

# Contextual marketing and information privacy concerns in m-commerce and their impact on consumer loyalty

Contextual marketing and IPC in m-commerce

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Received 30 September 2022  
Revised 28 January 2023  
5 April 2023  
14 July 2023  
Accepted 6 September 2023

## Abstract

**Purpose** – This study examines the effect of contextual perceived value activated by contextual marketing offers and information privacy concerns on consumer loyalty in mobile commerce.

**Design/methodology/approach** – The survey was conducted through 340 mobile users in Morocco and the collected data were analyzed using structural equation modeling.

**Findings** – This study's results show that contextual marketing and information privacy concerns are key determinants in improving customer loyalty in the m-commerce context. Perceived ubiquity has a positive impact on perceived trust, which also impacts consumer loyalty. Information privacy concerns also have a positive impact on customer satisfaction, yet it does not impact perceived trust, which is contrary to the results of other researchers. It can also be concluded that customer satisfaction and trust are important antecedents of consumer loyalty.

**Practical implications** – This research gives rise to some important managerial and strategic implications in order to integrate contextual marketing strategies, as well as theoretical implications that concern this field of study.

**Originality/value** – This research makes a significant contribution to knowledge by examining the role of contextual marketing and information privacy concerns in the m-commerce context. These results will be considered useful for marketers and for businesses in general who wish to integrate a marketing strategy that is based on a customer-centric approach. It also contributes to the related literature, as there are few studies focused on m-commerce and contextual marketing within the context of Morocco.

**Keywords** Contextual marketing, Information privacy concerns, Perceived ubiquity, Consumer loyalty, Mobile commerce, Customer satisfaction

**Paper type** Research paper

## Introduction

The growth of mobile commerce and online marketing has been shaped by technological advancements and increased smartphone and internet accessibility worldwide, revolutionizing consumer behavior. The COVID-19 pandemic further accelerated this development in Morocco, prompting businesses to adopt online models (Zaoui, Hamou-ou-Brahim, Zhou, Omrane, & Huang, 2021) for sustained customer outreach and revenue generation during confinement measures. According to DataReportal, as of February 2023, Morocco had 33.18 million internet users, with an 88.1% penetration rate. A significant proportion of the population engaged in online shopping, with 29.0% making purchases in 2022 and 32.3% using shopping apps in 2021.

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The authors would like to express their heartfelt gratitude to Professor Ilham EL HARAOUY for her support and precious guidance. Additionally, the authors extend their appreciation to the Editors of AGJSR and the anonymous reviewers for their valuable comments.



Arab Gulf Journal of Scientific Research  
Emerald Publishing Limited  
e-ISSN: 2536-0051  
p-ISSN: 1985-9899  
DOI 10.1108/AGJSR-09-2022-0198

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The contextual marketing theory highlights the transition from content marketing (e-commerce) to contextual marketing (m-commerce), where offers are customized based on customer actions, timing and location, emphasizing the need for marketers to tailor their efforts to consumer's context, to effectively influence purchasing decisions (Kenny & Marshall, 2000; Luo, Andrews, Fang, & Phang, 2014). This shift is further accelerated by advancements in contextual marketing, leveraging technologies to address privacy concerns and provide advanced targeting capabilities beyond basic methods.

Mobile value research has attempted to capture the impact of context by introducing the contextually embedded value concept, relating contextual value to real-time information (Gummerus & Pihlström, 2011). Lee and Jun (2007) further suggest that the contextual perceived value (CPV) construct can capture people's perceptions of context awareness in m-commerce. Prior research on contextual marketing, have studied the impact of CPV on different outcomes, on satisfaction, perceived usefulness and repurchase intention (Lee & Jun, 2007), on purchase intention (Dou, Fan, & Cai, 2020) and on behavioral intention to use MC (Lee, 2005; Lee & Jun, 2007). Although marketers prioritize repurchase intention and satisfying experiences as crucial outcomes (Chopdar & Balakrishnan, 2020), loyalty is considered a better predictor of future profitability than repurchase or purchase intentions; since loyal customers tend to generate more repeat purchases, positive word-of-mouth and less price sensitivity than non-loyal customers (McMullan & Gilmore, 2008).

Lin and Wang (2006), investigated the factors influencing customer loyalty in m-commerce, revealing that perceived value, habits, trust and satisfaction impact m-loyalty. Lee and Wong (2016), suggest the need to develop a unique body of theory, specific to loyalty in the m-commerce context, that incorporates the technological component. Furthermore, previous research (Xu, Luo, Carroll, & Rosson, 2011; Wu and Wang, 2005; Lee & Jun, 2007) have identified privacy concerns as a crucial factor hindering users' adoption of location-based services and highlighted its importance in m-commerce. Thus, to ensure a contextual experience tailored to the user's context, the benefits of MC and contextual marketing must be balanced against their potential privacy risks. This prompted us to include the information privacy concerns (IPC) construct in our research model to bridge this gap in the literature. However, to our knowledge, no empirical study to date has investigated the interrelationship among CPV, IPC, TAM, perceived ubiquity, satisfaction, trust and customer loyalty in one integrated MC model. Therefore, this study aims to address these gaps by studying the impact of CPV and IPC in the m-commerce context on consumer loyalty.

Recent studies (Berrado, Elfahli, & El Garah, 2013; Bighrissen, 2021) reveal rising MC adoption in Morocco. Furthermore, research on contextual marketing factors and privacy concerns have been mainly conducted in Western and European countries. However, it is unclear whether these factors are relevant in countries with different cultures. Therefore, the extent to which users' privacy concerns and CPV of marketing offers differ in Morocco remains unexplored and to our knowledge, there is no existing research on the impact of contextual marketing strategies in this context. Thus, the expected rise of m-commerce and online shopping in Morocco, underlines the relevance of this research, it additionally, raises the question of whether these factors are equally applicable and relevant in countries with different cultural backgrounds, such as Morocco.

