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E-commerce in Morocco in the era of COVID-19: Ephemeral or lasting trend

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Abstract:

Assessing the adoption intention of new markets and new technologies is key to their success. Thus, it is important to identify the reasons behind individuals' acceptance and use of a particular technology. For this, the current study aims at investigating Moroccan consumers' behavior toward using e-commerce during the COVID-19 pandemic. An empirical study has been conducted to understand the factors that influence the intention to adopt online shopping in Morocco, all while highlighting the change in behavior caused by the coronavirus. These factors include perceived risk, trust, perceived ease of use, perceived usefulness, perceived behavioral control, and subjective norm. An online questionnaire was distributed to gather data. A total of 296 answers were collected and analyzed using structural equation modeling. The results revealed a positive and significant impact of subjective norms, perceived ease of use, and perceived usefulness on Moroccan's intention to purchase online during the health crisis. The findings can help marketers and online business owners to grasp the motives behind Moroccan consumers' online purchase intention in the new context of the COVID-19 pandemic. The main limitation is that most of the survey respondents have a higher education, which is not representative of the Moroccan population.

1. Introduction:

Uncertainty governed businesses and households during the health crisis that caused major shocks and disruptions globally. COVID-19 emerged in late 2019 in Wuhan, China, and spread rapidly around the world (WHO, 2021). In January 2020, the world health organization (WHO) announced a public health emergency of international concern and declared Covid-19 as a global pandemic in March 2020 (WHO, 2020).

In the case of Morocco, the first case was recorded in March 2020, and with the expansion of the pandemic, Moroccan authorities declared a state of health emergency in the country. This led to putting in place strong security measures to limit the spread of the pandemic (Ali et al., 2020). Regardless of these measures, the pandemic caused considerable economic and social damage. These include a budget deficit of 7.6% of GDP, a fall in GDP by 1.5%, an increase in the rate of vulnerability to poverty to reach a peak of 27%, and an increase in the unemployment rate to reach 11.9% (HCP, 2020b).

Despite the unintended consequences caused by the crisis, COVID-19 had some positive aspects. Social distancing and lockdown have been conducive to digital growth within the country in several disciplines, such as education (e-learning), banking (e-banking), public services, teleworking, e-commerce, and online recruitment (e-recruitment). For instance, e-commerce saw an explosion in 2020 translated by an increase in the total number of users by 41.5% and an increase in the total amount spent by 24% compared to the previous year (CMI, 2020). This means that Moroccan consumers' behavior changed from using traditional purchasing channels to making more online purchases.

This paper updates the literature related to e-commerce in Morocco and takes into consideration the impact of Covid-19 on Moroccan consumers. Findings can assist companies to improve their online services and communicate their offers to Moroccan consumers in an improved and more personalized way. Additionally, highlighting the obstacles that hinder Moroccans to buy online could be of great help to managers and decision-makers to ease the way for customers to make their online purchases. On a broader scale, results can be beneficial for the development of the electronic economy within Morocco, a potential solution for the economic recovery following COVID-19, and in the context of a "Digital Morocco 2025" (The head of government, 2019).

Prior studies have investigated the impact of Covid-19 on the intention to adopt e-commerce (Gao et al., 2020; Habib & Hamadneh, 2021; Raza & Khan, 2021; Salem & Nor, 2020; Shahzad et al., 2020). In the Moroccan context, Nachit & Belhcen (2020) examined the digital transformation triggered by the Covid-19 outbreak. Housni et al. (2021) studied the change in consumer shopping behavior under the effect of Covid-19. El Bilali et al. (2021) observed the impact of Covid-19 on household food dynamics. Nonetheless, only a few studies explored the intention of customers to adopt e-commerce in the Covid-19 era (Ait Youssef et al., 2020).

The main objective of this research is to measure the intention of Moroccans to adopt e-commerce following the disturbances caused by the pandemic. To do so, it is essential to answer the following research questions:

- What are the factors of the technology acceptance model that affect the online purchasing intention of Moroccan consumers?
- What are the main determinants that led Moroccans to switch from traditional shopping channels to online shopping channels?

Therefore, this contribution aims to elucidate the effect of COVID-19 on the behavior of Moroccan consumers. More specifically, this paper investigates the determinants that positively/negatively influence consumers' intention to switch from using traditional purchasing channels to online ones.

This research is organized as follows. Section 2 introduces a brief literature review related to the topic. Section 3 develops the hypotheses of the paper and presents the conceptual

framework. Section 4 introduces the methods used to investigate the different hypotheses. Section 5 and 6 analyze the data, and present as well as discusses the results. Lastly, section 7 concludes the paper, presents the paper's underlying limitation, and provides a venue for future work.

2. Literature review and hypothesis development:

2.1. COVID-19 prevalence in Morocco

Morocco recorded its first Covid-19 case on 2nd March 2020. Shortly after the case was recorded, a state of emergency was declared within the Moroccan kingdom, which takes the necessary measures to limit the spread of the pandemic. The government proceeded to strengthen the health infrastructure, regulate the price of masks as well as increase their local production, and close schools and universities. This has led to the digitization of the educational system (Ministry of Economy and Finance, 2020).

