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Exploring the factors affecting the use of C2C in Colombia

Exploración de los factores del uso del C2C en Colombia

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ABSTRACT

This study analyses the factors that users of consumer-to-consumer (C2C) commerce value as direct influences in the intention to use and the acceptance of a marketplace. An empirical model is formulated, which integrates three variables that evaluate trust and, in turn, other variables that influence C2C intention and purchases, taking a sample of 686 surveys gathered using the Internet in Colombia. The results show that trust is a fundamental factor in this type of electronic commerce in Colombia, given that C2C users seek intermediation pages with third-party recognition (TPR) and high web quality; similarly, key variables in the adoption of this type of commercial platform include finding low prices and social influence. The perception of trust in this type of electronic commerce is a broader concept that requires the analysis of psychosocial factors. For companies that manage marketplaces, this study allows them to focus on key actions and tools in their websites. This study allows one to get to know the users of this transactional system, specifically for the Latin American region, highlighting the variables that they most consider when engaging in direct commerce between people. The results show that C2C requires marketplaces that guarantee the necessary conditions for a purchase/sale transaction with trust and quality.

Keywords: Electronic purchase, C2C, adoption, UTAUT, electronic commerce, marketplace.

RESUMEN

Este estudio, analiza los factores que los usuarios del comercio entre personas C2C valoran como influyentes directos en la intención de uso y adopción de un Marketplace. Se plantea un modelo empírico que integran tres variables que examinan la confianza y a su vez otras variables que inciden en la intención y compra C2C, tomando una muestra de 686 encuestas recogidas por internet en Colombia. Los resultados muestran que la confianza es un factor fundamental en este tipo de comercio electrónico en Colombia, teniendo que los usuarios del C2C buscaran páginas de intermediación que tengan third party recognition (TPR) y calidad en su web, así mismo, variables claves en la adopción de este canal comercial son encontrar precios bajos y la influencia social, la percepción de confianza en este tipo de comercio electrónico, es un concepto más amplio que requiere un análisis de factores psicosociales. Para las empresas que gestionan los Marketplace, este estudio les permite enfocarse en acciones y herramientas claves de sus sitios web. Este estudio permite conocer a los usuarios de este sistema transaccional, específicamente para la zona latinoamericana, resaltando cuáles son las variables que más tienen en cuenta para comercializar entre personas. Los resultados demuestran que el C2C requiere de Marketplace que garanticen las condiciones necesarias para una compra/venta en condiciones de confianza y calidad.

Palabras clave: Compra electrónica, C2C, adopción, UTAUT, comercio electrónico, marketplace.

1. INTRODUCTION

Electronic commerce between individuals, termed "C2C", is a commercial model used by people to conduct a sale or purchase directly between two parties. This model has different transaction rules than the classic commerce model involving business to people (Sukrat and Papasratorn 2018; Zhao *et al.* 2019). C2C has become one of the most widely used virtual commerce platforms in the world in terms of social and commercial relationships since the Internet revolution (Yoon and Occeña 2015). Data are important for electronic commerce between people, given that commercial intermediation pages, also called "marketplaces", hosted by companies such as eBay, Alibaba, Mercado-Libre, and Amazon, enable people to sell new and used products to other people regardless of distances or boundaries, performing an intermediation process that integrates the entire logistical process of shipping, payments, and post-sale services and returns (Anwar 2017).

Worldwide C2C has recorded 105 billion dollars market size as compared to 71 billion dollars for B2C e-commerce In 2014 (Dan 2014), three of e-commerce C2C (Consumer-to-Consumer) website has become the most visited websites in 2017 (Dachyar and Banjarnahor 2017). In Latin America, Internet users have typically preferred C2C vs. commerce between businesses and people (B2C) with regard to electronic commerce, indeed, marketplaces were among the 10 most important web pages in terms of visitor traffic and users in 2014 (Katz, Agudelo, Bello, and Rojas 2015), and the OLX marketplace had 200 million active users worldwide in 2016 (Enter 2018).

