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THE IMPACT OF COVID-19 ON THE USE OF ONLINE SHOPPING: TECHNOLOGY ACCEPTANCE MODEL

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ABSTRACT

The spread of the Covid-19 pandemic and the development of new technologies and the web advent leds to understand and explain the actual individual behavior.

The technology acceptance model proposed by Davis in 1989 has been a theory that is most widely used to explain and examine the individual's acceptance of technology. This study has reviewed numerous literatures available in this area. The different studies in this area were evaluated to understand the modifications that were done on this model.

Our littérature review highlights the direct and indirect influence of the barrier measures put inplace by the WHO on the behavior of consumers faced with the digitalization of the retail stores.Following a quantitative study, this wors aims to examine the impacts of the acceptance technology on the purchase intent to use internet.

It also underlines the interest in managers in the modern distribution sector to take into consideration changes in personal factors such as the brakes and motivations of consumers towards the use of online shopping.

***Key words**: consumer behavior, technology, digital, on-line shopping, retail stores.*

INTRODUCTION

Since its appearance in November 2019 in the city of Wuhan, the Covid-19 pandemic has beenin full spread and has destabilized the whole world. All sectors of activity have been affected directly or indirectly and are now required to rethink their development model in view of the current circumstances.

Coronavirus has led to enormous changes in the perspective of adaptation and survival on the part of several companies across the globe. Morocco is obviously no exception, and since March, the authorities began to take matters into their own hands and decreed 2 weeks later a state of emergency health and quarantine for the whole kingdom. This has led the managementof organizations to adopt new techniques to avoid the suspension and termination of their activity, the solution towards which everyone has been redirected being the integration of digitaland digital tools in their daily way of working, through teleworking.

Companies were not the only ones to favor the digital solution to adapt to this extreme and extraordinary situation, households also opted for this resource which was made available to them long before this pandemic, but which had not then the same attraction as now for some. Indeed, digital has become a facilitating means allowing consumers to co-create their own experience and thus enhance it by controlling it down to the last detail.

This research aims to study the impact of the Covid-19 pandemic on consumer behavior, mainlyin the face of the use of the online purchase tool for consumer products while highlighting the obstacles and motivations of the Moroccan consumer facing the adoption of this digital technology. The results of the questionnaire will thus make it possible to provide operators of large-scale distribution in Morocco with clarifications on the unconventional levers favoring the act of online purchasing during the Covid-19 and post-Covid-19 period.

This paper is structured as follows: the first part situates digital in the mass distribution / consumption sector and then proposes a theoretical framework of reference to understand consumer behavior in the face of this technology prior to the Covid-19 pandemic, this part willalso present the theoretical framework following research carried out on the impact of pandemics on consumer behavior throughout history.

A second part details the quantitative analysis put in place to assess the impact of Covid-19 onconsumer behavior in the context of online purchases. The discussion of the results will make it possible to make recommendations to distribution professionals.

CONCEPTUAL APPROACHES

1.1. DIGITAL AND MASS DISTRIBUTION

Several fields of activity have had recourse to new technologies in order to develop and improvetheir process and work process, we find in the first-place medicine which has taken advantage

of technological progress, education, design industries. and assembly, as well as the entertainment sector (Pantano and Tavernise, 2009; Cutrı et al., 2008).

Modern commerce has also seen the opportunity represented by the integration of these technological tools in its sales process, which has given rise to electronic commerce.

When it started, online commerce was often assimilated to multi-channel. The idea being to develop new virtual points of contact / sale in addition to the physical points of sale which for decades has been able to evolve and adapt to consumer needs, taking into account the cognitive and hedonistic aspects of the consumption experience (Holbrook and Hirshman, 1982).

Then, several strategies have been deployed and used, starting from the diffusion of backgroundmusic (Yalch and Spangenberg, 1990), room fragrances (inside and outside the store) (Spangenberg et al. al., 2005) as well as the intensity and type of lighting (Summers and Hebert,2001), etc.

The stages of the online purchasing process are the same as those of purchasing in a store, the best known model is that of the 5 stages of Engel, Blackwell and Kollat developed in 1968 (Engel et alii, 1990), and which remains to this day the model which has the most impact on the theory of consumer behavior.This model reflects the realization of an online or offline purchase as follows: Awareness of the need, Information research, Option evaluation, Purchasedecision, Post-purchase analysis.