Despite the primitive precautions and measures, COVID-19 had significantly impaired the living standards of Moroccan citizens and damaged businesses. The World Bank estimated a recession in the Moroccan economy (HCP, 2020b). For instance, 13 out of 24 sectors shut down in 2020 as stated by the Casablanca stock exchange (Casablanca Stock Exchange, 2020). On the other hand, some sectors benefited from the occurrence of the pandemic. For example, the telecom sector took advantage of the acceleration of digitalization within the economy and noticed massive growth (ANRT, 2020). Also, agri-food activities noticed a large demand. According to a study carried out by Attijari Global Research (2020), agribusiness benefited from the crisis and had an active role during the pandemic.

2.2. Consumer behavior and crises

Consumer behavior can be defined as the study of all the processes through individuals and groups go through when making a purchase decision to meet their needs (V. Sharma & Sonwalkar, 2013). It is undeniable that crises affect the purchasing behavior of consumers. A "new frugality" appears and a decline in consumption is expected to persist even after the economic recovery (Egol et al., 2010).

During periods of economic uncertainty, consumers' behavior becomes more thoughtful and reasoned (Euro RSCG C&O, 2009). For instance, consumer behavior becomes characterized by a need for simplicity, an increase in savings and recycling behaviors, and a temporary decrease in charitable action (Mansoor & Jalal, 2010; Paul & Michael, 2009).

2.3. Moroccans' behavior and the health crisis

COVID-19 caused major changes in consumer behavior in Morocco (Asmaa et al., 2021; Nachit & Belhcen, 2020) because of the increase in feelings of uncertainty, risk, and danger (Giraud-héraud et al., 2014). The extreme concern for the availability of merchandise and the closing of stores pre-lockdown has led to the emergence of panicking buying behaviors toward non-perishable products, protection, hygiene, and all necessities among Moroccan consumers (Ait Youssef et al., 2020; Asmaa et al., 2021).

After the pre-lockdown period, Moroccans adopted cocooning consumption during the lockdown (Qmichchou & El Haraoui, 2020). In other words, transform homes into a cocoon, or shelters, protected from external danger (Lehu, 2012). This search for security and comfort was reflected by the amplification of interest and purchases of goods and services related to cooking, entertainment, and culture in addition to the increase in social network usage (Asmaa et al., 2021; Soudi & Bouallala, 2020).

After deconfinement, some temporary behaviors linked to the pandemic gradually faded, giving way to more reasoned and thoughtful behaviors (Qmichchou & El Haraoui, 2020) while other behaviors continued and became part of the new normal. For instance, students became accustomed to distance learning and a new model of hybrid education emerged (HCP, 2020a), sales of online products and services boomed (Nachit & Belhcen, 2020; Zahraoui, 2021), and digital banking became a necessity (Amrani & Najab, 2020).

2.4. Digitalization accelerator in Morocco

The e-commerce sector in Morocco reached its highest peak during the pandemic (Asmaa et al., 2021; CMI, 2020). A significant number of Moroccans started to shop online due to the health crisis, which includes clothing purchases. However, several questions arise about the duration of the online shopping trend in Morocco, which urges backtracking to best understand and predict the evolution of the post-COVID e-commerce industry.
In 2003, SARS-CoV have spread from China to 26 other countries (Wilder-Smith & Freedman, 2020). Exposed countries have placed themselves in quarantine resulting in a negative impact on their corresponding economies (Keogh-Brown & Smith, 2008). Nevertheless, the pandemic has been an opportunity for the development of today's e-commerce giants like Alibaba and JD.com in China, and Park 'N Shop in Hong Kong (Chan et al., 2018; Forster & Tang, 2005). Consistently, the current pandemic could be beneficial to the domestic Moroccan e-commerce sector. Several experts anticipate that the new normal will be more technology-driven (Anderson et al., 2021). Hence, the current study might have great added value for e-commerce stakeholders and the digital economy as part of a "Digital Morocco 2025" (The head of government, 2019). The purpose of the research is thus to estimate online purchase intention and to elucidate the determinants that push or hinder Moroccan consumers in front of online stores.

2.5. Theoretical foundation and purchase intention

During the last decade, the theory of planned behavior (TPB) and the technology acceptance model (TAM) were two models widely used to assess the use of electronic services and information technology (Hsu et al., 2012; Hsu & Lu, 2004). However, neither model can consistently provide a superior explanation or prediction of the behavior (Liao et al., 2007). An increasing number of researchers have been using an integration of the two complementary models as their results have better exploratory power than the individual use of one of the two (Yang & Su, 2017; Yu et al., 2018). Consequently, the integration of the two models TAM and TPB is proposed in this study.
In the context of e-commerce, the intention to purchase online is linked to the consumer's intention to make purchases via an online source (Chen & Barnes, 2007). In contrast to actual purchase behavior, purchasing intention is more often used as a proxy variable in the marketing literature for its easiness to measure and predict purchasing behavior (Morales et al., 2017; Petter & McLean, 2009). Prior contributions indicate that the more favorable the intention, the more the consumer is inclined to perform a specific behavior (Raab et al., 2018; Sharma & Sharma, 2019). Thus, this study seeks to predict the intention to use e-commerce by Moroccans in the COVID-19 era.