Studies on C2C adoption that are specifically related to user intention and usage of buyers and sellers, need to analyse more variables (Leonard and Jones 2010), given the characteristics of these types of virtual commerce transactions between people and the security and trust issues stemming from distance purchasing agreements, as the buyer assumes that the acquired product will reach its destination in the agreed upon condition, but in many cases, the agreement is not fulfilled by both parties (Lu *et al.* 2012). Recent studies conducted in Asia, particularly in countries such as China, have analysed the causal relationships among the recommendations of the virtual community regarding their experience with marketplaces, highlighting the importance of perceived quality and credibility in products and sellers (Shihab *et al.* 2018; Wei *et al.* 2019; Zhu *et al.* 2015). These studies support the notion that social influence through comments, suggestions, and experiences of the community directly affect purchase intention in C2C (Jing and Peng 2010). In turn, another study has stated that the satisfaction level with purchases in C2C marketplaces is related to factors such as price and seller reputation (Du *et al.* 2012). With respect to seller reputation, the perception of trust is a key factor in the use of C2C marketplaces, highlighting the perceived security of the website as an aspect that influences people's purchase intention (Lu *et al.* 2012). Regarding this aspect, marketplaces are adopting the use of third-party recognition (TPR) to offer the client a perception of security surrounding the commercial transaction (Jones and Leonard 2014).

Given that it is clear that C2C is the leading business model on the American continent and the most widely used electronic commerce format in Latin American countries, the development of C2C in the marketplace has found an avenue that best favours and promotes this type of buying and selling because it meets the needs of sellers, who are mostly people who sell used products or small companies that do not have an electronic platform for selling their products and that find these types of pages to be economic and efficient platforms, and of buyers, who search for products based on the characteristics of price and use offered in C2C but who are exposed to the uncertainty of buying remotely from unknown people or businesses (Katz *et al.* 2015).

The evolution of marketplaces has generated better security tools related to trading conditions, not only regarding the protection of confidential information or payment methods but also with respect to tracking shipment and post-sale processes, such as returns and warranties (Yoon and Occeña 2015).

Against this backdrop and given that few studies on C2C buyers in the Latin American region exist except for studies on the general adoption of e-commerce in countries such as Chile (Andrews and Bianchi 2013; Bianchi and Andrews 2012; Torres-Moraga and Barra 2011) and Colombia (Sánchez-Torres *et al.* 2017b), this study focuses on the C2C market in Colombia because, as described by (Katz *et al.* 2015), it is one of the Latin American countries that has seen the most growth in this type of commerce, it presents issues of security and high regulation with regard to transactions on C2C platforms (Blacksip 2017; Díaz 2014), and there are few studies that analyse consumer behaviour in this context (Sánchez-Torres and Arroyo-Cañada 2016).

Likewise, it is also necessary to analyse the trust variable in relation to this type of market because this variable intervenes in complex ways throughout the process (Ter Huurne *et al.* 2017), by examining all the variables that affect trust in this type of electronic commerce (Torres-Moraga and Barra 2011).

Therefore, as a general objective, we propose to evaluate whether clients of C2C marketplaces make decisions about using this type of electronic commerce based on a set of variables that have been supported in previous studies (Al-sharafi *et al.* 2016; Wu *et al.* 2015; Yoon and Occeña 2015; Zalatar 2012; Zhu *et al.* 2015), which are grouped into a model proposed in this article. Thus, the specific objectives of this study are as follows: a) to examine whether factors such as trust perception, risk perception surrounding buying from third parties, social influence, and the search for low prices influence the adoption of C2C; and b) to confirm whether the perception of trust in C2C is, in turn, related to factors that precede it such as web quality and TPR as well as personality traits (propensity to trust and interpersonal trust).

This paper was developed in the following manner. First, a model was proposed based on a review of the research developed to date on the adoption of C2C electronic commerce, proposing the most influential variables for this type of commercial relationship (Figure 1); then, we present how the empirical research was developed and how the information was analysed.

2. THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

2.1. *Block I: The influence of C2C purchase intentions on purchase*

Models of acceptance of innovation or technology have been developed to understand the behaviour of electronic buyers giv-

en the characteristics of a platform. The diffusion of innovations theory proposed by Rogers (1995) is the first theory that analysed populations from a macro perspective using a cyclical model of acceptance involving the timing and characteristics of acceptance of an innovation in a population group. In addition, social, cognitive, and behavioural psychology have developed different theories that explore in depth the relationships among the attitudes, intentions, and behaviours of individuals (Agudo Peregrina 2014). First, we present the theory of reasoned action (TRA), which establishes a model in which intention is the factor that generates a behaviour; such intention is affected by the attitude towards the behaviour and subjective norms (Fishbein and Ajzen 1975). Second, social cognitive theory (SCT) presents a behavioural model based on the influence of personal and environmental factors on the behaviour of the individual himself, recognizing self-efficacy as an important concept (Bandura 1977; Bonera 2011). The theory of planned behaviour (TPB) (Ajzen 1991) adds the concept of perceived control to the TRA (Bagozzi *et al.* 1992). Finally, the most widely applied theory in the study of e-commerce is the technology acceptance model (TAM) (Davis 1993), which predicts behaviour prior to the intent to act based on the attitude of the individual, which is affected by perceived utility and perceived ease of use (Bukhari *et al.* 2013). All technology acceptance theories have been grouped by Venkatesh *et al.* (2003, 2012) into the unified theory of acceptance and use of technology (UTAUT, UTAUT 2), which is based on five constructs (performance expectation, effort expectation, social influence, facilitating conditions, intention to use, low price buying personality and innovativeness).

Studies on the behaviour of the virtual consumer have become widespread around the world based on the models of technology adoption, for example, regarding B2C (Alghamdi *et al.* 2013; Chiu *et al.* 2014; Frasquet Deltoro *et al.* 2012; Sánchez-Torres *et al.* 2017b), electronic banking (Chong *et al.* 2010; Hui Ling *et al.* 2015; Lee 2009; Montazemi and Qahri-Saremi 2015; Narayanasamy *et al.* 2011; Oliveira *et al.* 2014; Riffai *et al.* 2012), and e-government (Al-sharafi 2014; Fakhoury and Aubert 2015; Krishnaraju *et al.* 2016; Nasri and Abbas 2015; Nations United 2014). Likewise, various e-commerce studies have analysed different products and contexts (Arce-Urriza and Cebolla-da-Calvo 2011; Bianchi *et al.* 2017; Čater and Čater 2010; Escobar-Rodríguez and Bonsón-Fernández 2016; Escobar-Rodríguez and Carvajal-Trujillo 2014; Grandon and Pearson 2004; Jalali *et al.* 2011; Lee and Chang 2011; San Martín and Herrero 2012; Sanz Blas *et al.* 2013) as well as the cultural and national differences pertaining to digital consumers (Alshare *et al.* 2011). In all these studies, it was shown that purchase intention is the factor that precedes purchase and repurchase behaviour; it is thus necessary to test it in the context of C2C.

Hypothesis:

H1: The C2C purchase intention in a marketplace directly influences C2C purchases.

2.2. Block II: Social influence, low prices and perceived risk as antecedents of C2C purchase intention

The first variable of interest is social influence. This concept is recognized in consumer behaviour as a subjective norm (Venkatesh *et al.* 2003, 2012); it relates to the influence of social factors and image and is supported in e-commerce studies (Dass and Kumar 2014; Escobar and Carvajal 2014; Kim *et al.* 2009). Some studies have shown contradictory data because, in e-commerce, factors such as Internet use maturity and socioeconomic level, among others, may cause the buyer to not place value on social influence as an influencing factor in electronic purchases (Sánchez-Torres and Arroyo-Cañada 2016; Tan *et al.* 2013).

Low price buying personality is interpreted as the favourable price-opportunity cost perceived by the client compared to other traditional trading platforms (Escobar and Carvajal 2014); it has been supported in several studies on the adoption of electronic commerce. Mohamed Fadel Bukhari *et al.* (2013) and Bonera (2011) find that in C2C clients search for used items with much lower prices than those found in B2C sales portals. In this respect, Duan (2010) notes that marketplaces offer a ranking of all prices to promote the selection of the lowest prices.

Finally, perceived risk is the subjective belief that there is a possibility of suffering a loss in terms of the final desired result in a C2C transaction (Wei *et al.* 2019); therefore, it increases negative expectations regarding attitude and the use of this platform (Luo *et al.* 2010). Although there are few studies on the perceived risk of C2C purchases, the study by (Wu *et al.* 2015) validates its negative influence on purchases in C2C marketplaces. Risk is a factor present in all types of electronic commerce, although it is higher in C2C purchases because sellers are the type of people whose commercial information is the most difficult to verify or validate (Tombe *et al.* 2018).