Hence our research question:

*RQ.* Does contextual perceived value activated by contextual marketing offers and information privacy concerns, in the m-commerce context influence consumer loyalty?

The adoption of a contextual marketing strategy by marketers influences and motivates consumer choice and creates valuable triggers throughout the customer journey. Therefore,

this research makes a significant contribution to knowledge and provides managerial implications in order to integrate contextual marketing strategies based on customer-centric strategies. By examining the role of contextual perceived value activated by contextual marketing offer, information privacy concerns and perceived ubiquity in MC.

### **Theoretical framework and literature review**

The Expectation-Confirmation Theory (ECT) explains the change process of the level of consumer's satisfaction and trust based on the extent to which their expectation is confirmed through direct experience and user satisfaction (Oliver, 1980; Eid, 2011) and can be used to integrate the modeling of the relationship between customer trust and satisfaction with customer loyalty. Thus, when expectations are confirmed, customers are more likely to develop repurchasing intentions, further emphasizing the importance of customer satisfaction and trust as mediators in the relationship between contextual marketing and customer loyalty in MC. PU and PEOU are also considered important TAM elements in ECT (Hsiao & Chang, 2014).

In Technology Acceptance Model (TAM), perceived usefulness and perceived ease of use, influence the attitude of individuals towards the use of a new technology (Chi, 2018), affecting the intention to use MC in our case. Several authors (Amin, Rezaei, & Abolghasemi, 2014; Chi, 2018) have adopted TAM in the context of M-commerce, but very few researchers have integrated the contextual variables specific to MC (Lee & Jun, 2007; Wu, 2016). Therefore, to increase the external validity of TAM, it will be necessary to explore the influence of the latter.

The contextual marketing theory emphasizes the significance of contextual targeting, including recommendations on websites and applications and mobile advertising, to ensure a contextual experience (Kenny & Marshall, 2000). The theory has been further developed and supported by research, such as Luo *et al.* (2014), who found that context-dependent marketing strategies increase customer satisfaction and loyalty. Thus, marketers can leverage contextual messages to build "ubiquitous" relationships with mobile customers.

#### *Contextual marketing*

Contextual marketing emerged from the market space theory of business by Rayport and Sviokla, who argued that value can be created for customers in the e-market space by three elements: content, context and infrastructure (Luo, 2003). Thomadsen *et al.* (2018) further define context as "factors that have the potential to shift the choice outcome by altering the decision-making process".

Kenny and Marshall (2000) defined contextual marketing as "the extent to which e-businesses use the ubiquitous internet to provide customers with relevant information in the right context and in real-time." Additionally, Zerr, Albert, and Forster (2017) define contextual marketing, as a plan-based, automated marketing strategy that reacts to relevant circumstances by utilizing the automated and real-time identification and interpretation of the context, as well as the marketing reactions derived from it.

The ubiquity of mobile devices and access to information has revolutionized consumer behavior, enabling more informed purchasing and advertising tactics (Verhoef *et al.*, 2017; Zaki, 2019). However, to achieve immediate consumers' goals, marketers must understand their context and tailor marketing strategies accordingly. Lee and Jun (2007) introduced the CPV construct, which refers to "mobile users' evaluation of the context-aware function" activated by contextual marketing offers to study the effect of contextual marketing on satisfaction and repurchase intention. Furthermore, Luo (2003) suggests that contextual marketing can lead to repeated purchases and competitive advantages, such as loyal customers, cross-selling and up-selling opportunities, for e-businesses.

*Information privacy concerns:*

“Information privacy concerns” is an increasingly critical factor to consider in contextual marketing, which relies on location and personal data to offer relevant and personalized content. Internet users’ information privacy concerns (IUIPC) serves as a tool to analyze consumers’ privacy concerns and reactions to privacy threats and it’s defined as the extent to which users are concerned about online marketers collecting personal information, their control over that information and their awareness of its use (Malhotra, Kim, & Agarwal, 2004). Perceived privacy concerns, reflecting the “willingness to provide personal information to transact”, can negatively affect consumers’ willingness to disclose personal information and result in their reluctance to make online purchases (Dinev & Hart, 2006).

While contextual marketing and personalized experiences in MC can offer many benefits to users, considering potential privacy risks is crucial. IPC can lead to defensive behaviors like shopping cart abandonments and increased caution in sharing information, particularly when users perceive a mismatch between context-specific norms and sharing risks (Bandara, Fernando, & Akter, 2021; Li, Rho, & Kobsa, 2022). Zhou (2011) identified users’ concerns about data collection and secondary use as primary drivers of perceived risks in using location-based services. Thus, implementing CM should consider privacy concerns, while tailoring experiences and minimizing breaches.

In light of these theories, our study aims to investigate the impact of contextual marketing mainly CPV and IPC in m-commerce on consumer loyalty, through the mediating factors of customer satisfaction and perceived trust, by proposing an MC consumers’ loyalty model.

## Hypotheses development and research model

### *Contextual perceived value (CPV)*

Lee and Jun (2007) have proposed the CPV construct to indicate the evaluation of the contextual feature by mobile users. And in the context of MC, they define this concept as “the extent to which a person thinks that receiving contextual information or services would improve their purchasing performance” (Lee & Jun, 2007). Previous research has shown that perceived value has a positive impact on customer loyalty and satisfaction (Lin & Wang, 2006). Additionally, it has been confirmed that CPV, activated by contextual marketing offers, positively influences the perceived usefulness of mobile commerce users, their intention to use it and customer satisfaction (Lee & Jun, 2007; Wu, 2021). Therefore, the following hypothesis has been formulated:

*H1.* Contextual perceived value has a positive effect on customer satisfaction.