What characterizes and differentiates online shopping from in-store shopping is above all relating to the contribution of advanced technologies and the changes they bring at each stage of the process, but also to consumer behavior in the end, two fields of study that were separatedfor a very long time. The literature dealing with the theme of applications of new technologiesto retailing is only interested in one technology at a time (Ha and Stoel, 2009), several researchers have also focused on the electronic commerce sector. (Pavlou 2003; Yoon 2009; Wu and Wang 2005).

According to a study carried out by Google in 2016, point-of-sale traffic decreased by 57% between 2010 and 2015, and at the same time the value of each visit has almost tripled, whichtranslates into the fact that Consumers are now increasingly browsing and researching the Internet and only travel to make a purchase.

Most of the previous researches carried out on consumers and which is based on the advent ofnew technologies, has focused on the introduction of advanced technologies and its impact on the total quality of service perceived through the co-production of the service, as proposed by Fischer and al. Other research has focused more on the acceptance of new technologies by consumers in the retail trade given the growing number of digital tools on the market (Pantanoand Servidio 2012), a focus was made on electronic commerce and online services (Han and Jin 2009; Ha and Stoel 2009; Hernandez et al. 2010; Shen and Chiou 2010; Udo et al. 2010; Wu 2010).

The advent of electronic commerce has brought about two transformations: the conversion of the consumer into a user of technology and the transformation of the store into a virtual point of sale or website (Koufaris et alii, 2002).

1.2. COVID-19 AND MASS DISTRIBUTION

The Covid-19 pandemic has upset the world economy, with it several types of companies havehad to adapt to the new hygiene measures imposed by the WHO to protect the population and limit the spread of the virus. The small retailers who represented 92% of the turnover of the distribution sector in Morocco in 2015 (The Economist, May 3; 2018) were forced to temporarily close their stores, which offered the opportunity the modern distribution market torecruit more customers by using digital tools and investing in the online sale of their consumerproducts.

The point is that the danger of the virus was seen at the very beginning as only a public health crisis, but its effect on the country, the economy and the society was soon noticed, and this reversal of the situation is without. precedent for many companies who must not only comply with the rules put in place by the State and health organizations but also to the changes broughtabout by these drastic measures such as social distancing on consumer behavior, which for thisreason turned to the e-commerce solution.

According to an analysis carried out by MoEngage, the purchasing behavior of customers is influenced by the quarantine and closure of borders which would have caused a stock shortageat the point of sale of certain consumer products, which would have redirected the customer towards the option of online purchase of products essential to his survival. MoEngage. (2020).

This increase in the use of online retail applications and platforms was strongly noticed from the first weeks of March, which marked the start of lockouts in several countries around the world (Jebril, N. (2020). World Health Organization declared a pandemic public health threat:A systematic review of the "COVID-19", up to 26th March 2020.) This momentum observed during the month of March 2020, is due not only to the increase in the frequency of use of the number of active customers but also the addition of new customers. (Pymnts. (2020). Can e- commerce Overcome COVID-19?)

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1.4. CONSUMER BEHAVIOR AND E-COMMERCE

With the advent of the internet and new technologies, traditional consumer behavior has undergone enormous changes. Partly due to the differences in electronic commerce, namely theease of collecting and processing information, the nature of remote and impersonal from the online environment, which sometimes leads to uncertainty related to products and identity (Lee,1998; Ba and Pavlou, 2002), given the space-time gap between consumers and merchants whichincreases the fears of opportunism among web retailers.

Several researchers have been interested in consumer behavior when using B2C e-commerce, and several models have served as a basis for research on online consumer behavior, such as: the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975), Technology Acceptance Model

(TAM) (Davis, 1986), Planned Behavior Theory (TCP) (Ajzen, 1991), Decomposed Theory ofPlanned Behavior, Theory of Interpersonal Behavior, diffusion theory of innovations (Rogers,1962), and the unified theory of acceptance and use of technology (UTAUT) (Venkatesh, et al.,2003).

According to reasoned theory (Fishbein and Azjen, 1975) and its extension to the theory of planned behavior (Azjen, 1985), behavior is often determined by the individual's intention to adopt such behavior. This intention to act is guided by the attitude of the individual, which in turn depends on beliefs. Based on this sequential flow, Davis (1989) proposed a Technology Acceptance Model (MAT). Its objective is to predict the intention to use the technology by theindividual. According to this model, intention determines and explains behavior and is explained by attitude, which depends on beliefs specific to the information technology context.These beliefs can be summed up in two factors; namely: the perception of usefulness and the perception of ease of use. In addition, perceived utility represents the extent to which an individual believes that the use of a technological tool can increase his performance in the taskhe intends to perform (at work, for example) (Davis, 1989). Perceived ease of use reflects the degree to which a potential user expects a minimum of effort to use a technological tool (Davis,1989).

