



## Research article

## Purchase intention and purchase behavior online: A cross-cultural approach



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## ABSTRACT

This article aims to explore the key factors on e-commerce adoption from elements of social psychology, such as attitude, subjective norms, perceived behavioral control, ease of use and perceived usefulness, introducing the study of non-traditional elements like buying impulse, compatibility, and self-efficacy in online stores, contrasting relationships in a cross-cultural environment. The proposed model is tested from quantitative research with a sample of 584 online consumers in Colombia and Spain. The following statistical analyses were conducted: CFA, structural equations, measurement instrument invariance, and multi-group analysis with EQS 6.3 software. The study reveals that self-efficacy in online stores is a key factor in adopting electronic commerce above the cultures studied. Also, there is significant evidence that proves the moderating effect of national culture on several relationships of the model proposed. Results highlight the importance of national culture to understand impulsive buying behavior. The article presents several considerations toward the main elements to generate online purchase intention among consumers in an emerging country and finds substantial differences with consumers in a developed country. Practical implications are made for companies to adopt online channels and expand internationally.

## 1. Introduction

e-Commerce has had remarkable success and provided significant economic and social benefits in developed countries; however, in developing countries, the picture is quite different. Many challenges in these economies have hindered the growth of e-commerce. In this regard, [Uwemi and Fournier-Bonilla \(2016\)](#) indicate that consumers in developed countries have become accustomed to using the Internet and have been benefited from e-commerce, changing their lifestyles. In contrast, consumers in developing countries are used to face-to-face transactions, do not trust in electronic processes, and cannot afford the risk involved. This situation demonstrates the need to study the crucial factors that could lead consumers in developing countries to adopt e-commerce so that they can enjoy the economic and social benefits that developed countries already enjoy. The aim of this research is to assess the main theories about consumer behavior/making decision from the social psychology perspective, to understand the intention to adopt electronic channel and, in this way, to determine the precursors of online purchase

intention in an emerging economy, and to compare these precursors with the precursors in a developed economy through a cross-cultural study.

The proposed framework for this study examines and contrasts key elements related to the purchase decision making process and their consequences. These elements are operationalized as antecedent variables (attitude, buying impulse, subjective norms, self-efficacy, PBC, Compatibility and PIIT) that can influence online purchase intention and consequently online purchase behavior both in a developed and in an emerging economy. Based on a literature review, the variable online purchase intention has been often selected as the basis of purchasing behavior study. Literature shows the intention may be the main predictor of any behavior ([Fishbein and Ajzen, 1977](#)); thus, this work use purchase intention online as the main antecedent of purchase behavior from an online retailer. The main theories that have impacted the prediction of human behavior from a social psychology standpoint were reviewed to determine which factors influence online purchase intention (ie, Theory of Planned Behavior TPB, Technology Acceptance Model TAM, Diffusion of Innovation Theory DIT), these theories have strongly proved being

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effective to predict human behavior in many contexts. The literature review indicated that some studies had common factors, such as attitude, subjective norms and perceived behavioral control, which originate from the TRA and TPB (Ajzen, 1985); ease of use (EOU) and perceived usefulness, which originate from the TAM (Davis, 1989); and compatibility and personal innovation in information technology (IT), which originate from DIT (Rogers, 2010). Although these theories were developed in the 80s, they are still used to describe and predict behavior in different sciences, such as economics, psychology, and medicine (Agag and El-Masry, 2016; Montaña and Kasprzyk, 2015). In this study, the construct of self-efficacy in online stores is added to these variables to explain the intrinsic factors of the consumer that influence online purchase intention, as well as the construct of buying impulse, to add subjective factors not included in traditionally studied variables. In this way, we look to incorporate a broader perspective of the intentions of purchase behavior online that can be compared in two different markets.

According to Verdugo and Ponce (2020), there is a lack of cross-cultural studies about consumer behavior including Latin America countries, several studies from western vs. eastern countries can be found in literature, as much as cross-cultural studies making comparisons between individualistic vs. collectivistic countries, selecting individualistic samples from North American and Western European countries and collectivist samples from Asian countries (Mazaheri et al., 2011). However, Latin America has the most collectivist countries in the world, namely Ecuador, Panama, Guatemala, and Colombia, in that order (Hofstede et al., 2010). Engelen and Brettel (2011) suggest that future cross-cultural studies need to include samples of South American individuals and compare them directly with individuals from Western Europe or North America. Following this suggestion, this research proposes a cross-cultural comparison between a developed and individualistic country from Western Europe (Spain) and one of the most collectivist countries in the world with a developing economy located in South America (Colombia). It is hoped that the research model used to compare these countries will provide results that will contribute to the literature on consumer behavior in cross-cultural contexts and provide answers relevant to both the national and international levels, due to the academic interest in testing and building new theories in countries with under-developed economies.

To do so, the paper presents a literature review of national culture and the main antecedents of consumer purchase intentions. Then, in materials and methods, we present the research model, the measurement scales, and the description of the sample and procedure used. The results present the main findings of the research, and for last, conclusions also present implications for academy and practice.

## 2. Literature review and research hypotheses

Given this study is oriented to find the differences between the purchase intention formation between two countries, it is important to review the literature about national culture, which has been a valuable tool to explain the differences that underlie the behavior of the individual based on culture. Then, a review of the literature of the most important variables proposed as antecedents of purchase intention is presented, according to the theories revised.

### 2.1. National culture

Culture is not so much a property of individuals or groups, but a tool for understanding and learning the differences commonly attributed to national culture (Burton, 2008). Specifically, Yang and Jolly (2009) claim that national culture is a key element from which consumer behavior can be differentiated. According to Kumar and Pansari (2016), national culture can affect consumer behavior in different areas. In this research, the national culture will be used as a key variable in the differentiation of consumer behavior in the electronic channel from two nations with distinct cultures, according to the indexes of the dimensions

that make up the national culture. According to Wanick et al. (2019), cross cultural study in consumer behavior has had a great attention to comparisons between eastern and western countries, however, Latin America has been lagged from these studies. This study focuses on Colombia and Spain and aims to help fill an important gap in the scientific literature on Latin American culture (See-Pui, 2013; Verdugo and Ponce, 2020) by studying Colombian consumers and comparing them with Spanish consumers. Table 1 shows the indexes of the six cultural dimensions for the selected markets, according to Hofstede et al. (2010).