3. Hypotheses development and conceptual framework

3.1. Hypotheses development

Perceived risk refers to a loss that is expected and subjective (Peter & Ryan, 1976) or the possibility of a loss when pursuing a certain desired outcome (Featherman & Pavlou, 2003). Many studies on technology adoption have linked the perceived risk to privacy risk, security

risk, social risk, or financial risk (Kuisma et al., 2007; Reavley, 2005). According to the health belief model, the perceived risk and perceived severity depend on individuals' subjective perception of a particular disease (Edward & Elaine, 2014). A high perceived risk of a given disease yields proactive behaviors to protect one's health (Yildirim et al., 2021). In the Moroccan context, almost one-third of the population self-isolated themselves before the announcement of the state of health emergency and were unanimous in adopting precautionary measures against COVID-19 (e.g., washing hands regularly, wearing masks, and social distancing) (HCP, 2020a).

In the context of this research, the perceived risk indicates the perception of individuals vis-à-vis the risks and dangers perceived in traditional purchases during the health crisis. When making a decision, these individuals are expected to opt for choices that involve the lowest risks (Sánchez-Cañizare, 2021). For instance, e-commerce is low risk compared to other traditional shopping methods during the pandemic. Hence, the perceived risk is assumed to have a significant positive impact on the intention to adopt e-commerce. Consistently, this research proposes the following hypothesis:

> **H1:** *Perceived risk during the pandemic has a positive effect on the intention to adopt online purchases among Moroccan consumers.*

Trust can be defined as the vulnerability against certain parties that are expected to meet some desired expectations through specific actions (Schoorman et al., 2007). Trust is a decisive factor when making decisions that involve risk (Grabner-Kräuter & Faullant, 2008). Regarding online shopping, e-commerce can be perceived as a risk because of the lack of direct interaction and contact with staff (Mosunmola et al., 2019). Furthermore, the literature revealed that the need for trust is more present in online interfaces compared to face-to-face interactions (Grabner-Kräuter & Faullant, 2008; Jouda, 2020). It serves as a type of mental and psychological guarantee to assure the customer when purchasing online (Featherman & Pavlou, 2003). A meta-analysis by Kim and Peterson (2017) confirmed the impact of trust in B2C e-commerce, a determinant that is more primordial than price when shopping online.

In this research, trust in e-commerce refers to the level of confidence in the security of payments online, the satisfaction of expectations, and the reliability of the websites. It is therefore expected that trust has a positive impact on the intention to buy online during the pandemic in Morocco. In other words, the higher the confidence in online shopping platforms, the greater the intention of Moroccan consumers to use them. Hence, the following hypothesis can be proposed:

> **H2:** *Trust has a positive effect on consumer intention to adopt online shopping in Morocco during the health crisis.*

With regards to subjective norms, they refer to an individual's perception of the social pressure to either accept or deny a certain behavior (Ajzen, 1991). It represents the influence of one's surroundings such as family members, colleagues, or friends. The higher the impact of surroundings, the more likely the intention of the individual to act in the desired direction (Ajzen, 2011). Additionally, the literature shows a positive link between subjective norms and behavioral intentions (Gao et al., 2018). In the case of e-commerce, various studies claim that subjective norms are a crucial antecedent of behavioral intention (Gangwal & Bansal, 2016; Lin, 2007; Pavlou & Chai, 2002).

In this contribution, subjective norms are linked to the social pressures and perceptions of others toward online shopping. If social expectations are inclined toward the use of online shops to make purchases during Covid-19, the consumer is more likely to act accordingly. Therefore, it is hypothesized that:

H3: *Subjective norms positively influence the intention of Moroccans to adopt online shopping during the pandemic.*

Perceived behavioral control determines the individual's evaluation of their efficacy and perceived abilities to be in control when performing a specific behavior (Ajzen, 1991; Maydeu-Olivares et al., 2017). It designates the perceived control over a behavior's performance (Ajzen, 2002). By decreasing the perception of risk, perceived behavioral control increases the perception of safety (Ajzen, 2011). Furthermore, prior studies highlighted the impact of perceived behavioral control on consumer intentions (Sun & Schuckert, 2020), and on consumers' behavior toward e-commerce (Pavlou & Chai, 2002). A positive attitude towards perceived behavioral control is achieved when the individual becomes confident in purchasing online (George, 2004).

Considering the context of the present study, perceived behavioral control refers to the individual's assessment of self-efficacy and perceived ability to control when shopping online. The sense of control over behavior increases engagement with e-commerce. In this context, consumers in Morocco are expected to embrace e-commerce when they realize they have the control and confidence to purchase online. Thus, the following hypothesis can be suggested:

H4: *Perceived behavioral control has a positive influence on the intention of Moroccan consumers to adopt e-commerce.*

For the perceived ease of use, it indicates the extent to which an individual believes that adopting a certain system would be considered effortless (Davis, 1989). According to the TAM, the acceptance of a given technology is related to subjective perceptions and beliefs of the person, namely the degree of perceived ease of use, which is a measure of the personal assessment of the user on the potential mental effort needed to use that technology (Davis et al., 1992). The mental effort required to use a system is strongly associated with the behavior of its adoption. Consistently, a user interface that is perceived as complex and requiring actual learning is considered risky to use (Opia, 2008). In addition, several studies confirmed the presence of a positive relationship between perceived ease of use and the intention to accept a particular technology (Al-Maroof et al., 2020; Do et al., 2019; Miandari et al., 2021).