This model is specially designed to apply to behaviors regarding computer use (Davis, Bagozzi& Warshaw, 1989). It represents one of the explanatory models that have most influenced the theories of human behavior (Venkatech, Morris, Davis, 2003). It is inspired by the reasoned action model of Fishbein and Azjen (1975). It has been the subject of several studies and research in different contexts of use. The results of this research testify to its parsimony (Agrawal and Prasad, 1999), its robustness (Venkatesh and Morris, 2000), its validity (Hernandez and Mazzon, 2007) and its ability to adapt to different technological contexts, in particular in marketing and online shopping (Stern & al. 2008; McKechnie Winklhofer, and Ennew, 2006; Guriting and Ndubisi 2006; Cheng, Lam, and Yeung, 2006).

According to this model, perceived ease of use plays a dual role: a direct effect on attitude, andon perceived utility. Utility is viewed favorably when the effort required for its use is low (Davis, 1989). These two variables - ease of use and usefulness - are the main determinants ofattitude, intention to use and actual use behavior (Davis, 1989). TAM advocates that only perceived utility has a direct effect on behavioral intention, ease of use has an indirect effect via attitude.

From the original TAM model, Venkatesh and Davis (2000) removed the construct “Attitude”
and tried to make a direct link between ease of use, perceived utility and intention to use.

The TAM model (Davis, 1989) has been the subject of several criticisms. Among these criticisms, we note, mainly, that the key concepts of the model remain insufficient to predict the intention of use and that other equally powerful and significant variables should be integrated into the model. Many researchers are interested in TAM, several have proposed extensions such as TAM2, TAM3, etc….

However, several researchers are still inspired by the classic model while adapting it to the context of the study and integrating the impact of antecedents of behavioral beliefs (Pavlou, 2003; Venkatesh, 2000; Lederer & al., 2000; Venkatesh and Davis, 2000).

The research model designed for this study is mainly based on the TAM 3 version proposed byVenkatesh and Davis (2000). The choice of this model is based on its great explanatory powerfor the intention to use the technology and the actual usage behavior. The TAM 3 uses five determinants of usefulness of use, namely: subjective norms, image, importance of the job, quality of output and demonstrability of the result.

This model also groups the history of ease of use into two categories: anchors and fits. Anchorsplay a critical role in shaping the perception of usability and the constructs used are:

- Self-efficacy: refers to an individual's perception of their capacities and abilities to use technology;
- External control: represented by facilitating conditions and tries to capture aspectsrelated to knowledge and available resources;
- Intrinsic motivation (computer playfulness) representing the perception of the pleasure and satisfaction of using a technology;
- Computer anxiety, which is related to a person's general perceptions of computers andis a negative affective reaction to the use of computers.

As for the adjustments, they result from the interaction between the system and the user. Theywill add influence on the perception of ease of use as the process of use progresses and are represented by the perception of the fun of working with ("perceived enjoyment") and the objective possibility of use.

THEORETICAL MODEL OF THE STUDY

The model developed in this study is based on a construct determining usefulness of use, namelysubjective norms and on two determining anchors of ease of use, namely: external control andintrinsic motivation. (Figure 1).

The types of variables used in the study model are:

- Dependent variables;
- Independent variables.

a- *Dependent variables:*

In the case of our study, the question of the identification of the dependent variable was quicklyraised. The phenomenon to be measured remains the intention of use and the actual use of the purchase on the internet (behavioral dependent variables).

b- *Independent variables:*

The variables that may explain intention to use and actual behavior are perceived utility andease of use, subjective norms, external control, and intrinsic motivation.

- The hypotheses of the study:

H1: Subjective norms positively influence the perceived usefulness of buying on the internet.H2: External control positively influences the ease of use of internet shopping.
H3: Intrinsic motivation positively influences the ease of use of internet shopping.
H4: Ease of use has a positive influence on the perceived usefulness of purchasing on theinternet.
H5: Subjective norms positively influence the intention to use the internet purchase.H6: Perceived utility positively influences the intention to use the Internet purchase.
H7: Ease of use has a positive influence on the intention to use when shopping on the internet.H8: Intent to use positively influences the actual usage behavior of internet purchases.