Now, according to the bipolar dimensions of Inglehart (1997), Colombia and Spain differ significantly in the dimension that includes traditional values vs. secular/rational values. Figure 1 shows the location of the countries, according to the results of the World Values Survey (WVS) Wave 5.

Specifically, there is a significant difference in the dimension of traditional values – secular/rational values of the countries analyzed. This dimension is used to analyze the process of change from traditional to modern societies. In the first, religion, family ties, gender roles, and national pride are important. In contrast, societies oriented toward secular-rational values, based on the development of the individual, do not give much importance to religion; additionally, there is gender equality, and tolerance is exercised as a fundamental value. This second dimension is also called Modernization, “which involves changing from religious authority to state authority, through the process of secularization and bureaucratization” (Ros, 2008, p. 15). According to the graph, Colombia is at the pole of traditional values, whereas Spain, although moderately, is at the pole of secular-rational values. The difference between both national cultures is expected to impact consumer behavior online.

### 2.2. Online purchase intention and purchase behavior

Purchase intentions can be used to test the implementation of a new distribution channel to help managers determine whether the concept deserves further development and decide which geographic markets and consumer segments to target through the channel (Morwitz et al., 2007). Their importance lies in the fact that intentions are considered the key predictor of actual behavior (Montaña and Kasprzyk, 2015); therefore, their study is of the utmost importance for the success of any online retailer. This research proposes to purchase intentions as the key variable to be investigated. The construct takes place at the pre-purchase stage and captures the motivational aspects that affect customer behavior (Armitage and Conner, 2001). To predict consumer behavior, it is necessary to know the attitudes, assessments, and internal factors that ultimately generate the purchase intent (Fishbein and Ajzen, 1977). In this research, in line with Pavlou (2003), online purchase intention is understood as the degree to which a consumer is willing to buy a product through an online store.

Purchase behavior has been studied in various marketing fields besides traditional purchasing in physical stores, such as green marketing (Nguyen et al., 2016), luxury brands and products (Beuckels and Hudders, 2016), B2B transactions (Wei and Ho, 2019), and lastly, online purchase (ie, Sundström et al., 2019). Following George (2004), in this investigation, online purchase behavior is understood as the frequency with which consumers make purchases over the Internet. According to (Ajzen, 1991), the intentions of the consumer are an indicator of the extent to which people are willing to carry out a specific behavior, which in this research would be translated as online purchase behavior. It has been found that the lack of intention to buy online is one of the first obstacles for the development of e-commerce (He et al., 2008), and researchers such as Lim et al. (2016) note that online purchase intention and online purchase behavior need to be explored more. Based on the above, the first research hypothesis for this study explores the effect of online purchase intention on consumer purchase behavior.

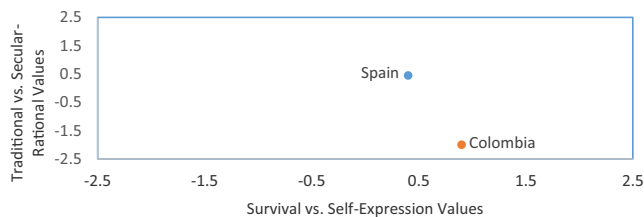
H1. Consumer online purchase intention has a positive effect on online purchase behavior

**Table 1.** 6D Model: Colombia vs. Spain.

Dimension	Colombia	Spain	Δ
Power distance	57	57	10
Individualism	13	51	38
Masculinity	64	42	22
Uncertain aversion	80	86	6
Long-term orientation	13	48	35
Indulgence	83	44	39

Source: Hofstede et al. (2010).

Delta > 30.



**Figure 1.** Cultural map - WVS wave 6 (2010–2014). Source: (Inglehart et al., 2014).

To assess national culture as a crucial factor in the behavior of consumers in the electronic channel, it is proposed that the effect of intentions on actual purchase behavior will be different, a more traditional society is expected to be more reluctant to adopt technology, because it breaks with its lifestyle, while a society oriented to secular values adopts any type of technology that helps make their life easier and reach faster their goals, as presented in the following hypothesis:

H1a. The effect of online purchase intention on online purchase behavior is moderated by culture

**2.3. Attitude toward online shopping**

Attitudes are learned and developed over a certain period and are often difficult to change but can be influenced by satisfying psychological motivation (Lien and Cao, 2014). More specifically, attitudes change over time as individuals learn new concepts about the idea or object they are evaluating (Shaouf et al., 2016). According to Allport (1935), attitude is an important determinant of the predisposition of an individual and has a positive relationship with behavior. It is defined as the level to which an individual makes a positive or negative assessment of behavior (Fishbein and Ajzen, 1977). In this research, attitude is understood as the assessment of the consumer about purchasing through online stores, following the work of Andrews and Bianchi (2013). According to TRA, intentions are the result of the attitude toward certain behavior: the greater the positive attitude toward a behavior, the greater the intention of carrying out the behavior (Amaro and Duarte, 2015). It is then expected that, if the assessment of the consumer toward buying online is positive, the consumer intention to buy through online stores will increase. Thus, the second research hypothesis is proposed, and the effect of moderation of culture is examined as well.

H2. Attitude toward e-commerce has a positive effect on online purchase intention

Again, traditional societies may not have an open attitude towards new technologies because they are more risk averse than pragmatic and secular societies, therefore it is expected that there will be a significant difference in the relationship between the attitude and the intention to buy in The markets studied.