In this research, the perceived ease of use represents the degree to which a person perceives using e-commerce as effortless. It is expected that consumers in Morocco will take advantage of online shopping websites and platforms if they judge that buying online does not require massive mental effort. The following hypothesis can be formulated:

H5: *Perceived ease of use has a positive effect on the intention to adopt e-commerce by Moroccan consumers during the health crisis.*

Perceived usefulness refers to the level to which a person believes that using a particular system will enhance their performance (Davis et al., 1992). It is an inherent determinant of technology adoption (Rahmayanti et al., 2021). It implies the extent to which the online buyer perceives technology as useful (Davis et al., 1992). In the context of COVID-19, perceived usefulness denotes the level to which users believe that the use of e-commerce will improve their security performance and efficiency in contrast to traditional shopping. Many studies have confirmed the link between perceived usefulness and the adoption of information systems like e-commerce (Priya et al., 2018; Sharma & Sharma, 2019).

Accordingly, it is expected that Moroccan online shoppers perceive the use of e-commerce as advantageous before making their purchases. Hence, the following hypothesis can be suggested:

H6: *Perceived usefulness of e-commerce has a positive impact on the intention to adopt online purchases among Moroccan consumers during the pandemic.*

4. Data and methodology

4.1. Conceptual model

This paper suggests a conceptual model that combines both the TAM (Davis, 1989) and the TPB (Ajzen, 1991) as illustrated in figure 1. To note, Notentribution takes into consideration the psychological aspect of the participants. During the pandemic, social interactions presented a real danger (e.g., Transmission of the virus), which led to a change in certain consumer behaviors (Kurzban & Leary, 2001; Park et al., 2003). Additionally, trust was shown to be a crucial determinant of e-commerce adoption (Gefen et al., 2003; Urbach et al., 2010). Consistently, perceived risk and trust were added to the research model. All constructs are defined in Table 1.

Table 1: Constructs, definitions, and sources

Constructs	Definitions
Perceived risk	The potential loss when pursuing a specific desired result (Featherman & Pavlou, 2003)
Trust	The vulnerability against specific parties that are expected to achieve some specific actions to meet desired expectations (Schoorman et al., 2007)
Subjective norms	Individual's perception of the social pressure to choose whether to deny or accept a behavior (Ajzen, 1991)
Perceived behavioral control	The control perceived over the performance of behavior (Ajzen, 2002)
Perceived ease of use	The degree of effort perceived by an individual to adopt a certain system (Davis, 1989)
Perceived usefulness	The extent to which an individual believes that using a system will improve their performance (Davis et al., 1992)
Intention to purchase	The level to which an individual is willing to purchase a product online (Pavlou, 2003)

Source: Authors

Figure 1: The research model proposed
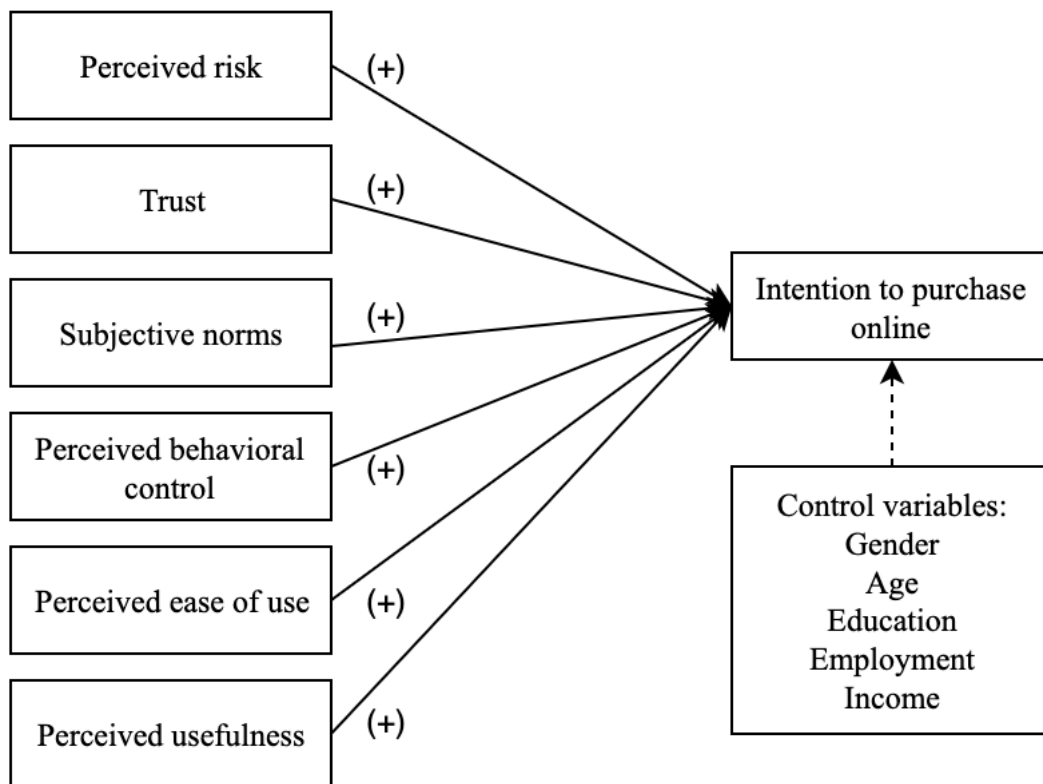
4.2. Procedures