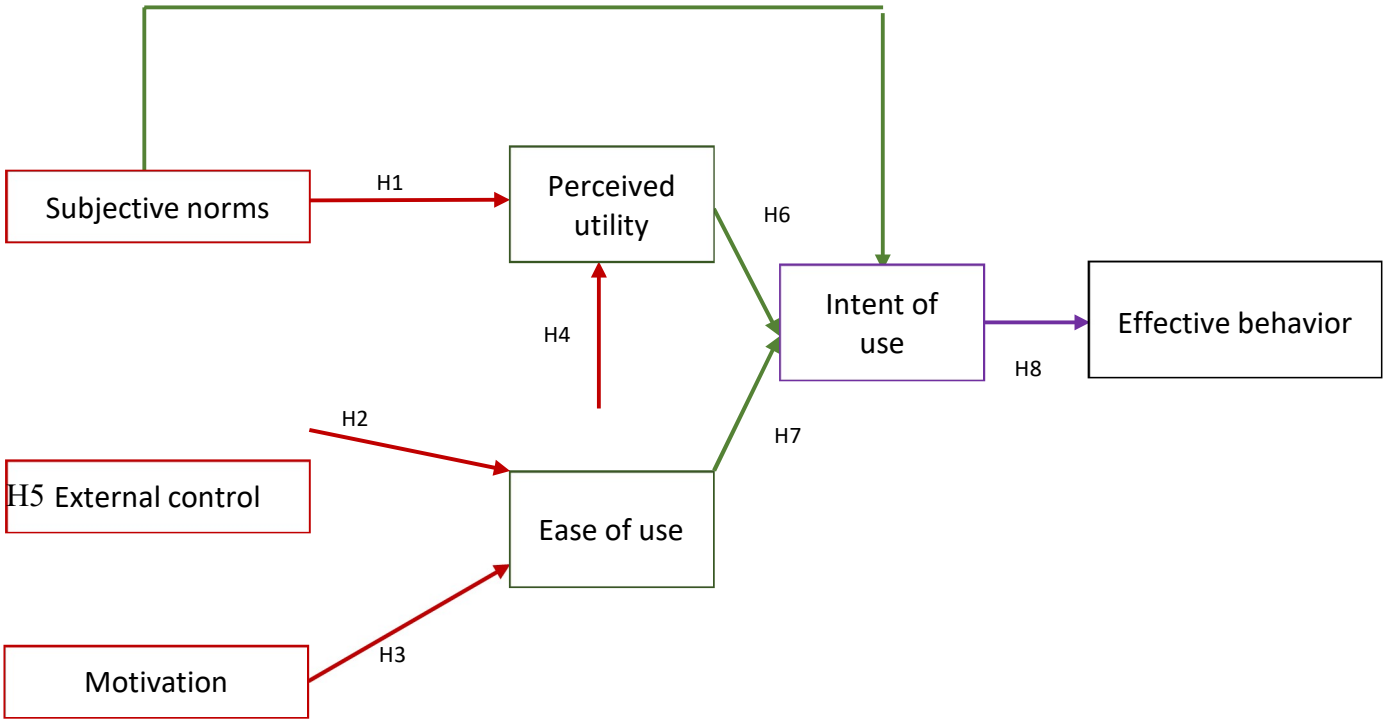

Figure 1: Theoretical model of the study

2. METHODOLOGY OF THE STUDY

The methodology envisaged follows a hypothetico-deductive approach with the use of quantitative data collected by a questionnaire survey. The research model contains constructs extracted from the two source models (TAM and TAM3), which will be measured through several variables. A quantitative study was carried out to validate the relationships between allthe variables of our model. In the light of this study, we will give an opinion on the determiningvariables of the acceptance of the use of the purchase on the internet,

Our quantitative study is descriptive and causal (Cooper and Schindler, 2003). It aims to identify and present the variables that influence the acceptance of the use of internet shopping on the one hand, and on the other hand, to explain the impact of this acceptance on the purchaseintention and on the actual purchase.

2.1. SAMPLE

The ideal sample is one that perfectly reproduces all members of the study population (Greenland and McGoldrick, 1994). This seems impossible to us to construct. We could not obtain an exhaustive list of customers using the technique of buying on the internet, aprobability sampling method was therefore excluded. We chose to use a convenience sample of 400 customers. As we are going to use the maximum likelihood method in the treatment bythe method of structural equations, the use of this method requires, among other things, a minimum for the size of the sample. Indeed, a minimum ratio of 5 individuals per estimated parameter is deemed necessary. Therefore, we judge that the size of our sample fully meets this condition and is considerably close to the recommended threshold of 10 individuals per parameter. This is not necessarily representative of the customers buying on the internet. This type of sampling has the drawback of limiting the external validity of the results.