Hypotheses:

H2: Social influence in the use of C2C in a marketplace positively affects C2C purchase intention.

H3: The low price buying personality trait in the use of C2C in a marketplace positively affects C2C purchase intention.

H4: The perceived risk in the use of C2C in a marketplace negatively affects C2C purchase intention.

2.3. Block III: Trust and its importance in C2C purchase intentions

Trust with regard to Internet purchases consists of a person's having an established expectation within contextual parameters and restrictions of good faith regarding the actions performed by another person after an interaction between both parties (Yoon and Occeña 2015). Trust with regard to Internet purchases is a factor that has been studied in the context of B2C purchases, in which the client, based on previous purchasing experiences, tends to believe that, in general, conditions of security, privacy, and warranty exist, encouraging the client to trust his web vendors (Al-dwairi 2013; Al-Maghrabi and Dennis 2011; Al-sharafi *et al.* 2016; Kaplan and Nieschwietz 2003; Venkatesh *et al.* 2012, 2003). For purchases in C2C marketplaces, the same does not occur. In this case, the client generally does not create a connection with the vendor, who in many cases is incognito. In addition, in many cases, the product cannot be tested or examined, and there is no environment that favours complete trust (Yoon and Occeña 2015). Thus, it is very important that the trust generated by the buyer positively affects C2C purchases. Therefore, it is important here to understand that trust is built into the site and in regard to the vendors that are presented on the site; it is thus important to examine which constructs are the precursors of this trust. First, the buyer

has to evaluate the web quality of the marketplace, that is, its navigability and efficiency and the services offered by the site. On the other hand, the trust that the seller can generate is linked to two aspects tested by (Yoon and Occeña 2015). The first is trust, which begins with the individual's personality, which refers to a personality factor that facilitates trusting strangers, and the other is interpersonal trust, which reflects the degree to which people trust the information they obtain from other sources about the seller.

The web quality of a marketplace is defined as the positive evaluation of the marketplace characteristics by the user (Yoon and Occeña 2015), that is, the tools that the site offers the buyer to make purchases and how these tools work throughout this process. Given that offering high quality web platforms increases user trust, several scales have been developed to measure this aspect of web pages (Lee and Shin 2014; Zalatar 2012; Zeithaml et al. 2002). In the case of C2C, web quality's direct effect on intention to use has been confirmed (Shihab et al. 2018; Sukrat and Papasratorn 2018; Zalatar 2012).

Buyers on C2C websites seek a site that offers warranties and third-party-recognized security measures that serve as guarantors of fulfilment or site certification. When buyers see this type of security seal, it is more likely that they will enter into a purchasing transaction even if the vendor is unknown (Jones and Leonard 2014, 2008). Third-party recognition (TPR) for C2C may also involve the utilization of external payment systems such as PayPal, offering the buyer security in the sense that if there is dissatisfaction with the purchase for any reason, the third party will be responsible for refunding the money if necessary. In the study by (Yoon and Occeña 2015), this variable is found to be significant when analysing trust in C2C electronic commerce; for buyers to use C2C marketplaces, it is essential to have guarantees with regard to the processes of purchase, payment, delivery and after-sales services. Only sites that guarantee security accreditation support will generate more confidence among buyers to make this type of purchase.

Trust begins with the individual's personality, starting with personal experience as well as cultural characteristics. From there, individuals may vary in their ability to trust others, which may influence their trust in Internet purchases (Gong 2009; Leonard and Jones 2019; Yoon and Occeña 2015). Latin American culture exhibits characteristics that make it prone to trust due to polychromic societal characteristics, especially in Colombia (Sánchez-Alzate and Sánchez-Torres 2017a), including being more flexible in the face of the uncertainty generated by electronic purchases (Lee et al. 2005). A high degree of communication among its members also occurs, which increases trust in the use of electronic commerce (Gong 2009). Therefore, the propensity-to-trust personality trait has been previously validated as a factor that influences trust with regard to electronic purchases and therefore can be a predictor of C2C purchase because it is a transaction in which the buyer does not really know the seller, only the marketplace.