In Morocco, Facebook users exceeded 19 million users (52.5% of the Moroccan population) in 2020, and Instagram users were almost 5 million (12.7%) (Napoleon Cat, 2020). This growth in social media uses motivated the sample selection of customers in Morocco to test the model as a developing country proxy. A pretest of the questionnaire was run to verify the clarity and effectiveness of the questions. A small group of individuals with distinct language skills and backgrounds was selected to provide feedback and propositions in case of unclear questions. The analysis did not include any data gathered from the pilot study.

The present study followed a method of non-probability sampling that included snowball and self-selecting sampling for practical purposes. Due to the lockdown, an online version of the questionnaire was administered to Facebook users who expressed their desire to be part of the research as a voluntary method for selection (Saunders et al., 2012). The questionnaire was also shared with contacts on WhatsApp who were asked to fill in the survey and share it with others. The questionnaire was distributed for two months (May and June 2021), and a total of 306 responses were collected, where only 296 ones deemed valid.

4.3. Measures

The constructs of the present study were retrieved from previous literature and lightly modified (see appendix). The items and scales of the online questionnaire were distributed in French, the most commonly used language in the Moroccan kingdom (Benzakour, 2007). Items were translated from English to French following the method of back-translation (Brislin, 1986).

To measure the variables of this study, a five-point scale was used by respondents to assess different statements that ranged from 1 to 5 (from strongly disagree to strongly agree). The constructs and their related items are presented in the Appendix. Lastly, the questionnaire also included demographic questions (i.e., gender, age, education, job, income) and includes a filter question to ensure the use of Moroccan respondents only.

5. Results

As Table 1 shows, the sample observed constitutes 36.81% male and 64.19% female. 45.95% of respondents were aged between 18-24 years old (45.95%), followed by 25-34 years old (32.09%), and 35-44 years old (10.14%). Most respondents had a master's degree (43.24%), an undergraduate degree (39.19%), or a doctorate (12.16%). 51.01% of the sample were students and 36.49% were employees. Regarding income, 39.19% earned less than 1,000 MAD, 21.96% earned between 1,000-5,000 MAD, and 17.23 earned between 5,001-10,000 MAD. The subsections below evaluate the construct reliability, the convergent validity, the discriminant validity, and the structural model.

Table 2: Profile of the questionnaire respondents

Measure	Item	N	Percentage (%)	Measure	Item	N	Percentage (%)
Gender	Male	106	35.81	Job	Employee	108	36.49
	Female	190	64.19		Self-employed	19	6.42
					Student	151	51.01
Age	Less than 18	5	1.69		Looking for a job	18	6.08
	18-24	136	45.95				
					Less than 1,000		
	25-34	95	32.09	Income	MAD	116	39.19
	35-44	30	10.14		1,000-5,000 MAD	65	21.96
	45-54	20	6.76		5,001-10,000 MAD	51	17.23
	More than 55	10	3.38		10,001-15,000 MAD	29	9.80
					15,001-20,000 MAD	18	6.08
					More than 20,000		
Education	High school	14	4.73		MAD	17	5.74
	Undergraduate	116	39.19				
	Master	128	43.24	Moroccan	Yes	295	99.66
	Doctorate	36	12.16		No	1	0.34
	Other	2	0.68				

Source: Authors

5.1. Measurement of the model

The proposed conceptual model was assessed using structural equation modeling with SMART-PLS. As shown in Table 2, the reliability of the constructs used is verified since Cronbach's Alpha and Composite Reliability exceed the threshold of 0.7 (Henseler et al., 2009). The Average Variance Extracted is above 0.5 in all constructs which ensures convergent validity as illustrated in Table 2 (Hair et al., 2010). For all items, the loadings exceed 0.7 (Table 2), implying the achievement of the indicator reliability (Hensler et al., 2009).

Table 3: Descriptive statistics and convergent reliability and validity

Constructs	SD	CA	CR	AVE
Perceived risk	0.52	0.81	0.89	0.73
Trust	0.59	0.73	0.85	0.65
Subjective norms	0.54	0.79	0.88	0.71
Perceived behavioral control	0.58	0.74	0.85	0.65
Perceived ease of use	0.5	0.83	0.90	0.75
Perceived usefulness	0.57	0.75	0.86	0.67

***Notes :** SD: Standard Deviation; CR: Composite Reliability; AVE: Average Extracted Variance; CA: Cronbach's Alpha*

As for the discriminant validity, it was assessed based on three criteria. The root square of the AVE of every latent variable exceeds its correlation with other latent variables (Table 3), thus achieving the first criterion of Fornell-Larcker (Fornell & Larcker, 1981). In addition, each indicator in the sample has a loading higher than all its cross-loadings, verifying the second criterion as shown in Table 4 (Chin, 1998). The last criterion of the Hetrotrait-Monotrait ratio (HTMT) is also achieved since all its resulting values are under the threshold of 0.9, as represented in the Appendix (Henseler et al., 2015). The outcomes of the measurement model assessment are satisfactory, thereby the following section will use all the constructs to test the model.