This type of research can accommodate a convenience sample (Calder et al., 1981). We will therefore ensure that the sample is sufficiently diverse in terms of gender and age.

2.2. DATA GATHERING

The questionnaire is self-administered, by sending an e-mail and accessing a website via a hyperlink. Respondents are thus directed to the website which houses the questionnaire with optional responses, by checkboxes. After completion, the respondent activates the "Submit" button and the responses are received and stored on the site. A thank you message appears immediately to avoid multiple submission. Participation was on a voluntary basis.

2.3. MEASURING TOOL

The questionnaire was first developed and tested based on the literature, then tested with sevenprofessionals who provided comments also concerning the clarity of the questions in the English and French version of the questionnaire.
The questions follow a 7 points Lickert scale. For each item formulated as an affirmation, the respondent has a choice of answers between 1 and 7 (1-strongly disagree, 2-disagree, 3-tend todisagree, 4-neutral, 5-somewhat agree, 6-agree, 7-strongly agree). The variables are measured using items that have already been used and proven reliable by previous studies (Table 1).

Variable	Items
Perception of perceived utility: (adapted from Davis, 1989)	• Using online shopping will improve my job. • Using online shopping will improve my efficiency. • Using online shopping will increase my productivity.

	• I find online shopping a useful tool in my job
Perception of ease of use: (adapted from Davis, 1989)	• My interaction with online shopping is clear and understandable. • Learning how to use online shopping is easy. • My interaction with online shopping doesn't require a lot of mental effort. • I find online shopping easy to use
Intent for use: (adapted from Venkatesh V., Morris, Davis, & Davis, 2003); (Venkatesh, Thong, & Xu, 2012)	• I intend to use the internet purchase. • I plan to use the internet purchase. • I plan to use internet shopping.
Subjective norms, adapted from (Ajzen, 1985); (Davis, Bagozzi, & Warshaw, 1989); (Fishbein & Ajzen, 1975); (Mathieson, 1991); (Taylor & Todd, 1995b)	• People who influence my behavior think I should use internet shopping. • People who seem important to me think I should use internet shopping.
Externa contro (facilitating conditions): Benbasat 1991; , & Higgins, Compea Compeau Higgins, & Huff,	• I have sufficient material resources to use the internet purchase. • I have the necessary knowledge to use internet shopping. • Buying on the internet is compatible with the other training methods I use. • A specific contact person for online purchasing is available to assist me
Motivation: adapted from Venkatesh (2000)	• I find the use of internet shopping pleasurable. • The process of using internet shopping is fun. • I have fun while shopping on the internet

Chart 1: Measurement scales of the variables of the research model

2.4. VALIDATION OF THE THEORETICAL MODEL

The validation of the measurement scales of the variables involved in our research model is a prerequisite for the validation of the model insofar as these variables are precisely of an explanatory nature of this model. Indeed, the verification of the psychometric qualities of the scales used in the hypothesis tests will be a pledge of the validity of the results.

To highlight all the links between the variables of our research model, we will use the method of structural equations to confirm the existence of structural relationships between the differentvariables of the model. The structural equations will not be used here to verify the structure ofconstructs, but to validate a structural model involving relationships between these constructs.

We opted for structural equations because they allow us to:

- Test links between variables that are not directly observed;
- Simultaneously measure a set of interdependent linear regressions; the same variables can thus be considered both as independent explanatory variables of one or more dependent variables but also as dependent variables of other explanatory variables. We can test chainsof relationships, which makes it possible to infer causal links between several variables. This set of links between variables is summarized in the form of a structural model;
- Incorporate measurement errors into their estimates (Fornell and Larcker, 1981). Indeed, the items used to measure a construct reflect information relating to this concept but also additional information (error). The errors can have a bias effect in the results of statistical processing: increase in the probability of type I and type II errors, decrease in the part of the variance explained by a linear regression (Mackenzie, 2001). Taking into account the error terms improve the accuracy of the results.