H2a. The effect of attitude toward e-commerce on online purchase intention is moderated by culture

**2.4. Subjective norms**

Subjective norms are based on the perception of an individual about what should or should not be done in accordance with the reward or punishment that may be obtained from carrying out such behavior. Thus, according to the study by Kim et al. (2013), subjective norms are defined in this research as the motivation a consumer receives from friends, family, and colleagues, to make purchases through online stores. Subjective norms are a construct that is commonly used as a precursor in decision-making (Sandve and Øgaard, 2014) because people are more inclined to act if their role models think they should do so (Schepers and Wetzels, 2007). The research concerning the factors that influence the individual to make an online purchase is limited (Andrews and Bianchi, 2013); however, studies such as that by Nor and Pearson (2008) state that subjective norms from friends, family, and colleagues have a positive influence on buying online. According to the literature, it is proposed that if consumers believe that their peers are in favor of an online purchase, the online purchase intention will be greater. The evidence shows the subjectivity inherent in the perceptions of consumers according to their culture. The level of individualism can explain the moderation of national culture on the relationships in the studied regions. According to Hofstede et al. (2010), Colombia is a country with a high degree of collectivism, whereas Spain is an individualistic country. Individualism “is the degree to which people in a country prefer to act as individuals rather than as members of groups” (Hofstede, 1994, p. 6), whereas in collectivism, individuals prefer to feel they are part of a group (Triandis, 1990). Subjective norms dictate that the behavioral intention of consumers originates from perceived social pressure, following Schepers and Wetzels (2007); people who believe subjective norms are important to tend to act if their peers think they should do it. Individuals are, therefore, expected to show stronger subjective norms in collectivist cultures than in individualistic cultures to be accepted by the group (Choi and Geistfeld, 2004). Thus, hypothesis 3 and 3a are proposed.

H3. Subjective norms have a positive effect on online purchase intention

H3a. The effect of subjective norms on online purchase intention is moderated by culture

**2.5. Perceived behavioral control - PBC**

The theory of planned behavior, TPB, adds the construct of perceived behavioral control (PBC) and establishes it as the determinant between intentions and actual behavior (Ajzen, 2002). Thus, a person who has no control over a situation may not be inclined to participate in it. In this research, PBC is understood as the level of control perceived by a consumer over external factors during the process of buying from an online store (Amaro and Duarte, 2015). E-commerce may represent a sense of loss of control of the situation due to the uncertainty caused by the intangible environment (Dabholkar and Sheng, 2009); therefore, perceived control in this study is a key factor to be investigated to

understand the shaping of consumer behavioral intentions in the context of e-commerce. It is expected that people will prefer situations that they can control over those in which external forces have control (E. S.-T. Wang, 2014). In this regard, this research aims to establish a directly proportional relationship between the PBC of consumers and their online purchase intention, as shown in the following hypotheses.

H4. PBC has a positive effect on online purchase intention

H4a. The effect of PBC on online purchase intention is moderated by culture

## 2.6. Self-efficacy in online stores

Some authors claim that self-efficacy has been misunderstood in the study of e-commerce, and it is often used interchangeably with PBC (Amaro and Duarte, 2015). Although these concepts are related, they are not interchangeable and should be differentiated. Whereas PBC refers to the external factors of the individual, self-efficacy is related to the cognitive perceptions of the consumer (Armitage and Conner, 2001) and reveals the beliefs of the consumer about his or her ability to perform a behavior (Hernández et al., 2011). According to Wu and Wang (2015), self-efficacy should be examined for a specific task or context because the validity and predictive relevance of the measure will be greater. As a result, based on the study by Amaro and Duarte (2015), this research aims to study the specific variable of self-efficacy in online stores, defined as the belief of consumers in their capacity to successfully use the Internet to search for information and purchase products through online stores. In this regard, Yeşilyurt et al. (2016) note that individuals with low self-efficacy tend to resist using computers and IT, whereas those with high levels of self-efficacy strive to overcome any challenge to achieve their goals (Y. C. Liu and Hung, 2016). It is expected that consumers with higher perceived self-efficacy in online stores will show greater online purchase intention.

On the other hand, the level of individualism/collectivism guides how individuals interact and relate to cultures. Because shopping is a social process, it is determined by the relationships of individuals. Electronic purchases can be perceived as a solitary activity in which the consumer needs to have all the skills and abilities necessary to make the purchase decision and carry out the procedure. Thus, consumers in collectivist countries are expected to consider self-efficacy in online stores as an essential element in the development of online purchase intention, more than consumers in individualistic countries, as shown in the hypothesis:

H5. Self-efficacy in online stores has a positive effect on online purchase intention

H5a. The effect of self-efficacy in online stores on online purchase intention is moderated by culture

## 2.7. Ease of use (EOU)

In the technology acceptance model, TAM, the key issue posed by Davis (1989) lies in the wasted potential of IT in the performance of tasks, due to the resistance of users to accept and use such technologies. However, if the technology is perceived as easy to use, its adoption by the potential user will be easier because the learning curve is reduced (Smith et al., 2013).

EOU is linked to consumer perception during the user experience (Perea y Monsuwé et al., 2004) and refers to the absence of effort perceived by a person when using a technology (Lee, 2009; Smith et al., 2013). Following the line of these authors, for this research, EOU will be understood as the belief of the consumer that buying over the Internet will require minimal mental and physical effort. This perception, according to the literature, has a positive impact on the attitude of consumers toward e-commerce because if the process of using online stores is simple, the evaluation of e-commerce by the consumer will be positive (Agag and El-Masry, 2016). Thus, hypothesis 6 and 6a of the research are presented.

H6. EOU of e-stores has a positive effect on attitudes toward e-commerce

H6a. The effect of EOU of e-stores on attitudes toward e-commerce is moderated by culture

## 2.8. Perceived usefulness

Along with EOU, perceived usefulness is one of the cognitive factors that determine the acceptance of an IT, according to TAM (Agag and El-Masry, 2016). It refers to a person's belief about the improvement in performance and productivity that will be achieved by using new technology (Lee, 2009). The construct was originally proposed by Davis (1989), whose main idea was that people would adopt an IT if they perceive that this technology will improve their performance.