Table 4: Correlations and AV

	Perceived risk	Trust	Subjective norms	Perceived behavioral control	Perceived ease of use	Perceived usefulness
Perceived risk	0.85					
Trust	0.46	0.81				
Subjective norms	0.45	0.45	0.84			
Perceived behavioral control	0.77	0.50	0.48	0.81		
Perceived ease of use	0.50	0.57	0.71	0.50	0.87	
Perceived usefulness	0.42	0.63	0.43	0.44	0.52	0.82

Source: Authors

Table 5: Cross-loadings

	Perceived risk	Trust	Subjective norms	Perceived behavioral control	Perceived ease of use	Perceived usefulness
RISK1	*0.86*	0.35	0.34	0.65	0.40	0.31
TRU1	0.38	*0.82*	0.31	0.44	0.44	0.50
TRU2	0.35	*0.80*	0.38	0.42	0.48	0.58
TRU3	0.39	*0.80*	0.39	0.35	0.46	0.43
SUB1	0.28	0.33	*0.81*	0.32	0.52	0.32
SUB2	0.41	0.34	*0.86*	0.43	0.66	0.35
SUB3	0.43	0.45	*0.85*	0.45	0.60	0.41
BEH1	0.58	0.35	0.28	*0.72*	0.29	0.36
BEH2	0.61	0.37	0.35	*0.80*	0.37	0.27
BEH3	0.68	0.47	0.49	*0.89*	0.50	0.43
EAS1	0.42	0.41	0.62	0.42	*0.87*	0.42
EAS2	0.40	0.59	0.63	0.46	*0.87*	0.49
EAS3	0.49	0.47	0.59	0.41	*0.86*	0.43
USE1	0.36	0.49	0.33	0.39	0.39	*0.84*
USE2	0.29	0.59	0.43	0.33	0.50	*0.81*
USE3	0.39	0.45	0.28	0.36	0.37	*0.81*

Note: The constructs' loadings are represented in Italic, and are greater than their corresponding cross-loadings

Source: Authors

5.2. Assessment of the structural model

The evaluation of the structural model is conducted via R-squared (Hair et al., 2017). The present model displayed a value of 0.56, greater than 0.33, implying that constructs have a moderate predictive power (Chin, 1998). However, each additional variable increases the

coefficient of determination (Miles, 2005). The adjusted R-squared was calculated to correct this. It resulted in a value equal to 0.54 which indicates satisfactory outcomes.

Table 5 shows the tabulated results of the path analysis. Hypotheses H1 of perceived risk (β = 0.04; p > 0.05) and H2 of trust (β = 0.05; p > 0.05) are not statistically significant. Thereby, H1 and H2 are not supported to explain the intention to adopt online shopping during the health crisis. Subjective norms had a significant and positive impact on the intention to adopt e-commerce during the pandemic (β = 0.05; p > 0.05), supporting H3. In other words, Moroccan customers are likely to shop online if it is embraced by society. Nonetheless, perceived behavioral control had no significant effect on e-commerce adoption (β = 0.05; p > 0.05), thereby not supporting H4. Perceived ease of use has a positive and significant influence on the intention to shop online (β = 0.38; p < 0.01), approving H5. This is consistent with the idea that the intention to adopt e-commerce increases when Moroccan individuals perceive online shopping as effortless. Perceived usefulness had a positive and significant impact on the intention to adopt online shopping (β = 0.15; p < 0.05), supporting H6. Accordingly, when e-commerce is perceived as advantageous, individuals in Morocco are likely to shop online. Hence, all hypotheses were supported except H1, H,2, and H4.

Table 6: Path coefficients of each hypothesis

Hypothesis	Independent variables	→ Dependent variables	β	Std. Error	T-value	P-value	Decision
H1	Perceived risk	→ Intention to adopt e-commerce	0.04	0.05	0.75	0.45	Not supported
H2	Trust	→ Intention to adopt e-commerce	0.05	0.07	0.81	0.42	Not supported
H3	Subjective norms	→ Intention to adopt e-commerce	0.23	0.07	3.44	0.00	Supported**
H4	Perceived behavioral control	→ Intention to adopt e-commerce	0.05	0.05	0.92	0.36	Not supported
H5	Perceived ease of use	→ Intention to adopt e-commerce	0.38	0.07	5.40	0.00	Supported**
H6	Perceived usefulness	→ Intention to adopt e-commerce	0.15	0.06	2.53	0.01	Supported*

Note: Significant at p* < 0.05 and p** = < 0.01   *Source: Authors*

The results of the control variables are illustrated in Table 6. Gender and age had no significant impact on the intention to shop online during the pandemic in Morocco (β = 0.02; p > 0.05 and β = -0.08; p > 0.05, respectively). Education had a positive and significant effect on the intention to adopt e-commerce (β = 0.07; p < 0.05). Consistently, the higher the education of an individual, the higher his intention to shop online during the health crisis. Employment was also found to have a positive and significant impact on e-commerce adoption. Employed individuals are likely to shop online during the Covid-19 pandemic. Income had no significant impact on the intention to adopt online shopping in Morocco during the pandemic (β = 0.04; p > 0.05). Thus, among all the control variables tested in this study, education, and employment were supported.