3. STUDY RESULTS:

To test the hypotheses and validate our model, it is necessary to purify the measurement scales,which constitutes the intermediate objective of the quantitative analysis. Likewise, a descriptiveanalysis of the data is necessary. The detail of the study is as follows:

<u>Step 1: Purification of the measurement scales: evaluation of the internal reliability andthe unidimensionality of the scales</u>

Measurement theory emphasizes that the goal of checking the reliability of a measuring instrument is to reduce random error. Within the framework of this reflection, Roussel (2005) suggests that the reliability of a measuring instrument represents its capacity to reproduce similar results in the case where it is administered several times to the same population. In otherwords, for a measuring instrument to be reliable, it must allow different observers to make consistent measurements of the same subject with the same instrument or allow an observer tomake similar measurements. of the same subject at different times, always with the same instrument (Thietard et al. 2007). To check this reliability, several methods are available to theresearcher,

For the present study, we use the latter method, which is based, among others, on the calculationof Cronbach's alpha developed by the same author in 1951. This indicator varies between 0 and
1. Zero refers to an absence homogeneity, while the 1 denotes perfect homogeneity. ifCronbach's alpha is greater than 0.7, this indicates that the items in the study or test measure the same skill or characteristic.

This technique is widely used, but its application is valid, only, when the number of items is low or the concept is one-dimensional. For this reason, it is advisable to use exploratory factor analysis to test multidimensionality using the technique of principal component analysis (PCA).

Table 2 below summarizes the results of this analysis:

Built	Cronbach's alpha
Perceived utility	0.858
Ease of use	0.883
Intent of use	0.943
Subjective norms	0.838
Self-efficacy:	0.875
External controls	0.889
Anxiety	0.785
Motivation (computerplayfulness)	0.773

Chart 2: Measurement of the reliability of measurement scales

The Cronbach's alpha calculated initially for all the constructs is of very good quality (> 0.7), testifying to a satisfactory internal reliability of the scale.

The people who made the purchase	Yes	No	Total
Effective	728	96	824
Percentage	88.35%	11.65%	100.00%

Purchase frequency	Frequency	Percentage	Cumulative percentage
Once / month	380	52.2	52.2
Once a week	163	22.4	74.6
2 times / week	86	11.8	86.4
Others	99	13.6	100.0
Total	728	100.0	

Kind	Frequency		Cumulative
Women	714	98.1	98.1
Man	14	1.9	100.0
Total	728	100.0	

Age	Frequency	Percentage	Cumulative percentage
Between 18 and 24 years old	453	62.	62.
Between 25 and 34 years old	203	27.9	90.1
Between 35 and 44 years old	26	3.6	93.7
Under 18	45	6.2	99.9
Over 45	1	, 1	100.0
Total	728	100.0	

Step 3: Validation of the hypotheses of the study

After having purified the measurement scales, it is then appropriate to move on to the stage of testing the hypotheses via modeling by structural equations. This method has become more andmore widespread in the field of scientific research by presenting several advantages over othermethods such as single and multiple regressions, correlation tests or canonical analyzes(Schumacker and Lomax, 2004). Two methods are distinguished: the PLS method and the LISREL method.

The first represents a certain number of limits such as: the failure to consider measurement errors, the absence of model adjustment indices, the impossibility of processing non-recursive models. In response to these limitations, we chose the LISREL approach with maximum likelihood estimation. This approach seems to be the best suited to our research model. The sizeof our sample also justifies this choice. In the light of the results obtained, we will be able to confirm or reject the hypotheses of our research. In this section, the test of the global model will also be presented by means of a modeling by structural equations while always adopting the LISREL approach.

- Model identification

For Roussel et ali (2002), identifying a model supposes that it is theoretically possible to calculate a unique estimate of each of its parameters. To do this, two conditions must be respected:

- First, there must be at least as many parameters to estimate as there are observations. A modelis said to be identified or over identified when the number of degrees of freedom exceeds zero.This condition is realized in our study by checking the degrees of freedom.

- Second, an absence of multicollinearity is strongly required. The latter assumes a linear relationship between several variables

The detection of this phenomenon by SPSS is done by calculating the tolerance coefficients orthe VIF (Variance Inflation Factors). Usually, there is no consensus on the rules for detecting the multicollinearity problem. However, Chatterjee, Hadi and Price (2000) suggest that this aspect is raised when a VIF has a value greater than or equal to 10. Similarly, Kutner et al. (2004) suggest that a value of VIF> 3, 5, 10 indicates the existence of multicollinearity.