Offering timely contextual information to customers aligns with the real-time marketing (RTM) theory, which aims to enhance relevance by providing contextual content that aligns with consumers’ lives (McKenna, 1995; Mazerant, Willemsen, Neijens, & van Noort, 2021). The ability of context-specific marketing and RTM can enhance the perceived usefulness of MC users, leading to customer satisfaction for the use of mobile commerce and thereby CPV will activate a favorable attitude towards the MC, which also improves the perceived usefulness of the MC (Lee & Jun, 2007):

*H2.* Contextual perceived value has a positive effect on perceived usefulness

When perceived value is low, customers are more likely to switch to competitors to seek increased value, leading to decreased loyalty (Anderson & Srinivasan, 2003). Hence, providing contextually relevant offers may increase customer loyalty (Vanessa & Japutra, 2021). Research specifically exploring the impact of CPV on loyalty in the context of m-commerce is lacking, highlighting a research gap emphasized by Lee and Jun (2007). Considering that customer satisfaction is a necessary precondition for customer loyalty,

which in turn is a key driver of profit growth and performance (Reichheld, 1993). To increase customer satisfaction, marketers may need to design strategies to improve CPV when they need it (Lee & Jun, 2007). Hence, the relationship between CPV and customer loyalty may vary depending on the level of satisfaction. Indicating that customer satisfaction is a mediating variable in linking the value and loyalty perceived by the customer (Baron & Kenny, 1986). Therefore:

- H3. Contextual perceived value has a positive effect on consumer loyalty.
- H4. Customer satisfaction mediates the effect of contextual perceived value on consumer loyalty.

#### *Perceived usefulness (PU)*

Perceived usefulness is often used as an indicator of consumer satisfaction with new technologies, it is considered a strong predictor of intention to use m-commerce and is expected to affect consumer satisfaction (Marinkovic & Kalinic, 2017). Previous studies have consistently shown a significant effect of perceived usefulness on customer satisfaction (Dalcher & Shine, 2003; Devaraj, Fan, & Kohli, 2002; Lee & Jun, 2007). This means that it will play an important role in customer satisfaction. Additionally, recent research by Maryanto and Kaihatu (2021) has emphasized the indirect impact of perceived usefulness on customer loyalty, mediated through customer satisfaction. Thereby:

- H5. Perceived usefulness has a positive effect on customer satisfaction.
- H6. Customer satisfaction mediates the effect of perceived usefulness on consumer loyalty.

#### *Perceived ease of use (PEOU)*

Perceived ease of use (PEOU) is defined by Davis, Bagozzi, and Warshaw (1989) as “the extent to which individuals believe that the use of a specific technology would not require physical or mental effort”. It assesses users’ perceptions of the mental effort involved in utilizing the technology. Previous research has supported the positive impact of perceived ease of use (PEOU) on the perceived usefulness (PU) of m-commerce (Lee & Jun, 2007; Lee, 2018). Revels, Tojib, and Tsarenko (2010) have further established that PEOU serves as a strong predictor of PU in the context of m-commerce. Moreover, studies in the context of online shopping and m-commerce, have also highlighted the positive relationship between PEOU, PU and customer satisfaction (Lee & Jun, 2007; Amin, Rezaei, & Abolghasemi, 2014). Researchers have also emphasized the importance of PEOU in relation to customer satisfaction and overall loyalty (Amin *et al.*, 2014). Furthermore, the impact of ease of use on customer loyalty has been found to be mediated by customer satisfaction (Anugrah, 2020). Therefore, the following hypotheses can be proposed:

- H7. Perceived ease of use has a positive effect on perceived usefulness.
- H8. Perceived ease of use has a positive effect on customer satisfaction.
- H9. Customer satisfaction mediates the effect of ease of use on consumer loyalty.

#### *Perceived ubiquity*

Ubiquity is considered a unique feature of M-commerce. According to Ashraf, Thongpapanl, Menguc, and Northey (2017) it is the most important feature of m-commerce and serves as a key antecedent for the intention and actual use of m-commerce in different markets. Ubiquity is defined as the temporal flexibility and spatial flexibility which are unique characteristics of mobile phones that allow people to be connected anytime and anywhere (Okazaki, 2009).

And because of this, it offers consumers time convenience and greater accessibility through spatial flexibility (Anwar, Thongpapanl, & Ashraf, 2020).

In our research, we define perceived ubiquity as the interconnected dimension of the convenience of time and spatial flexibility. Okazaki and Mendez (2013) have found that it builds trust and attitude towards mobile advertising. Thus, according to the research results of Okazaki, Molina, and Hirose (2012), perceived ubiquity, in terms of saving time and spatial flexibility, encourages consumers to trust the broadcasted ad. This finding contradicts their initial hypothesis, which suggested a negative effect of perceived ubiquity on trust. However, it aligns with the results of previous studies (Lee, 2005; Zhou, 2012; Hossain, Xi, Nurunnabi, & Hussain, 2020), that highlight the positive impact of ubiquity on trust. Since trust is considered an antecedent of customer loyalty, it can be argued that perceived ubiquity enhances customer loyalty through improved perceived trust, therefore the following hypotheses are proposed:

H10. Perceived ubiquity has a positive effect on perceived trust.

H11. Perceived trust mediates the effect of perceived ubiquity on consumer loyalty.

#### *Information privacy concerns (IPC)*

According to previous studies, information privacy concerns (IPC) negatively impact perceived trust (Malhotra *et al.*, 2004; Okazaki *et al.*, 2012; Fodor and Brem, 2015) and since trust has been considered as an antecedent of customer satisfaction (Kim, Jin, & Swinney, 2009). It can be hypothesized that privacy concerns will have a positive influence on customer satisfaction, which was also supported by Onlao and Rotchanakitumnuai (2010). Wong, Tan, and Lim (2019) have further highlighted the indirect impact of privacy and security concerns on loyalty mediated by trust. Thereby:

H12. Information privacy concerns have a negative effect on perceived trust.