In e-commerce, perceived usefulness from the consumer perspective has been studied in terms of how they perceive the effectiveness, productivity, and importance associated with electronic stores. Perea y Monsuwé et al. (2004) note that usefulness is linked to the perceptions of consumers after use is already experienced; therefore, in e-commerce, usefulness will be understood as the perception of consumers that purchasing through online stores will improve the outcome of their shopping experience. As a result, it is expected that if an online store improves the outcome of the shopping experience, then the consumer will evaluate e-commerce favorably.

Besides, according to Hofstede (2011), indulgence is the degree to which people try to control their desires and impulses for their satisfaction. Society is oriented towards fun and enjoyment if it has high levels of indulgence (Belanche et al., 2015), whereas societies with a low indulgence level are restrictive. It is then hypothesized that consumers from restrictive cultures value the utility offered in an IT significantly more than those consumers from indulgent cultures, where hedonic and non-functional elements are expected to be the crucial factors determining positive attitudes toward online shopping,

H7. The perceived usefulness of online stores has a positive effect on consumers' attitudes towards online shopping

H7a. National culture moderates the effect of perceived usefulness on attitudes toward online shopping

## 2.9. Buying impulse

According to O'Cass and Fenech (2003), the immediate predecessor of e-commerce is TV infomercials. Donthu and Gilliland (1996) found that one of the main differences between TV infomercial buyers and non-buyers was impulsivity. Those who used the infomercial channel were more impulsive than those who did not use the channel, with buying impulse being a precursor of accepting IT. Now, it is expected that the inclusion of buying impulse in the proposal of this research model will provide a theoretical contribution to the study of consumer behavior, specifically the adoption of new technologies to facilitate spending behaviors. Impulse buying may contain more hedonic elements than rational ones (Rook, 1987). These elements form a broader and more complex spectrum that has prompted further study of the impulse process in the consumer to understand it better. Due to the boom of e-commerce, there has been an opportunity to redirect these studies and apply them to the new electronic channel alternative. However, there is a gap in the literature regarding impulse buying in e-commerce, specifically in emerging economies, in which the adoption of this new distribution channel has been lower than in developed economies. Following this line of thought, this research defines the buying impulse and proposes that buying impulse will influence online purchase behavior according to the following hypothesis.

H8. Buying impulse has a positive effect on online purchase intention  
Also, Stern (1962) associates impulse buying with the ease of carrying it out because a purchase involves sacrifices related to travel, time, and budget. As a result, when the act of a purchase requires greater investment in these resources, more thoughtful consideration and planning will



be required. In contrast, if less effort is required, then the likelihood of impulse buying will be greater. Due to the ubiquity of virtual stores, the absence of commuting to the point of the sale and the time savings implied in the search for information and comparison of products and prices that are inherent to online purchases, this research proposes that buying impulse may be a consequence of the EOU, as presented in the following hypothesis.

H9. The perceived EOU of e-stores has a positive effect on buying impulse.

Considering the literature on impulse behaviors, what occurs when a consumer has an urge to purchase without cognitive considerations needs to be examined (Rook, 1987). Therefore, it can be deduced that the buying impulse originates from a hedonic, emotional, or irrational need that generates instant gratification when buying is easy. Because indulgent societies allocate their resources and time to things that provide them pleasure, satisfaction, and enjoyment, it is presumed that national culture will moderate the relationship between the EOU of online stores and the buying impulse. Similarly, it is assumed that in the Colombian sample, the relationship between buying impulse and online purchase intention will be significantly stronger than in the sample from Spain. Thus, this research suggests that national culture has a moderating effect on the relationships set out in the following hypotheses:

H8a. The effect of buying impulse on online purchase intention is moderated by culture

H9a. The effect of EOU on buying impulse is moderated by culture

### 2.10. Compatibility with online shopping

Vijayasathya (2004) used compatibility for his proposed extended TAM, which understands compatibility with online shopping as “the extent to which a consumer believes that shopping online fits/matches his/her lifestyle, needs, and shopping preference” p. 750. The present study accepts the definition of Vijayasathya (2004) because the same type of technology is studied. Compatibility with e-commerce has a direct and important relationship with behavioral intentions in an online environment (Amaro and Duarte, 2015), because it is assumed that the adoption process will be easier if consumers perceive that the online purchase does not conflict with their interests and tastes.

According to Vijayasathya (2004), compatibility with online shopping will depend on existing values. Because culture has been defined as the set of values and symbols, among others, shared by a group of individuals, it can be argued that compatibility with online shopping will vary depending on the values of each of the samples in the cross-cultural study. In turn, the relationship between compatibility with online shopping and online purchase intention is significantly different between groups. In this research, compatibility will be studied as a precursor of online purchase intention, as stated in the following hypotheses.

H10. Compatibility with e-commerce has a positive effect on online purchase intention

H10a. The effect of compatibility on online purchase intention is moderated by culture

### 2.11. Personal innovation in IT - PIIT

Personal innovativeness in the domain of information technologies, PIIT, has been studied from the perspective of the diffusion of innovation in general (Rogers, 2010) and applied particularly in marketing (Agarwal and Prasad, 1998). Personal innovation is the latent preference for new and different experiences, which causes the search for experiences that stimulate the mind and senses (J. Kim and Forsythe, 2008). In the technological context, Agarwal and Prasad (1998, p. 206) define PIIT as “the willingness of an individual to try out any new information technology”. An important feature of PIIT emphasized by Agarwal and Prasad (1998, p. 206) is that as a trait, it is “a relatively stable descriptor of individuals that is invariant across situational considerations”. Traits are not usually influenced by internal factors or the environment (Webster

and Martocchio, 1992) and therefore ensure stability over time. According to Agarwal and Prasad (1998), PIIT is an important concept for studying the adoption of new technology. For example, Yi et al. (2006) demonstrated that there is a relation between PIIT and the intention to perform a behavior. Given these results, this research seeks to transfer the concept of PIIT by applying it to e-commerce and examine its effect on online purchase intention, as presented in the last set of research hypotheses.

H11. PIIT has a positive effect on online purchase intention

H11a. The effect of PIIT on online purchase intention is moderated by culture

## 3. Materials and methods

Based on the literature review, a research model is proposed to compare the relationships (Figure 2).