The data analysis carried out using the SPSS software shows an absence of collinearity betweenthe variables for most of the variables. The results of this analysis are presented in (Cf. table 3):

Built	Item / indicator	LIVEL Y
Perceived utility	Q4	2,204
	Q5	2,306
	Q6	2.234
	Q7	2.403
Ease of use	Q8	3,222
	Q9	2.122
	Q10	3.907
	Q11	2.187
Intent of use	Q12	4.061
	Q13	6.910
	Q14	5.484
Subjective norms	Q15	2,289
	Q16	2,500
External controls	Q17	2,588
	Q18	4.019
	Q19	3.020
Motivation	Q20	2.652
	Q21	1.519
	Q22	3,460
	Q23	2,463
	Q24	1,759
	Q25	2,879
	Q26	2.787

Chart 3: Multicollinearity analysis of the variables of the research model

- The evaluation of the model

There are three types of indices making it possible to measure the fit of the model (Roussel et al, 2002): global or absolute indices, incremental indices, and parsimony indices. The results ofthe analysis are as follows (Table 4):

Index	Standard	Value
Chi 2	No threshold	1746,351
CMIN / df Chi2 / df	<1 excellent	4.536
	<3 Correct	
	<5 acceptable	
GFI	> 0.95 if N <300	0.84
	> 0.9 if N> 300	
AGFI	> 0.95 Correct	0.807
	> 0.9 Acceptable	
CMA	Closest to 0	0.595
RMSEA	<0.01 excellent	0.07
	<0.05 Correct	
	<0.08 acceptable	

> 0.1 bad			
	NFI	> 0.9 Correct	0.377
	TLI	> 0.9 Correct	0.350
	CFI	> 0.95 Excellent	0.425
> 0.9 Correct			
> 0.9 Acceptable			
AIC		As low as possible	1906,351

Chart 4 : The adjustment indicators of the first model

In the light of the results obtained, the structural model presents a good fit for the results of thevarious indices calculated to measure the quality of the causal model. We can conclude that most of the values of these indices are at a level deemed acceptable. The values of the absoluteand comparative goodness-of-fit indices (GFI, AGFI) are satisfactory; the GFI and AGFI indices approach 0.9, which represents the critical adjustment value. These limit values shouldbe considered as indicators of commonly accepted standards rather than as a threshold for rejecting the model (Roussel et al. 2002). The values of the RMSEA index are within the required standards and reflect the increased goodness of fit of the causal model.

The use of indices such as the test Student can be used to judge the significance of the causal relationships between the variables. However, the values must be greater than 1.96. Regression coefficients are also recommended to assess the direction of the linear relationship.

Significance analysis

Causal link	**Parameter estimation**	**Student'stest**	**Significance of the links**	**Validationof hypotheses**
Ease of use <--- control	0.702	12.362	***	Validated
Ease Utility <--- motivation	0.000			
Perceived utility <--- Ease Utility	0.600	9.133	***	Validated
Perceived utility <--- subjective norms	0.225	6.413	***	Validated
Intent <--- Perceived utility	0.166	2,273	0.023	Validated
Intention <--- subjective norms	0.654	13,091	***	Validated
Intent <--- Ease of Use	0.002	0.030	0.976	Rejected

Chart 5 : Analysis of the significance of the relationships between the variables of the research model

- Explanatory variables for ease of use

Regarding the relationship between control and ease of use has been validated like the results provided. Thus, the Student test being equal to 12.362, we can pronounce on the existence of asignificant relationship between these two variables (p-value <= 0.05) and therefore on the acceptance of the hypothesis (H2).

As for the relationship between motivation and ease of use was dismissed as the results provided. Thus, the Student test being lower than the statistical threshold, we can pronounce on
the absence of a significant relationship between these two variables and therefore we reject thehypothesis (H3).

- The explanatory variables of perceived utility

The relationship between subjective norms and perceived utility was validated from our results.Thus, the Student test being equal to 6.413, we can pronounce on the existence of a significantrelationship between these two variables (p-value <= 0.05) and therefore on the acceptance of the hypothesis (H1).

Regarding the relationship between ease of use and perceived utility, our results confirm the existence of a significant relationship (Student's test being equal to 9.133 and p-value <= 0.05)and therefore we validate hypothesis (H4).

- Explanatory variables of intention to use

In the light of the statistical results (t = 13.091 and p-value <= 0.05), we can confirm the significant relationship between subjective norms and intention to use. This allows us to validate hypothesis (H5).

The results provided also confirm the existence of a significant relationship between perceivedutility and intention to use (Student's test being equal to 2.273 and p-value <= 0.05) and thus we validate the hypothesis (H6).

As for the relationship between ease of use and intention to use, the study results invalidate thesignificant link (t = 0.030). This therefore allows us to reject hypothesis (H7).