H13. Information privacy concerns have a positive effect on customer satisfaction.

H14. Perceived trust mediates the effect of IPC on consumer loyalty.

Flavián and Guinalú (2006) suggested that the perceived security in the processing of personal data by the website will have a direct influence on customer loyalty. Therefore, consumers' willingness to share data with businesses is a critically important prerequisite for understanding the changing needs of customers and developing products and services based on this understanding creates a loyal customer base and fosters a successful long-term relationship (Leppäniemi, Karjaluoto, & Saarijärvi, 2017). The findings of Halimi, Chavosh, and Choshalyc (2011), indicate that as consumer satisfaction increases, so does customer loyalty. Thus, it is likely that satisfied customers are more willing to share information with a company to gain relationship benefits (Leppäniemi *et al.*, 2017). Thereby:

H15. Information privacy concerns have a positive effect on consumer loyalty.

H16. Customer satisfaction mediates the effect of IPC on consumer loyalty.

#### *Customer satisfaction*

Customer satisfaction remains an assessment of past service experiences, while trust is more associated with the future service relationship (Mosavi, Sangari, & Keramati, 2018), it is considered a strong predictor of behavioral variables such as intentions to repurchase intention, WOM, or loyalty (Eggert & Ulaga, 2002). According to previous studies, satisfaction has a positive impact on loyalty and trust (Mosavi *et al.*, 2018; Lin & Wang, 2006; Eid, 2011), it is also considered a critical factor in enhancing customer loyalty, which, in turn, contributes to the overall performance of the company. Thereby:

H17. Customer satisfaction has a positive effect on perceived trust.

H18. Customer satisfaction has a positive effect on loyalty.

*Perceived trust*

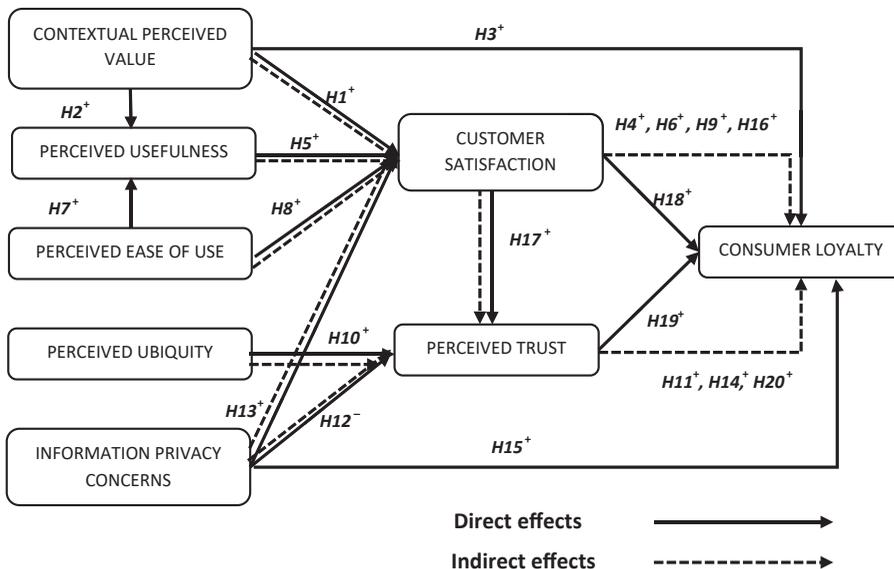
The importance of user trust is emphasized in the context of mobile commerce, as consumers are unable to touch, taste, or smell the product (Singh, Zolkepli, & Kit, 2018). Previous studies have consistently highlighted that perceived trust had a direct positive impact on overall satisfaction and customer loyalty (Chiou, 2004; Lin & Wang, 2006; Deng, Lu, Wei, & Zhang, 2010; Akgül, 2018). Furthermore, trusting a service provider leads to increased expectations of satisfaction and loyalty from customers (Kassim & Abdullah, 2008). Thus:

H19. Perceived trust has a positive effect on loyalty.

Research by Mahapatra (2013) supports the notion that satisfaction acts as an antecedent of trust and trust, in turn, acts as an antecedent of customer loyalty. Additionally, trust also directly affects loyalty. Studies by Yieh, Chiao, and Chiu (2007) and Osman and Sentosa (2013) have indicated that customer satisfaction indirectly affects customer loyalty through the mediating factor of trust. Thereby:

H20. Perceived trust mediates the effect of customer satisfaction on consumer loyalty.

Based on the literature review and the theoretical foundations presented above, a research model was developed as shown in Figure 1 and 20 hypotheses were tested out, to highlight the impact of contextual marketing and IPC in the context of m-commerce on customer loyalty.



Source(s): Authors' elaboration

Figure 1. Research model

## Research methodology

### *Sampling*

To test our hypotheses, a multi-item online survey was conducted. The instrument underwent review by doctoral students and researchers for precision and clarity. A pretest involving 17 consumers and professionals refined and validated our questionnaire. The survey was distributed to 340 Moroccan mobile users via online channels, resulting in 335 valid responses after eliminating five illogical responses. The sample size was suitable for SEM and theoretical model analysis (Tabachnick & Fidell, 2014). Among the respondents, 41.5% were women and 58.5% were men, with 38.5% aged 18-25 years, approximately 34% aged 26-33 years and the remaining 27.5% above 34 years. Demographic profile, internet and MC usage experience and mobile shopping experience are presented in Table 1.

### *Measures*

Existing measures were utilized to ensure comparability across studies. The items were adapted to the research context and the questionnaire was administered in French and English, with careful attention to accurate translation and clarity, to avoid linguistic ambiguities.