### 3.1. Samples and procedure

To determine the online purchase intention in the selected cultures, 600 intercept surveys were applied between November 2014 and February 2015 in the studied countries. All the ethical guidelines for data collection, informed consent and pertinent disclaimers were reviewed and approved by the ethics committee of CESA. The information was collected from e-commerce users over the age of 18. The sample was gathered by two companies specialized in market research, one in each country, using a structured questionnaire. The companies obtained the data from students of undergraduate programs of economy, in two urban cities (Valencia, ES, and Cali, CO). Participation was voluntary and limited to consumers born and raised in the selected countries to ensure that they were from the national cultures analyzed in this study. Also, to determine if they were regular users of e-commerce, a filter question was proposed at the beginning of the survey, asking the last time they bought online. Users with experience in the last six months were electable for the study. After applying both filters, 585 valid surveys were obtained: 291 for Colombia and 294 for Spain. The sample profile for Colombia is composed mainly of women (53%). Most participants are single (58%) and between 18 and 39 years of age (84%). For Spain, the sample is balanced concerning gender (50%–50%); almost all participants are single (99%), and all of them are under 39 years of age. The programs EQS 6.3 and Smart-PLS were used to process the data. Table 2 shows demographic information of the sample.

### 3.2. Measures

Measurement scales previously validated in the literature were used in this study. The measures for attitude toward online shopping were adapted from Jarvenpaa et al. (1999). The study of Wu and Chen (2005) were adapted to measure subjective norms and PBC. The scales to measure EOU and perceived usefulness were obtained from the study by Pavlou (2003). The scale to measure compatibility was adapted from Andrews and Bianchi (2013); the study by Agarwal and Prasad (1998) was used to measure PIIT. The proposed scale to measure self-efficacy in online stores is based on the studies by Pavlou and Fygenson (2006) and Lian and Lin (2008). The scale of Wells et al. (2011) was adapted to measure the buying impulse; online purchase intention was measured based on the studies by Pavlou (2003). Finally, the scale to measure online purchase behavior was obtained from the study by George (2004). Appendix 1 shows the scales adapted.

## 4. Results

The results are subjected to different analyses to find all the information needed. First, the model is validated using a confirmatory factorial analysis (CFA) with the software EQS 6.3. Subsequently, invariance of the instrument of measure is addressed to determine if the

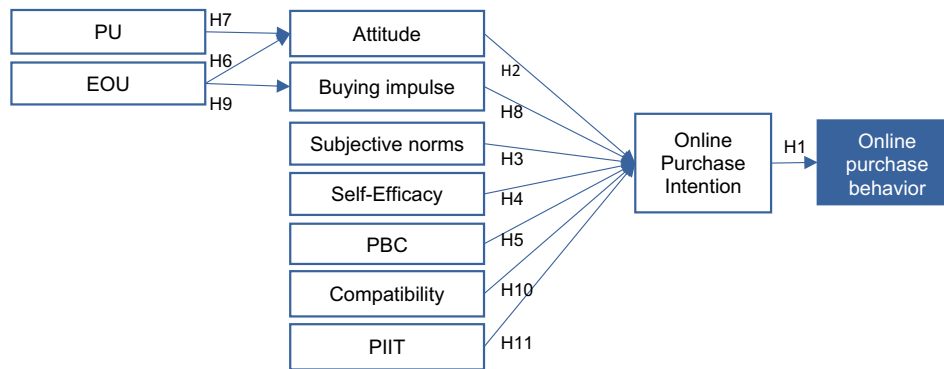


Figure 2. Model research.

Table 2. Demographic information of the sample.

Variable	Items	Colombia		Spain	
		Frequency	%	Frequency	%
Gender	Male	139	47.9	148	50.3
	Female	151	52.1	146	49.7
Age	18–25 years old	72	24.8	271	92.2
	26–39 years old	171	59.0	23	7.8
	40–49 years old	39	13.4	0	0
	50–59 years old	6	2.1	0	0
	>60 years old	2	0.7	0	0
Internet Experience	<6 months	8	2.8	1	0.3
	6–11 months	86	29.7	0	0
	1–3 years	69	23.8	5	1.7
	4–6 years	42	14.5	43	14.6
	>7 years	85	29.3	245	83.3

questionnaire is not just valid for both subsamples, but to assure the items proposed are measuring the same factor. Finally, to contrast hypotheses, a Bootstrapping analysis, and a partial least square multigroup (PLS-SEM) analysis is conducted to determine the moderation effect of the culture in the proposed relationships.

4.1. Model validation

To validate the model, a CFA for the total sample was performed with the software EQS 6.3. The model fit showed satisfactory values: NFI = 0.925; NNFI = 0.928; CFI = 0.945; RMSEA = 0.065; SRMR = 0.055. Composite reliability of the model for the total sample is verified with values between 0.75 and 0.93 in all the constructs; Also, AVE values were

over 0.6. With the goodness of fit of the model established, a CFA was conducted for each sub-sample to determine the reliability and validity of the measuring instrument for the Colombian and Spanish subsamples. Results are shown, respectively, in Tables 3 and 4.

To confirm discriminant validity, the square root of the AVE (diagonal in bold) must be greater than the numbers in each row and column, which correspond to the correlations between factors (Fornell and Larcker, 1981). The reliability is confirmed by the composite reliability being greater than 0.7 and the AVE being higher than 0.5 (Bagozzi and Yi, 1988).

Table 3. Reliability and validity of the model – Colombian sample.