5. DISCUSSION OF RESULTS

According to the Technological Acceptance Model (TAM), the motivational variables presented: perceived utility, ease of use and purchase intention mediate the relationship betweenthe determinants and actual purchasing behavior. Indeed, the model defends a psychological relationship which advocates the mediating role of motivational variables. However, thedetermining system influences online shopping behavior via these mediating variables. The model rejects the behaviorist approach defending direct action on effective behavior.

Our results highlight the significant impact of ease of use on perceived utility (0.6). This underlines the importance of the variable in the explanation of the usefulness of use. In addition,ease of use has more direct influence on intention than perceived utility. but this has

no effect on the intention to use the online purchase.

The effect of ease of use on usability operates almost entirely through its effect on utility, whichis 0 6. Why is ease of use primarily about utility? The concept of utility may reflect considerations of both the "benefits" and "costs" of using the target system (eg, Einhorn and Hogarth, 1981; Johnson and Payne, 1985). Ease of use (or more exactly its opposite, user effort)can be viewed as part of the cost of using the system from the user's point of view. One possible
direction for future research would be to attempt to define and measure the "benefits" of use ina particular context.

Compared to ease of use, perceived utility has a fairly low direct impact on intention to use (0.166).

The small but significant direct influence of system characteristics on intention to use (-0-16) suggests that perceived utility and perceived ease of use may not be the only mediating beliefsbetween the system and the intention. This leads us to consider the possible beliefs that shouldbe added to the model. The model considers that computer use behavior is largely extrinsicallymotivated, being motivated by concern for performance gains and associated rewards (0.4). Malone (1981) points out that intrinsic motivations also play an important role in determining the use of computer systems. That is, people use systems in part because they enjoy the processof their use, and not just because they are extrinsically rewarded for the performance impacts of use. Intrinsic motivation is a mechanism underlying the observed direct effect of system characteristics on usability. From this perspective, the effect of an individual in using a given system is jointly determined by the extrinsic and intrinsic rewards of using the system.

Our results also confirm the role of subjective norms in explaining perceived utility (0.225) andintention to use (0.654). This explains situations where people are forced to use a given systemdue to management restrictions. These users would be motivated to use the system notnecessarily because they have positive attitudes, or think it is easy to use or useful, but rather because they feel pressured to use it by management. Such a motivational construct may very well be similar in spirit to Ajzen and Fishbein's (1980) 'subjective standard', which captures individuals' belief that other relevant people want them to adopt a given behavior and their motivation. to comply with such wishes.

Our model also highlighted the key role of control in explaining ease of use (0.702).The current results have implications for improving user technological acceptance.
Many designers believe that the main obstacle to technological acceptance is the lack of usability of current systems, and that adding user interfaces that increase usability is the key tosuccess (Branscomb and Thomas, 1985). Current results indicate that while ease of use is clearly important, the utility of the system is even more important and should not be overlooked.Users may be willing to tolerate a difficult interface in order to access features that help them in their work, while no ease of use can compensate for a system that does not do a useful task.

The Technology Acceptance Model shows promise as a practical tool that should help practitioners identify and evaluate strategies to improve user acceptance. Considering the largeinvestments involved in the development of new systems, it is desirable to plan for user acceptance as early as possible in the design process (Gould et al., J991; Rosson, Maass &

Kellogg, 1987).
User acceptance testing performed early in design, if sufficiently predictive of future user acceptance, could reduce the risk of user rejection by allowing designers to better filter, prioritize ideas for users. anti-refinement application.

CONCLUSION

The TAM model has always been used in order to understand and explain the behavior of the individual. According to the TAM and TAM3 model, we can confirm that the usability is mainly determined by the control. In contrast, we reject the significant link of self-efficacy, anxiety, and motivation over ease of use. This corroborates the results of previous studies (Gefen, Karahanna & Straub, 2003; Davis, 1989; Davis, Bagozzi & Warshaw, 1992; Taylor &Todd, 1995; Venkatesh & Davis, 2000).

Our results confirm the role of ease of use and subjective norms in explaining perceived utility.This agrees with previous work (Venkatesh & Davis, 2000). Contrary to many studies, our results refute the existence of a significant relationship between ease of use and intention to use.

The results provided confirm the explanation of the intention to use by two variables namely, subjective standards and perceived utility. This conclusion has often been verified in previous research (Venkatesh & Davis, 2000). However, they invalidate the significant link between easeof use and intention to use.

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