“Contextual perceived value” was assessed using a six-item scale adapted from Lee and Jun (2007), Merisavo *et al.* (2007) and Wu (2016). “Perceived usefulness” and “perceived ease of use” were measured using four and three-item scales, respectively, adapted from Lee and Jun (2007) and Davis *et al.* (1989). A six-item scale, adapted from Okazaki and Mendez (2013) and Kleijnen, De Ruyter, was used to measure “perceived ubiquity.” “IPC” was adapted from Malhotra *et al.* (2004), considering it as a one-dimensional variable.

“Customer satisfaction” was measured using a three-item scale adapted from Devaraj *et al.* (2002). “Perceived trust” was assessed with a five-item scale adapted from Gefen, Karahanna, and Straub (2003). “Consumer loyalty” was assessed using a four-item scale adapted from Lee and Chung (2009) and Baabdullah, Alalwan, Rana, Kizgin, and Patil (2019). All variables were carried out by a seven-point Likert scale ranging from 1 (Strongly disagree) to 7 (Strongly agree).

## Results

### *Measurement model evaluation*

The SEM technique, comprising confirmatory factor analysis and structural model testing, was conducted using SmartPLS-3 to validate the hypotheses and theoretical model. Items with factor loadings below 0.7 were excluded to enhance instrument reliability. The remaining correlation coefficients exceeded 0.7, indicating shared variance between constructs and items. All critical ratios (t-values) exceeded 1.96, indicating statistical significance (see Table 2). The CR of each variable ranged from 0.884 to 0.918, surpassing the threshold of 0.8 and the AVE of each variable ranged from 0.603 to 0.788, exceeding the minimum requirement of 0.5. The obtained CR and AVE values for each variable conform to the standards of Fornell and Larcker (1981), with thresholds of 0.70 for CR and 0.50 for AVE. We assessed the reliability of our measurement model using Cronbach’s Alpha and Jöreskog Rho. All values are greater than 0.8, ranging from 0.825 to 0.891 and 0.826 to 0.900, respectively, indicating that it is very satisfactory.

Discriminant validity was assessed to ensure that the measurement of each construct is not a reflection of any other measurement. Results in Table A1 indicate that the square root of the AVE for each variable exceeds the other correlation coefficients, indicating that discriminant validity is achieved. Cross-loading analysis demonstrated that factor loading indicators on the assigned construct exceeded loadings of other constructs, meeting the threshold of 0.70 (Hair, Ringle, & Sarstedt, 2012). The HTMT ratio values were all below the

		Frequency	Percentage		Frequency	Percentage	
Gender	Female	139	41.5	Internet use experience	Less than a year	1	0.3
	Male	196	58.5		1 to 3 years	8	2.4
Age groups	Under 18	1	0.3		4 to 6 years	3	0.9
	18-25	129	38.5		More than 6 years	323	96.4
	26-33	113	33.7	Using the smartphone to obtain information on products and services	No	10	3.0
	34-41	21	6.3		Yes	325	97.0
	42-49	39	11.6				
	50-57	32	9.6				
Level of education	High school or below	12	3.6	Smartphone usage to obtain information	Always	217	64.7
	Bachelor's	54	16.1		Very Frequently	96	28.7
	Master's	160	47.8		Occasionally rarely	20	6
	PhD	100	29.9		Very Rarely	2	0.6
Professions	Other	9	2.7		No	0	0
	Managers and higher intellectual professions	24	7.2	Mobile shopping experience	Yes	15	5.1
	Employee	131	39.1			320	95.5
	Entrepreneur	24	7.2				
	Student	125	37.3				
	Freelancer	19	5.7				
	Other	12	3.6				

Source(s): Authors' own analyses

Table 1.  
Sample characteristics

Variable	Items codes	Factor loading	T-value	CR	AVE	Cronbach's alpha	Rho value
Contextual perceived value	CPV_1	0.754	22.820	0.886	0.609	0.839	0.839
	CPV_2	0.821	34.829				
	CPV_3	0.731	19.389				
	CPV_4	0.820	37.427				
	CPV_5	0.772	26.570				
	CPV_6	0.694*	19.021				
Perceived usefulness	PU_1	0.827	40.835	0.918	0.736	0.880	0.883
	PU_2	0.896	68.346				
	PU_3	0.861	48.239				
	PU_4	0.846	34.840				
Perceived ease of use	PEOU_1	0.868	56.112	0.896	0.741	0.825	0.826
	PEOU_2	0.855	36.153				
	PEOU_3	0.860	45.158				
Perceived ubiquity	TC_1	0.817	35.613	0.913	0.678	0.881	0.885
	TC_2	0.857	48.313				
	TC_3	0.809	29.293				
	SF_1	0.795	29.967				
	SF_2	0.837	37.067				
	SF_3	0.684*	19.002				
Information privacy concerns	AWA_1	0.558*	10.112	0.914	0.603	0.891	0.900
	AWA_2	0.607*	11.146				
	AWA_3	0.768	16.897				
	COLL_2	0.802	25.601				
	COLL_3	0.755	17.811				
	COLL_4	0.763	20.109				
	CONTROL_1	0.812	28.633				
	CONTROL_2	0.754	29.344				
CONTROL_3	0.780	28.701					
Customer Satisfaction	SS_1	0.899	79.848	0.918	0.788	0.866	0.873
	SS_2	0.862	34.149				
	SS_3	0.901	69.870				
Perceived trust	PT_1	0.764	26.512	0.895	0.632	0.854	0.864
	PT_2	0.823	33.617				
	PT_3	0.885	48.525				
	PT_4	0.743	22.554				
	PT_5	0.752	26.306				
Consumer loyalty	LOY_1	0.773	25.982	0.884	0.655	0.825	0.826
	LOY_2	0.826	37.983				
	LOY_3	0.836	30.971				
	LOY_4	0.801	33.816				

**Table 2.**  
Convergent validity  
and reliability

**Note(s):** \*: non-significant relation  
**Source(s):** Authors' own analyses

threshold of 0.9 (Henseler, Ringle, & Sarstedt, 2015). Furthermore, our full collinearity test (Table A2) revealed VIF values below 3.3, indicating the absence of common method bias (Kock, 2015).