Finally, another important factor in C2C electronic commerce is the trust of clients in the information (Yoon and Occeña 2015) that they may receive from other buyers about the products that they will purchase or the reputation of sellers. The information asymmetry generated by the separation of buyers and sellers in terms of time and space prevents the buyer from feeling certain in regard to the product, the transaction, and its fulfilment; thus, the buyer will seek information related to these elements (Utz et al. 2009). Doing so requires that marketplaces offer spaces to evaluate the seller and to establish buyer validation and other aspects that allow clients to share information by word of mouth because this constitutes a very important factor affecting trust in C2C purchases (Yoon and Occeña 2015).

Hypotheses:

H5: The perception of trust with regard to the use of C2C in a marketplace positively affects the C2C purchase intention.

H6: The web quality of the marketplace positively affects trust in the use of C2C.

H7: The propensity-to-trust personality trait positively affects trust in the use of C2C.

H8: The TPR of the marketplace website positively affects trust in the use of C2C.

H9: Interpersonal trust positively affects trust in the use of C2C.

Proposed model

A model is therefore proposed that integrates the hypotheses defined above to examine the adoption of C2C:
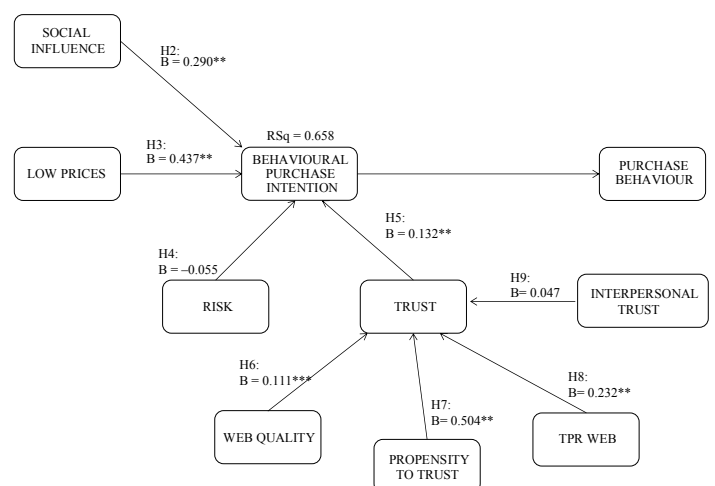

Figure 1
Proposed C2C model
Source: Own elaboration

3. CALCULATION

3.1. Sampling and data collection

Data collection was based on an electronic questionnaire, as this mechanism has been effectively validated in other studies (Agudo Peregrina 2014; Escobar-Rodríguez and Carvajal-Trujillo 2014). To facilitate the responses, a multi-item-per-construct methodology was employed, using Likert-type scales ranging from 1 (strongly disagree) to 7 (strongly agree) for the questionnaire responses, to effectively measure variables that are not directly observable (Churchill and Iacobucci 2004). Similarly, a preliminary test was performed on a group of experts composed of 30 university professors in Colombia to verify that the questions were understood in the same manner and that there were no semantic problems. The questionnaire

(Appendix) was prepared based on the scales translated from English proposed by Agudo Peregrina (2014), Escobar-Rodríguez and Carvajal-Trujillo (2014), San Martín and Herrero (2012), Venkatesh *et al.* (2012) and Yoon and Occeña (2015).

To structure the sample, demographic quotas were used in order to include the perceptions of the residents of the country's main cities, targeting the main population regions of Colombia, namely, the principal cities of Bogotá, Medellín, and Cali, and incorporating intermediate cities into these based on their geographic proximity (Table 1). However, the total sample was determined by PLS, having an acceptable sample for the model to be tested (Hair *et al.* 2017).