Table 7: Path coefficients of the control variables

Control variables	→ Dependent variables	β	Std. Error	T-value	P-value
Gender	→ Intention to adopt e-commerce	0.02	0.04	0.55	0.58
Age	→ Intention to adopt e-commerce	-0.08	0.05	1.48	0.14
Education	→ Intention to adopt e-commerce	0.07	0.03	2.07	0.04*
Employment	→ Intention to adopt e-commerce	0.07	0.03	2.33	0.02*
Income	→ Intention to adopt e-commerce	0.04	0.05	0.87	0.38

Note: Significant at p* < 0.05 and p** = < 0.01   *Source: Authors*

6. Discussion

The present research aims to identify the determinants influencing the intention to adopt online purchases during the pandemic in Morocco. This study is relevant in the sense that e-commerce remains in its early stages and a gap exists in the literature related to online purchases in similar countries. This can be explained by the significant difference in the perception and maturity of e-commerce in developed markets in contrast to developing markets.

In Morocco, the pandemic caused online sales to soar, bringing numerous first-time users of online shopping. Consistently, investigating Moroccan consumers' intention to adopt e-commerce is crucial to advise decision-makers in introducing efficient strategies and business models for e-commerce interfaces, especially after the disturbances caused by COVID-19.

An integration of two theoretical models brought about a new comprehensive model. It was then adapted to current circumstances by including perceived risk, linked to the contamination of the virus, and trust, a key determinant of e-commerce adoption in Morocco (El Haraoui, 2016).

The findings of the present study stress that the intention to purchase online is positively and significantly influenced by subjective norms, which aligns with the results of Noor et al. (2020) and Ha & Thuy (2020). As a conservative country, individuals in Morocco are influenced by social pressure. The use of e-commerce can thus significantly increase if it is perceived as normal to use. Decision-makers can impact influential parties like family members, colleagues, or even influencers with the rise of social media marketing. The goal is to overcome the purchasing culture in Morocco that is still reluctant towards e-commerce (El Haraoui, 2016). Nonetheless, other studies found no significant influence of subjective norms on e-commerce adoption (Zhaohua et al., 2012), which can be explained by the differences in the culture of the studied countries.

Perceived ease of use was revealed to be a significant predictor of intention to shop online during the health crisis in Morocco. The easier the action of buying online is perceived to be, the greater the intention becomes. Although these findings contradict those of Luarn & Lin (2005), Salem & Nor (2020), and Jahanghir & Bengum (2008), they are consistent with the results of other studies carried out in Morocco during the COVID-19 (Ait Youssef et al., 2020). Consistently, simplifying e-commerce websites can increase the number of online shoppers. Moroccan customers are prone to purchase online when the interface is perceived as user-friendly and easy to use.

Perceived usefulness is the last antecedent of online buying intention in Morocco during the pandemic. E-commerce is advantageous for making purchases with better performance and higher efficiency. Moroccan users perceive it as a tool to access more options and choices and to compare products between different suppliers. Accordingly, the higher the perceived usefulness, the greater the behavioral intention of Moroccan customers to shop online during the health crisis. It provides a safer alternative to performing different purchase transactions without the risk of a COVID-19 infection.

Perceived risk was found to have no significant impact on the intention to adopt e-commerce during the pandemic. These findings align with the study of Salem & Nor (2020). This can be due to the gradual improvement of the COVID-19 situation and the increasing number of vaccinated individuals in Morocco. It can also be explained by the fact that online shopping can be risker because of potential money frauds.

Trust is not a significant predictor of intention to purchase online during the pandemic. Prior studies explained that trust can impact the intention to buy online when it has an indirect effect. Trust has a positive effect on the attitude toward customers' online shopping, which can then indirectly impact the final intention to adopt electronic storefronts (Breward et al., 2017; Chetioui et al., 2020).

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Perceived behavioral control was revealed to have no significant impact on Moroccan's intention to shop online during COVID-19, which contradicts the findings of Noor et al. (2020), Hatice (2018), and Ha & Thuy (2020). This might be due to the level of education of the questionnaire respondents, the majority of whom have a bachelor's or a master's degree. Thereby, they do not perceive any difficulty in feeling in control when shopping online.

The study also revealed that employment status and the level of education exert a significant and positive influence on the intention to buy online among Moroccans. The level of education generally represents one obstacle among others that hinder the spread of e-commerce use, particularly in developing countries (Alam et al., 2011; Lawrence & Usman, 2010; Valarezo et al., 2018). Nonetheless, other control variables like gender, age, and income have no significant impact on Moroccans' intention to purchase online during the pandemic.

7.   Conclusion and implications

The COVID-19 pandemic was described as a digitalization accelerator across the globe. Although many businesses have suffered from the health crisis, online retailers have made a lot of profit. In Morocco, the number of online shoppers during lockdown has soared reaching unprecedented sales volume, a trend that is expected to last even after recovery. The discussion above highlights the relevance and importance of the present research. It aims to understand the key predictors of Moroccans' intention to adopt e-commerce during the pandemic. It presents crucial theoretical and practical contributions in the consumer behavior field.