#### Structural model evaluation

We analyzed the structural model following the steps outlined by Hair, Page, and Brunsveld (2019). Table 3 presents the statistically significant path coefficient estimates for our hypotheses, with t-values exceeding 1.96 and p-values below 0.05. However, H1 and H12 were

	Std.Beta	Sample mean (M)	Std.Error	T-statistics	P-values	R <sup>2</sup>	F <sup>2</sup>	Q <sup>2</sup>
H1: CPV → SS	0.125	0.125	0.072	1.743	0.081*	0.527	0.017	0.402
H2: CPV → PU	0.486	0.487	0.048	10.180	0.000	0.612	0.488	0.444
H3: CPV → LOY	0.116	0.112	0.043	2.716	0.007	0.675	0.028	0.424
H5: PU → SS	0.172	0.172	0.075	2.294	0.022		0.024	
H7: PEOU → PU	0.434	0.434	0.053	8.208	0.000		0.390	
H8: PEOU → SS	0.451	0.451	0.063	7.172	0.000		0.243	
H10: PUB → PT	0.329	0.331	0.060	5.499	0.000		0.115	
H12: IPC → PT	-0.079	-0.080	0.044	1.800	0.072*	0.541	0.011	0.333
H13: IPC → SS	0.146	0.146	0.052	2.801	0.005		0.037	
H15: IPC → LOY	0.200	0.200	0.038	5.261	0.000		0.097	
H17: SS → PT	0.505	0.504	0.058	8.647	0.000		0.287	
H18: SS → LOY	0.336	0.336	0.066	5.084	0.000		0.155	
H19: PT → LOY	0.373	0.374	0.059	6.376	0.000		0.208	

**Note(s):** \*: non-significant relation

**Source(s):** Authors' own analyses

**Table 3.**  
Path coefficient estimates, R<sup>2</sup>, F<sup>2</sup> and Q<sup>2</sup>

not found to be significant, leading us to reject the mediation hypotheses H4 and H14. Based on R square, 67.5% of the variance in consumer loyalty is explained by exogenous variables, including CPV and IPC, customer satisfaction and perceived trust.

We also used the Cohen coefficient, which is the *f*-square. Thus, we can conclude that the variable that explains most of the variance in consumer loyalty is perceived trust, while the variable that explains most of the variance in perceived trust is customer satisfaction. And the variable that explains most of the variance in customer satisfaction is perceived ease of use. Additionally, the Stone-Geisser coefficient (*Q*<sup>2</sup>) indicates the predictive relevance of the model. Following Cohen's (1988) guidelines, all constructs have strong predictive relevance, while the perceived trust construct has moderate predictive relevance.

### Mediation analysis

We used the Preacher and Hayes (2008) approach to examine mediation effects. In the first stage, we tested the relationship between the independent and dependent variables using bootstrapping. The results in Table 4 indicate that all five mediation effects were significant (*t*-values >1.96, *p*-value <0.05).

In the second stage, we examined the confidence intervals (LL and UL) to determine if they included zero. Table 5 reveals that the confidence intervals in all five hypotheses did not include zero, indicating the presence of mediation. Following Hair *et al.*'s (2021) guidelines, both the indirect and direct effects were significant and positive, indicating a complementary partial mediation. Figure 2 illustrates the results of the SEM model, demonstrating the impact of each variable on customer satisfaction, perceived trust and consumer loyalty.

### Discussion

Through our results, four hypotheses were rejected and sixteen hypotheses were accepted. The CPV construct aligns with contextual marketing theory and real-time marketing theory,

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T-statistics (O/STDEV)	P-values
H6: PU → SS → LOY	0.084	0.086	0.030	2.819	0.004
H9: PEOU → SS → LOY	0.151	0.149	0.029	5.119	0.000
H11: PUB → PT → LOY	0.113	0.114	0.030	3.702	0.000
H16: IPC → SS → LOY	0.056	0.057	0.022	2.574	0.010
H20: SS → PT → LOY	0.184	0.183	0.036	5.159	0.000

**Source(s):** Authors' own analyses

**Table 4.**  
Indirect effects

investigating mobile users' perception of contextual information/services and its impact on their purchasing behavior, experiences and loyalty. H1 and H4 were both rejected, while H2 and H3 were accepted. Indicating that CPV has a direct positive effect on perceived usefulness and customer loyalty which is consistent with the findings of previous studies (Lee & Jun, 2007; Vanessa & Japutra, 2021). However, contrary to the findings of Lee and Jun (2007), it doesn't influence customer satisfaction nor does the latter mediates the effect of CPV on customer loyalty. This implies that perceiving value in contextual information/services does not necessarily increase customer satisfaction, but it fosters loyalty towards the brand/company.

Perceived usefulness (PU) and perceived ease of use (PEOU) are key constructs in TAM, influencing the intention to use m-commerce. H5, H7 and H8 were supported by our empirical results. Additionally, the mediation hypotheses, stipulating that customer satisfaction mediates the effect of PU (H6) and PEOU (H9), on consumer loyalty, were accepted based on the mediation tests. These findings align with prior research (Lee & Jun, 2007; Revels *et al.*, 2010; Amin *et al.*, 2014; Lee, 2018; Marinkovic & Kalinic, 2017; Anugrah, 2020; Maryanto & Kaihatu, 2021), emphasizing the importance of PU and PEOU in MC and how they can improve customer loyalty through enhanced satisfaction.