	PIIT	IMP	AUT	ATT	NS	CP	COM	EOU	PU	INT	CR	AVE
PIIT	<b>0.828</b>										0.867	0.685
IMP	0.104	<b>0.836</b>									0.874	0.699
AUT	0.511	-0.067	<b>0.849</b>								0.911	0.721
ATT	0.505	0.149	0.447	<b>0.874</b>							0.907	0.764
NS	0.309	0.217	0.088	0.571	<b>0.928</b>						0.949	0.861
CP	0.473	0.076	0.709	0.568	0.229	<b>0.869</b>					0.902	0.756
COM	0.420	0.190	0.354	0.802	0.549	0.553	<b>0.888</b>				0.918	0.789
EOU	0.313	0.081	0.505	0.471	0.171	0.641	0.457	<b>0.840</b>			0.914	0.706
PU	0.418	0.117	0.439	0.675	0.487	0.504	0.649	0.442	<b>0.881</b>		0.876	0.775
INT	0.460	0.132	0.571	0.761	0.478	0.644	0.752	0.522	0.798	<b>0.883</b>	0.912	0.780

Note: The diagonal indicates the square root of the AVE (discriminant validity). The data in the lower triangle correspond to the correlations between the factors. CR: composite reliability. AVE: average variance extracted. Delta > 30.

**Table 4.** Reliability and validity of the model – Spanish sample.

	PIIT	IMP	AUT	ATT	NS	CP	COM	EOU	PU	INT	CR	AVE
PIIT	<b>0.680</b>										0.694	0.493
IMP	0.136	<b>0.885</b>									0.915	0.784
AUT	0.009	-0.147	<b>0.732</b>								0.822	0.536
ATT	0.211	0.266	0.272	<b>0.861</b>							0.896	0.741
NS	0.127	0.387	-0.010	0.372	<b>0.888</b>						0.918	0.788
CP	0.190	-0.036	0.570	0.402	0.087	<b>0.804</b>					0.845	0.647
COM	0.109	0.111	0.400	0.435	0.211	0.351	<b>0.859</b>				0.894	0.739
EOU	0.149	-0.040	0.620	0.375	0.068	0.702	0.430	<b>0.770</b>			0.814	0.594
PU	0.066	0.070	0.355	0.482	0.160	0.271	0.449	0.306	<b>0.831</b>		0.870	0.691
INT	0.149	0.011	0.303	0.574	0.185	0.433	0.400	0.456	0.447	<b>0.787</b>	0.830	0.620

**Note:** The diagonal indicates the square root of the AVE (discriminant validity). The data in the lower triangle correspond to the correlations between the factors. CR: composite reliability. AVE: average variance extracted. Delta > 30.

**Table 5.** Measure invariance test.

Single group solutions	X2	df	RMSEA	SRMR	NFI	NNFI	CFI
Colombia (n = 290)	701.757	409	0.050	0.035	0.915	0.954	0.962
Spain (n = 294)	655.929	409	0.046	0.042	0.884	0.942	0.952
Equal form	1357.700	818	0.048	0.038	0.902	0.949	0.958
Equal factor loading	1463.240	844	0.050	0.161	0.894	0.943	0.952

**4.2. Invariance of measurement instrument**

The invariance of the measurement instrument consists of introducing constraints to validate that the latent variables represent the same in both groups Aldás, 2013. Equal form and equal factor loading analyses were carried out in this research using software EQS 6.3. Table 5 shows the results.

To determine if the constraints can be sustained, and confirm the invariance of the measurement instrument, Cheung and Rensvold (2002) proposed an approach based on the CFI difference between the results after equal form and equal factor loading, or ΔCFI. This approach indicates that when ΔIFC > 0.01, the constraints applied cannot be sustained, whereas when ΔCFI ≤ 0.01, the constraints are sustained, which means latent variables are the same in both subsamples. In this study, it was found that ΔCFI = 0.006; consequently, the invariance is confirmed.

**4.3. SEM and multi-group analysis**

Now, to contrast the research hypotheses, an SEM analysis and a Multigroup analysis are used to test the moderating effect of national culture in the proposed relationships. The relations are controlled by sociodemographic variables like age, gender, income, and user experience to better understand if the difference in the sub-samples is given by the culture or sociodemographic differences. Table 6 shows the results.

The control by sociodemographic variables shows that in the complete sample, just the user experience has a significant and positive effect on online purchase behavior (p = 0.034); that is, the more experience the user has, the more online shopping behavior exhibits. Age, gender, and income did not show a significant relationship with the key variables. On the other hand, when the sample is separated by country, income is significantly related to online purchase behavior: the Spanish subsample shows a negative relation, meanwhile Colombian subsample has no significant effect. The difference between both paths is significant at p = 0.017, which means Spaniard customers reduce online purchase behavior if their income is lower than Colombian subsample, not

**Table 6.** Results of SEM analysis and Multi-group analysis.

H	Relationship	Colombia		Spain		‡Δpath	p
		β	t	β	t		
H1	Online purchase intention → Actual purchase	-0.015	0.245	-0.159*	2.484	0.144*	0.05
H2	Attitude → online purchase intention	0.195*	3.997	0.373*	5.823	0.178*	0.99
H3	Subjective norms → online purchase intention	0.046	0.666	0.011	0.207	0.035	0.35
H4	PBC → online purchase intention	0.227*	3.041	0.173*	2.358	0.054	0.31
H5	Self-efficacy in online stores → Online purchase intention	0.191*	2.539	0.037	0.629	0.154*	0.05
H6	EOU → attitude	-0.050	0.667	0.221*	3.655	0.270*	0.99
H7	Perceived usefulness → attitude	0.500*	9.215	0.341*	4.941	0.158*	0.04
H8	Buying impulse → Online purchase intention	0.103*	1.791	-0.092	2.032	0.123**	0.08
H9	EOU → buying impulse	0.095	1.506	-0.029	0.452	0.502*	0.00
H10	Compatibility → Online purchase intention	0.265*	3.329	0.129*	2.349	0.136**	0.08
H11	PIIT → online purchase intention	-0.057	1.147	-0.013	0.130	0.045	0.643

‡X<sup>2</sup><sub>(df=893)</sub> = 1792.708; RMSEA (CI:90%) = 0.059 (0.055–0.063); CFI = 0.930; NNFI = 0.922.

\*p < 0.05; \*\*p < 0.10.

Colombian customers, who have the same behavior no matter the income.