The results of the present study provide some major theoretical contributions. First, many earlier studies were done before the prevalence of COVID-19. This study takes into consideration the constraints caused by the health crisis and the resulting consequences when conceptualizing the model to measure the intention to adopt online purchases in Morocco. Second, the integration of the two complementary theoretical models, TBP and TAM, has never been done to assess the intention to adopt e-commerce in the Moroccan context. This research extends prior findings by proposing a comprehensive research model that has been extended to account for other relevant variables from the literature. Finally, the present research presents a response to calls from researchers to carry out further investigation and enrich the literature concerning the factors of adoption of online purchases by consumers, especially from emerging markets (Abdul R et al., 2014; Al-Maghrabi et al., 2011; Aladwani, 2006).

The next revelation would undoubtedly be digital (Anderson et al., 2021). Morocco is constantly deploying efforts and establishing digital strategies, the most recent is "Digital Morocco 2025" (The head of government, 2019). In this context, the contributions of this study may be useful for various stakeholders. The findings of this research are beneficial for companies. Knowing the factors influencing the intention to adopt e-commerce will allow businesses to adapt the offer to Moroccan consumers, with their characteristics, culture, values, habits, and perceptions. Companies should focus more on subjective norms. Moroccans' use of e-shopping will likely increase once it is perceived as a norm. In addition. The digital purchasing interface must be simplified and facilitated due to the strong impact of perceived ease of use and perceived usefulness on the intention to purchase online during the pandemic. Users should perceive neither difficulties nor obstacles when visiting online websites. Moreover, launching advertising campaigns that communicate the ease of the online shopping process can have a beneficial return on business profit.

As for decision-makers, the results of the study can pave the way for the acceleration of e-commerce and digitalization in Morocco. According to the findings of the study, employment and education have a positive impact on the intention to shop online. Increasing the rate of schooling and accessibility to the necessary equipment (i.e., Internet, mobile, computer) will likely boost the number of e-commerce use in Morocco. Furthermore, increasing online

shopping sales can be a means for economic recovery and the development of the Moroccan digital economy, a strategic advantage to be exploited within the country.

Even though this study is one of the few to examine the intention to buy online in Morocco during the health crisis, it has limitations that can be addressed in future studies. This research extends two theoretical models to assess the intention of consumers in Morocco to purchase online during the pandemic. However, the proposed model did not include any moderating or mediating variables which could increase the predictive power of the model and further elucidate direct and indirect relationships related to intention. In addition, most of the participants have a high level of education, namely a Bachelor's or Master's, which does not reflect the level of education in Morocco. Thereby, the results cannot be generalized to the entire population.

Future researchers are advised to explore mediating or moderating effects related to the topic and to use a more diversified random sample to be able to draw conclusions that could be generalized amongst Moroccan consumers. Furthermore, it is recommended to specify the survey to an e-commerce system to derive more meaningful and specific results. Lastly, the cases of contamination by the coronavirus are gradually decreasing thanks to the precautionary measures introduced and the launch of the vaccination campaign against COVID-19. Consumer behavior will therefore continue to change over time. Future research can follow the evolution of e-commerce adoption intention and update the model according to future circumstances in Morocco.

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Appendix

Table A.1

Constructs	Items	Factor loading
Perceived risk	RISK1	0.86
Trust	TRU1	0.82
	TRU2	0.80
	TRU3	0.80
Subjective norms	SUB1	0.81
	SUB2	0.86
	SUB3	0.85
Perceived behavioral control	BEH1	0.72
	BEH2	0.80
	BEH3	0.89
Perceived ease of use	EAS1	0.87
	EAS2	0.87
	EAS3	0.86
Perceived usefulness	USE1	0.84
	USE2	0.81
	USE3	0.81

Source: Authors

Table A.2

	Perceived risk	Trust	Subjective norms	Perceived behavioral control	Perceived ease of use	Perceived usefulness
Perceived risk						
Trust	0,59					
Subjective norms	0,55	0,58				
Perceived behavioral control	0,99	0,67	0,59			
Perceived ease of use	0,60	0,72	0,87	0,60		
Perceived usefulness	0,54	0,83	0,54	0,58	0,64	

Source: Authors

Table A.3

Constructs	Items	Sources
Perceived risk	Online shopping lowers the risk of infection by COVID-19	Hansen et al. (2018)
Trust	I think online shopping is reliable Online shopping meets my expectations I believe that online transactions are secure	Constantinides et al. (2010)
Subjective norms	In my surroundings, it is normal to use online shopping The people around me have shopped online during the pandemic According to me, online shopping is a norm, especially during the pandemic	Wu & Chen (2005)
Perceived behavioral control	I'm capable to shop online I feel comfortable buying things over the internet on my own I think I have the resources and the knowledge to shop online	Wu & Chen (2005)
Perceived ease of use	I can easily buy anything I want online I can easily compare products in online shopping Shopping online provides more options/choices	Cheng et al. (2006)
Perceived usefulness	Traditional shopping is stressful because of the social distancing I think it's safer to shop online during the pandemic It's more convenient to shop online during a lockdown	Cheng et al. (2006)
Intention to purchase online	I plan to shop online in the future Because of the pandemic, I'm willing to shop online I usually recommend a good online store to my family and friends	Cheng et al. (2006)

Source: Authors