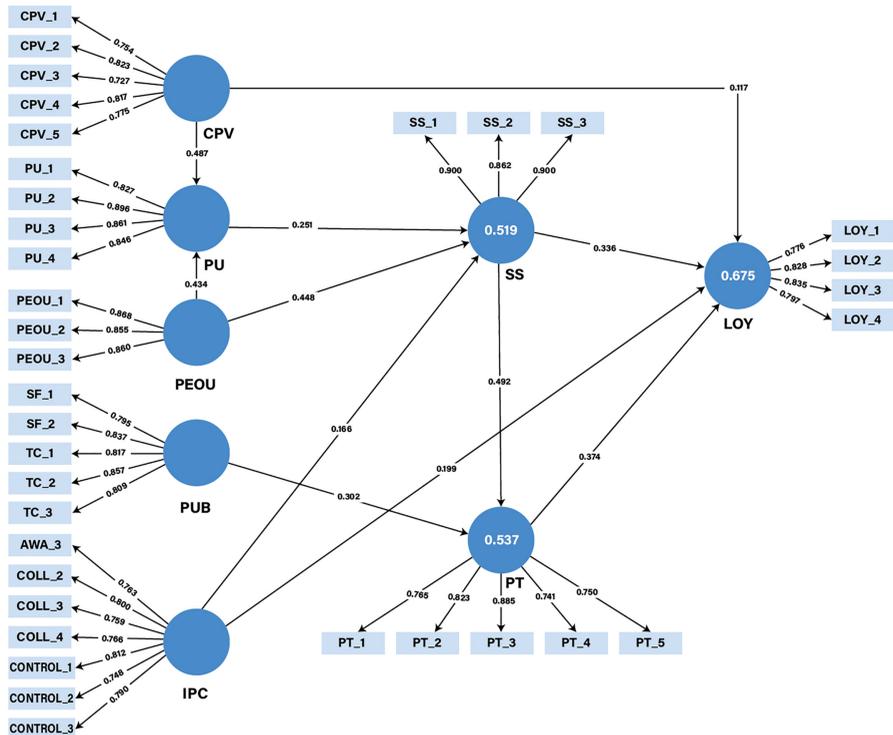
Perceived ubiquity plays a dual role in m-commerce as both a unique factor and a contextual variable. H10 and H11 were both accepted. Perceived ubiquity positively affects perceived trust, consistent with previous studies (Lee, 2005; Zhou, 2012; Hossain *et al.*, 2020), implying that consumers value the time-saving and spatial flexibility advantages of m-commerce, leading to positive perceptions of ubiquity and increased trust in ads and information within the m-commerce context. Furthermore, perceived trust mediates the impact of perceived ubiquity on consumer loyalty, confirming that improved perceived ubiquity can enhance customer loyalty through enhanced trust.

Based on our findings, H12 and H14 were rejected as IPC did not have a negative effect on perceived trust nor mediate the effect on consumer loyalty, contrary to prior research (Malhotra *et al.*, 2004; Okazaki *et al.*, 2012; Fodor and Brem, 2015; Wong *et al.*, 2019). This suggests the need to consider other contextual factors such as cultural values, awareness of privacy and security measures and the level of technological adoption among Moroccan consumers in shaping and moderating the relationship between IPC, perceived trust and consumer loyalty. IPC positively affects customer satisfaction, aligning with Onlaor and Rotchanakitumnuai (2010). Thus, H13 is accepted, implying that a positive perception of legally responsible behavior towards information privacy leads to improved customer satisfaction. Furthermore, H15 and H16 are also accepted, aligning with the results of

	Direct effect (DE)	95% CI of DE	t-value	Significance $P < 0.05?$	Indirect effect (IE)	95% CI of IE	t-value	Significance $P < 0.05?$	Decision
H6: PU → SS → LOY	0.130	[0.067-0.210]	3.565	Yes	0.131	[0.058-0.203]	3.528	Yes	Complementary Partial Mediation
H9: PEOU → SS → LOY	0.290	[0.227-0.354]	8.870	Yes	0.290	[0.225-0.354]	8.777	Yes	Complementary Partial Mediation
H11: PUB → PT → LOY	0.285	[0.201-0.373]	5.281	Yes	0.086	[0.028-0.145]	3.765	Yes	Complementary Partial Mediation
H16: IPC → SS → LOY	0.113	[0.058-0.180]	3.702	Yes	0.113	[0.054-0.172]	2.877	Yes	Complementary Partial Mediation
H20: SS → PT → LOY	0.336	[0.408-0.625]	5.093	Yes	0.184	[0.113-0.255]	5.111	Yes	Complementary Partial Mediation

**Source(s):** Authors' own analyses

**Table 5.**  
Confidence interval  
and mediation type



**Figure 2.**  
Model testing  
through SEM

**Source(s):** Authors' own analyses

(Flavián & Guinalú, 2006; Halimi *et al.*, 2011; Leppäniemi *et al.*, 2017), indicating that positive perception of confidentiality and privacy of personal data directly and positively influences loyalty and can enhance customer loyalty by improving satisfaction.

Satisfaction and trust are key antecedents of customer loyalty and mediating variables in this study. Based on our findings, customer satisfaction positively influences perceived trust and loyalty. Thus, H17 and H18 are accepted, consistent with previous research (Mosavi *et al.*, 2018; Lin & Wang, 2006; Eid, 2011), which proved that higher levels of customer satisfaction lead to increased customer loyalty. H19 is also accepted, as perceived trust has a positive impact on consumer loyalty, aligning with prior studies (Chiou, 2004; Lin & Wang, 2006; Deng *et al.*, 2010; Akgül, 2018). Additionally, perceived trust mediates the relationship between customer satisfaction and consumer loyalty, validating the findings of Yieh *et al.* (2007) and Osman and Sentosa (2013). Therefore, H20 is accepted.

