits, conforming an amplified construct. The utilitarian aspects are connected to the convenience brought by m-commerce, since consumers tend to value more the utilitarian dimension that the hedonic dimension of the app. Finally, contradicting our expectations, the privacy safety perceived by consumers are another driver of m-commerce adoption.

This model is a first step into an updated version of the TAM, adequate to a consumer society used to technologies. The ineffectiveness of ease of use indicates this variable has been absorbed in our reality due to people's familiarity with mobile devices and technological tools. Considering the importance of convenience and utilitarian aspects, we understand consumer m-commerce adoption as a resource for task solution, confirming the role of technology in facilitating people's lives. These findings are contributive for consumption experience studies and, more specifically, for customer journey research, as it reveals relevant points of contact between customer and service provider. Besides, our results may help scholars and practitioners dedicated to the development of omnichannel strategies, combining online and offline environments.

The divergences regarding privacy concerns, the rejection of the hedonic dimension and the situation-dependent content also conform a contribution, as they force researchers to investigate beyond the 'obvious' results when we think about technology adoption. This puts light into a new behavior of consumers, since they do not feel impacted by technology anymore – this impact has become part of their routine and changes may happen even without their acknowledgement, raising a new phenomenon to be investigated.

In addition, we shed light on the fact that privacy concern has a positive effect on m-commerce adoption, in alignment with the paradox of personalization and the concerns consumers have about their own information online: consumers do feel safe in providing their data for small gratifications – in this case, the utilitarian dimension and the perceived convenience. Another root for this explanation is associated with brand trust. Thus, we believe that future studies could explore this theme, bringing trust as a moderator variable. Moreover, we believe investigations on the subjectivity around the question 'why do we trust technology' and the meanings of the relationship between the man and its relationship with technology could be widely investigated.

We foresee a possible bias based on the characteristics of our sample, as most participants were young with higher education. Hence, we suggest testing the drivers of adoption with other groups of population, especially in Brazil and its multiple realities, using age as a moderator to understand if this is a matter of generation or education and the impacts of each result. Additionally, the fact that all subjects were iFood users may have added a bias concerning situation-dependent content, as iFood covered users' location. The lack of non-users could have underestimated this variable relevance, which could be overcome with comparisons of users and non-users to understand not only the drivers, but also the inhibitors of m-commerce adoption.

Despite limitations, we reached our main purpose. These results are not conclusive, but a first step into a more reliable and adequate version of the TAM, which should be the focus of future research. We recommend deeper investigation on the attributes of perceived convenience and the antecedents and consequences of this construct, due to its importance in technology acceptance. Lastly, we suggest this investigation should be unfolded in different contexts, in order to understand the impact of social, cultural and economic aspects in m-commerce adoption.

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