The data collection period occurred from November 2015 to May 2016. To achieve the fieldwork objectives, a national team was established, with coordinators in each of the main cities, to manage the administration of the survey. A total of 702 questionnaires were collected, of which 26 exhibited problems regarding answer consistency, leaving a final sample of 686 valid questionnaires. The sample exhibited the following characteristics: more men (55%) than women (45%) said that they used C2C; socioeconomics was also a strong factor in this sample, as 78% of buyers exhibited an income equal to or greater than the mean income; similarly, respondents exhibited high education levels, with 84% having degrees more advanced than a high school diploma; age is also a factor to highlight: 66% of buyers belonged to younger generations in the range of 18 to 34 years of age; in addition, experience using the Internet amounted to five years or more for 91% of buyers; finally, the sample was concentrated in the country's capital, with 40% of the data originating from there (Table 1).

Table 1
Sample characteristics

Demographic profile		Profile of Internet and e-commerce adoption	
Gender:	Age:	Experience with Internet Use:	
Men 55%	18-34 years 66%	More than 10 years	56%
Women 45%	35-44 years 22%	Between 5 and 10 years	36%
	45-55 years 12%	Between 1 and 5 years	9%
Education level:		Location:	
Primary 1%		Zone 1	
Secondary 15%		(Antioquia, Caldas, Quindío, Risaralda)	23%
Technical 24%		Zone 2	
University 20%		(Bogotá, Boyacá, Cundinamarca)	40%
Graduate 40%		Zone 3	
Economic level (income):		(Cauca, Valle del Cauca)	29%
		Zone 4	
Very Low 3%		(Atlántico, Bolívar, Cesar, San Andrés, Magdalena, Santander)	
Low 19%			
Medium 48%		Zone 5	7%
Medium-high 17%		(Arauca, Caquetá, Huila Meta, Nariño, Tolima, Vaupés)	
High 10%			
Very high 3%			1%

Source: Own elaboration (adapted from the stratification used in Colombia based on public sources).

3.2. Analysis of data and results

Latent variable regression analysis was performed using the program Smart-plus 3.0 PLS, which is based on the partial least squares (PLS) optimization technique (Hair *et al.* 2017). This is a multivariate technique for testing recommended structural models in exploratory models such as that in this study. It was also used because the model includes a large number of items (Escobar-Rodríguez and Carvajal-Trujillo 2014; Kiwanuka 2015). Data analysis was conducted in two stages: the first stage estimated the significance of the measurement model, and the second examined the validity of the structural model.

Table 2
Loads of the indicators

Indicator	Load	t-value*
IT1	0.884	61.645
IT2	0.928	78.437
IT3	0.892	62.584
IT4	0.838	42.144
WQ1	0.933	109.203
WQ2	0.936	66.838
WQ3	0.897	56.272
PR1	0.922	74.988
PR2	0.934	96.400
PR3	0.941	95.317
BI1	0.927	111.388
BI2	0.915	94.233
BI3	0.904	79.650
NT1	0.880	62.148
NT2	0.916	78.254
NT3	0.924	102.278
PO1	0.933	91.148
PO2	0.906	74.251
PO3	0.916	74.352
TPR1	0.931	23.818
TPR2	0.943	30.430
TPR3	0.935	19.662
PT1	0.910	69.510
PT2	0.940	146.212
PT3	0.916	105.323
SI1	0.933	111.439
SI2	0.917	94.716
SI3	0.830	32.930

Note: All items had significance with p-value < 0.001. IT: Interpersonal Trust, WQ: Web quality, NT: Natural propensity to trust, PR: Perceived risk, TPR: Third-party recognition, PO: Tendency towards low prices, PT: Trust, SI: Social influence, BI: Purchase intention.

Source: Own elaboration

3.3. Validation of the measurement model

Initially, the validation process for the measuring instrument was performed based on convergent validity; then, the discriminant validity of the constructs and the reliability of each item were evaluated. The convergent validity of each construct was acceptable because all items had loads that were greater than 0.505 (Hair *et al.* 2014); the individual reliability of each item was measured by the correlation loads of each item compared to each variable, finding that the loads for each indicator were significant in their entirety (Table 2). To measure the internal measurement coherence of all indicators in relation to their corresponding variables, Dillon-Goldstein's ρ, also known as the composite reliability index, was determined; all resulting values were higher than the minimum acceptable value of 0.70 (Gefen *et al.* 2000). The Cronbach's alpha value was also determined (Table 3), obtaining values greater than 0.7, the minimum allowable value for confirmatory studies (Churchill and Iacobucci 2004). Finally, the convergent validity was analysed again considering the variance, that is, determining whether the variance that exists between the indicators and their construct is similar, which means that it must be greater than 0.50 of the variability explained by the indicators (Fornell and Larcker 1981).