### Conclusion and implications

This study examines the effect of contextual perceived value activated by contextual marketing offers and information privacy concerns on loyalty and the extent to which customer satisfaction and trust play a mediating role, by proposing and validating an MC consumers' loyalty model. Our results show that contextual marketing and IPC are key determinants in improving customer loyalty in m-commerce. While IPC does not impact perceived trust negatively, contrary to the results of other researchers, this may be related to

the Moroccan context, potentially influenced by the different cultural values and norms around privacy and trust that Moroccan consumers may have. Another possible explanation could be related to the current level of technological development and awareness of the importance of privacy and security measures in Morocco.

Our research highlights the potential benefits of contextual marketing for both marketers and consumers in the MC environment and provides key contributions to the field of consumer behavior in Morocco.

### **Theoretical contributions**

Our research makes significant theoretical contributions to the literature in several ways. Firstly, it addresses a critical gap in the existing body of knowledge by focusing on MC and investigating the impact of contextual marketing and IPC specifically in the context of Morocco, as limited studies have explored these aspects, despite the increasing adoption of MC in Morocco. By filling this gap, our research provides valuable insights for developing effective contextual marketing strategies to enhance Moroccan consumer loyalty in the m-commerce domain. Moreover, our study contributes to the broader understanding of contextual marketing, IPC and loyalty in MC environments, particularly in developing countries.

Secondly, our research addresses the limitations emphasized by [Lee and Jun \(2007\)](#) to investigate the effect of contextual marketing offers on loyalty and the need to explore the influence of customers' concerns about privacy on CS. Loyalty is a crucial factor that predicts future profitability and by validating the proposed MC consumers' loyalty model, our study offers an initial framework to comprehend the effects of contextual marketing on loyalty. Furthermore, our model incorporates the IPC construct, recognizing its significance in influencing loyalty in the MC environment. It further validates satisfaction and trust as crucial drivers of consumer loyalty in m-commerce.

Finally, this study extends prior findings, by proposing and validating an integrated MC consumers' loyalty model, investigating the effect CPV, IPC, ubiquity, TAM and loyalty with customer satisfaction and trust as mediating variables. Moreover, our findings highlight the importance of considering cultural context in understanding the relationship between IPC and trust, suggesting the need for further research to comprehend the complexities of this relationship in different cultural contexts.

### **Practical implications**

Our research offers insights into the significance of contextual marketing strategies for marketers and the opportunities presented by m-commerce factors that influence consumer decisions, thereby creating valuable triggers along the customer journey. Our findings can inform the development of effective marketing strategies for MC in Morocco and other developing countries.

While contextual marketing has been effective in stimulating purchases. Today it has a greater revolutionary power, by delivering highly targeted ads to mobile users and leveraging advanced technologies such as AI and machine learning, to drive growth and enhance consumer loyalty. It serves as an effective strategy to cut through the noise and motivate modern Moroccan buyers.

Our research findings emphasize key insights for marketers. Specifically, CPV positively influences consumer loyalty, perceived ubiquity has a positive impact on perceived trust, consequently influencing consumer loyalty and IPC positively affects both customer satisfaction and consumer loyalty. It also highlights the importance of PU and PEOU in improving consumer satisfaction and loyalty. Additionally, perceived ubiquity in

m-commerce fosters positive perceptions and trust in advertisements and services due to its advantages, including time-saving and spatial flexibility.

These findings inform businesses and practitioners in the MC context, enabling better decision-making and strategy development for driving consumer loyalty. By focusing on providing relevant and context-sensitive offers tailored to customers based on their location, purchase history, or other relevant factors. Optimizing websites for mobile devices and adopting an omnichannel approach to enhance accessibility and availability. Building trust and ensuring perceived security, increasing customer satisfaction and ultimately loyalty through building long-term relationships with customers and ensuring data privacy through proper use of consented first-party data and eliminating invasive pop-ups and advertisements that bombard users.

Moreover, in the age of ubiquitous mobile devices and abundant information, leveraging context in decision-making empowers marketers to create compelling ad campaigns that connect with consumers and boost interaction and sales and build loyalty. Our findings support this, by encouraging businesses and practitioners to develop contextual marketing strategies to achieve success in their advertising efforts.

### Limitations and future research directions

While this research provides theoretical and practical contributions, the following limitations may be addressed in future research. One limitation is the non-probability convenience sampling method used in this study, which limits the generalizability of the findings. Our research examines the effect of contextual marketing, in the MC environment. Further research could explore its effect on mobile advertising, messaging or apps, providing new insights. Qualitative studies can uncover additional contextual elements and provide practical implications specific to the Moroccan context. Furthermore, investigating the impact of contextual marketing on customer experience and exploring other contextual variables influencing customer loyalty are promising research directions. Additionally, studying the integration of AI into contextual marketing strategies can shed light on its role in today's digital era.

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**Appendix**

Contextual  
marketing and  
IPC in m-  
commerce

	CPV	IPC	LOY	PEOU	PT	PU	PUB	SS
CPV	0.780							
IPC	0.375	0.777						
LOY	0.539	0.483	0.809					
PEOU	0.444	0.342	0.510	0.861				
PT	0.485	0.280	0.720	0.444	0.795			
PU	0.679	0.362	0.584	0.650	0.546	0.858		
PUB	0.544	0.461	0.703	0.622	0.640	0.697	0.823	
SS	0.497	0.412	0.736	0.668	0.699	0.603	0.688	0.887

**Table A1.**  
Discriminant validity–  
Fornell-Larcker  
criterion–Square root  
of AVE

Source(s): Authors' own analyses

	CPV	IPC	LOY	PEOU	PT	PU	PUB	SS
CPV			1.473			1.245		
IPC			1.266					1.174
LOY								
PEOU						1.245		1.769
PT			2.068					
PU								1.803
PUB					1.9			
SS			2.237		1.9			

**Table A2.**  
Common method bias

Source(s): Authors' own analyses

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