Based on the results, the moderating effect of the national culture in six of the hypothesized relationships is confirmed with a significance of  $p < 0.05$ . The empirical study has shown that the impact of the perceived usefulness on attitudes in the Colombian sample is greater than that in the Spanish sample, although the hypothesis is positively verified in both sub-samples. The research suggested that the EOU would affect the buying impulse; although the effect was not significant in the whole sample or subsamples, there is a significant difference between the paths of Colombia and Spain, in Colombia, the relationship is positive and in Spain is negative, which demonstrates that national culture moderates the relationship. Also, one of the main contributions of this research is that buying impulse is considered a precursor of online purchase intention; this relationship was positively verified in the Colombian sample, whereas in the Spanish sample, a non-significant negative relationship was found. The results also indicate that the impact of compatibility on online purchase intention is greater in the Colombian sample compared to the Spanish sample, and in both markets, the relationship is significant. Finally, it is believed that national culture will have a moderating effect on the relationship between online purchase intention and online purchase behavior; this moderation was verified by the difference of paths; in Colombia, the relationship is not significant meanwhile in Spain, the effect is significant and negative. Neither the subjective norms nor the PIIT showed a significant effect on online purchase intention in either of the samples.

## 5. Discussion

This research has considered the differences in consumer behavior that underlie their national culture, since traditional behavioral theories have always emphasized a linear and generalizable prediction of behavior to any population studied, without the critical view of the differences in the customs and values of the place of birth and raise of individuals. Thus, substantial differences were found in the relationships previously established in the classical theory of behavior when comparing consumers from two very different regions with respect to their adoption of electronic purchasing. This research studied the variable of self-efficacy in online stores to measure consumers' perceived capability to make purchases on the Internet, based on previous jobs (Wang et al., 2013). The multigroup analysis indicated that the impact of self-efficacy in online stores on online purchase intention is significant in the Colombian subsample but not in the Spanish subsample. Thus, Colombian consumers, in general, have less experience in electronic purchases than Spanish consumers due to the incipient development of e-commerce in Colombia; consequently, self-efficacy in online stores influences their intention to adopt the electronic distribution channel. Conversely, Spanish consumers have the experience necessary to consider self-efficacy in online stores as something inherent, normal and secular, and therefore online purchase intention must originate from functional elements, as in the case of the PBC, or intrinsic elements, such as personal preferences. It is important to highlight the contribution in this research regarding the importance of self-efficacy in online stores for inexperienced consumers, as established in the literature (Vijayarathy, 2004; Wang et al., 2013). It is expected that, over time, consumers will be able to not only navigate and find information of interest but also better evaluate the accuracy and usefulness of the information found (Chuang et al., 2015), building a more responsible and objective consumer society.

This study added the emotional factor to the analysis of buying impulse, which is lacking in traditional analyses, intending to contribute information to the literature on the effect of impulse on online consumer behavior. This analysis also explains the formation of behavioral intentions in the studied markets. The research explored the impact of EOU on buying impulses because it is a relationship barely studied in the literature. It is assumed that if the consumer perceives that purchase takes no effort, then an impulse to buy will be more likely because it is

known that purchase involves investment in terms of money, time, and travel. If these are absent, the consumer will spend less time thinking about the purchase, and, therefore, the possibility of buying unintended products will be greater (Stern, 1962). In empirical research, the relationship is significantly verified in the Colombian subsample, but not in the Spanish subsample. The literature indicates that EOU is one of the factors that stimulate positive emotions in the consumer, which makes impulse buying by the customer more likely (Verhagen and van Dolen, 2011), as is the case of Colombia. However, in the case of Spanish consumers, the relationship was not significant, which coincides with the research of Liu et al. (2013), who explored the relationship between EOU and the positive emotions understood as instant gratification, which results in impulse buying.

It should be noted that the research carried out by Liu et al. (2013) was applied on consumers from China, which is a restrictive society. According to Hofstede et al. (2010), China's indulgence index is only twenty-four points, unlike Colombia's, which is eighty-three points. We conclude then that indulgence in the consumer can affect the relationship between EOU and buying impulse, assuming that lower perceived effort means a greater tendency towards satisfying the impulses to enjoy life and have fun (Hofstede et al., 2010). The results of this research are expected to provide information of interest to educational institutions and stimulate further research on impulse buying behavior, comparing results in indulgent and non-indulgent countries.

Following the same line of thought, the relationship between buying impulse and online purchase intention is also found to be moderated by the national culture. It was found that there was a significant effect on online purchase intention in the Colombian subsample but not in the Spanish subsample. This result may be related again with indulgence: Colombian consumers are significantly more indulgent than Spanish consumers (Hofstede et al., 2010), which can be translated to the search for instant gratification that can be obtained through an impulse purchase. Besides, given the short-term perspective of the Colombian context, it would be natural that unplanned expenditures in impulse purchases would not worry them.

The variable of compatibility, proposed as a precursor of online purchase intention, has been positively verified in the literature (Andrews and Bianchi, 2013). In this case, the relationship was positively and significantly confirmed in both subsamples, although there is a significant difference between them. This difference is explained by culture: Colombia is a collectivist country, whose inhabitants' associate purchases with social processes and, therefore, collective processes. Thus, this type of consumer needs to perceive greater compatibility with online buying to prompt an online purchase intention.

Finally, the construct of online purchase intention was proposed as a precursor of online purchase behavior, as described in the study by Ajzen (1991), among others. The evidence indicates that the relationship is significantly and positively verified in the Colombian subsample, as supported by the literature. However, in the Spanish subsample, the relationship is negative and significant. This means that for Spanish consumers, online purchase intention has a negative effect on online purchase behavior. This may be due to the current economic situation of the country because according to Hampson and McGoldrick (2013) and Pappas (2016), the influence of the economic recession can mean that even if the consumers have the intention to buy, their awareness of their spending habits prevents them from buying, which establishes a negative relationship.

## 6. Implications and future research

The theory claims that measuring behavioral intentions is the ideal method for predicting consumer behavior (Pascual-Miguel et al., 2015). For this reason, it was proposed that online purchase intention was a determinant of online purchase behavior. However, the relationship was significantly contrasted, although negatively in the Spanish sub-sample, contrary to the results of research such as Escobar-Rodríguez and



Carvajal-Trujillo (2014). The results show a clear discontinuity between intention and actual behavior, which confirms that such an intention emerges as an inadequate path to predict the actual behavior of the customer. This also casts serious doubts as to whether the intention is automatically transformed into an actual purchase, which coincides with the research of Zaharia et al. (2016), and highlights the importance of analyzing the relationship between intentions and behavior in greater depth, as proposed by Lim et al. (2016).

The study also shows a discontinuity of generally accepted antecedents of online purchase intention, such as self-efficacy, subjective norms, and PIIT. The fact of contrast the theories that have been formerly accepted in modern and different contexts allows a wider perspective of the theory and its limitations. E-commerce is the way consumers make purchases more often every time, and the study of consumer behavior should provide new theories or improve before predicting consumers' decisions. Based on the results of this study, it is proposed that consumers with less experience in e-commerce need more functional elements to adopt it; meanwhile, experienced consumers need more hedonic elements. Also, the study indicates that buying impulse is an antecedent of online purchase intention in markets with short-term orientation, which can lead to creating design strategies for online stores in those cultures. The relevance of the electronic transformation has been stamped in many industries, transcending to B2B commerce (Wei and Ho, 2019) and e-learning (Ivanaj et al., 2019).

In Colombia and the emerging economies in general, most companies are SMEs (micro-, small- and medium-sized enterprises). This type of company has a small number of employees and, generally, low capital. These are family businesses with a short-term vision focused on results and, consequently, on sales. The limited vision and knowledge of the market usually lead to dissolving the company. To ensure success, companies need to be able to look ahead, plan, and not focus only on daily sales. The paradigm shift has piqued the interest of companies in joining forces with educational institutions to better understand consumer behavior in e-commerce, a synergy that has advanced in developed countries but that in emerging economies is still in its early stages. The government must play a fundamental role in uniting small- and medium-sized business owners with educational institutions so that each can acquire knowledge and mutually benefit through training, professional practices, and participation in research projects.

According to the eCommerce Observatory (2016), companies—mainly large-sized companies—have turned to digital transformation to increase income and reduce costs, which means greater profitability for shareholders. One of the major drivers of SMEs adopting the electronic channel is their access to international trade. The ubiquity of the Internet allows information to be sent to any destination. Thus, employers do not have to make significant financial investments in marketing their products. However, business owners should consider various issues before entering international trade. The adaptation of messages, as well as the products and services to the target culture, is a *sine qua non* condition to reaching the market and securing the first step to commercial success. Besides, it must be considered that the Spanish consumer is more experienced, is self-efficient in online stores, and usually has the tools necessary to carry out electronic purchases, Colombian consumers are not.

**Appendix 1. Scales used in the study**

Factor	Items
PIIT	If I hear about a new technology, I will find a way to interact with it
	Among my peers, I'm usually the first to try a new technology*
	In general, I am reluctant to try new information technologies (r)
	I like to experiment with new information technologies

(continued on next column)

This research focused on learning and understanding the motivational factors that determine the behavioral intentions of consumers in e-commerce in Colombia and Spain by carrying out an empirical study in the selected universes. However, the research has limitations. The study was conducted based on estimates of national culture of Hofstede and WVS to establish a difference between Colombian and Spanish consumers. Although these estimates are widely accepted to compare the national culture, future research should measure the culture of each consumer independently to empirically contrast the effect of cultural values on the relationship between the studied variables. In the other hand, in this study, the frequency of purchase was used as the variable to measure online purchase behavior, following the line of work of other studies. However, some authors claim that in addition to the frequency of purchase, it is advisable to analyze the average cost of purchase or the proportion of the budget used in online buying versus traditional shopping. Adding these items and exploring the relationship between intentions and behavior again would provide more decisive conclusions for this assumption. Another limitation of the study lies in the fact that external factors may and make impact consumer decisions, those factors were not included in this study, and it is recommended to use them in broader research.

**Declarations**

*Author contribution statement*

N. Peña-García: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

I. Gil-Saura: Conceived and designed the experiments.

A. Rodríguez Orejuela: Conceived and designed the experiments; Performed the experiments.

J. R. Siqueira-Junior: Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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*Competing interest statement*

The authors declare no conflict of interest.

*Additional information*

Data associated with this study has been uploaded to Mendeley (DOI: 10.17632/wy4cw82jzp.1).

(continued)

Factor	Items
Buying Impulse	“Just do it” describes the way I shop* I often buy things without thinking about it “I see it, I buy it” describes me “Buy now, think later” describes me
Self-efficacy	I can get to a specific website with a browser I could easily use the Web to find information about products or services I feel comfortable searching the Internet for myself I would be able to use the Web by myself to find online stores If I wanted to, I would be able to buy in an online store in the next 30 days* If I wanted to, I’m sure I could buy from an online store in the next 30 days*
Attitude	Buying in an online store is attractive I like to buy in online stores Buying in online stores is a good idea
Subjective norms	People who are important to me, believe I should buy from online stores People who influence me, think I should buy in online stores People whose opinions are valuable for me, would rather I buy in online stores
Perceived control behavior	I would be able to use Internet for online shopping Using Internet to purchase online is entirely under my control I have the resources, knowledge and skills to purchase online
Compatibility	Buying in an online store would be compatible with every aspect of my life I think buying from an online store fits well with the way I like to buy Buying in an online store is compatible with my current situation Buying in an online store fit with my lifestyle*
Ease of use	My interaction with online stores is clear and understandable Interacting with an online store does not require a big mental effort I think online stores are easy to use
Perceived usefulness	Online stores improve my performance in search and purchase of products/services Online stores allow me to search and buy faster products/services Online stores improve my effectiveness when buying Online stores increase my productivity in the search and purchase of products/services
Online purchase intention	If the opportunity arises, I intend to buy from online stores If given the chance, I can predict what I should buy from an online store in the future I am likely to transact with an online store soon
Purchase behavior	How often do you buy online?

\*Items were dropped during CFA analyses to improve fit indices.

Data available (Peña García et al., 2020).

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