Table 3
Convergent validity of indicators

Variable	Cronbach's alpha	Composite reliability	Average Variance Extracted (AVE)
Web quality	0.912	0.945	0.850
Trust	0.925	0.945	0.850
Interpersonal Trust	0.914	0.929	0.813
Social influence	0.947	0.923	0.800
Purchase intention	0.900	0.940	0.838
Tendency towards low prices	0.981	0.942	0.844
TPR web	0.917	0.952	0.869
Natural propensity to trust	0.985	0.939	0.793
Perceived Risk	0.938	0.958	0.883

Source: Own elaboration

In the second stage, discriminant validity was evaluated through a comparison between the average value for each variable and the correlation of each construct of each variable squared, finding that the values obtained for the square root of the average are higher than the constructs. Thus, it can be said that each variable is more highly related to its own items than with those of the remaining variables, and therefore, the discriminant validity of the measuring instrument is defined (Fornell and Larcker 1981) (Table 4). Similarly, a test used by

Henseler and Ringle (Table 5) was conducted, finding that all values are below 0.90, therefore confirming that the variables exhibit an acceptable level of discriminant validity (Henseler *et al.* 2014).

Table 4
Discriminant validity of indicators - Fornell & Larcker test

Web quality	**0.922**									
Use C2C	0.140	**1.000**								
Trust	0.690	0.147	**0.922**							
Interpersonal Trust	0.688	0.095	0.597	**0.902**						
Social influence	0.465	0.169	0.556	0.512	**0.895**					
Purchase intention	0.584	0.272	0.518	0.467	0.598	**0.916**				
Tendency low prices	0.696	0.171	0.538	0.591	0.562	0.655	**0.918**			
TPR web	0.824	0.130	0.706	0.695	0.519	0.596	0.712	**0.932**		
Natural propensity to trust	0.705	0.180	0.773	0.618	0.549	0.505	0.548	0.695	**0.890**	
Risk	0.331	-0.021	0.181	0.340	0.190	0.145	0.276	0.277	0.250	**0.940**

Source: Own elaboration

Table 5
Discriminant validity of indicators –Henseler & Ringle test

	Web quality	Use c2c	Trust	Interpersonal Trust	Social influence	Purchase intention	Tendency towards low prices	TPR web	Natural propensity to trust
Use C2C	0.146								
Trust	0.754	0.154							
Interpersonal Trust	0.767	0.101	0.663						
Social influence	0.512	0.180	0.621	0.578					
Purchase intention	0.643	0.284	0.568	0.523	0.658				
Tendency towards low prices	0.765	0.178	0.590	0.659	0.616	0.722			
TPR web	0.897	0.136	0.767	0.769	0.566	0.652	0.776		
Natural propensity to trust	0.773	0.187	0.746	0.689	0.617	0.553	0.602	0.757	
Risk	0.360	0.022	0.197	0.375	0.205	0.157	0.303	0.298	0.271

Source: Own elaboration

Ultimately, no differences were found within the sample. The fact that all the respondents belonged to the same geographical region allows us to assume that Colombians behave in the same way with regard to these types of purchases.

4. RESULTS

Continuing with the analysis, the structural model test was performed, and re-sampling was conducted using the bootstrapping technique, with 1,000 sub-samples, an acceptable number for conducting this test (Hair *et al.* 2017), from the study's data and comparing the significance of the model parameters. All of this was done because the model fulfilled its predictive capacity by obtaining R squared values greater than 0.10 for the explained variables (Hair *et al.* 2014). The R squared value was 0.658 for intention to use C2C and 0.520 for C2C trust (Figure 2).

In terms of confirming or disproving the hypotheses, we found that hypothesis 1 is significant (B = 0.272**), with a positive effect of intention to use C2C on purchasing in a marketplace, meaning that it is also a good predictor of the C2C purchasing decision process in Colombia. In turn, hypothesis 2 is positively supported (B = 0.290**), showing that for buyers, social influence is important when using C2C, a result that reinforces the findings of other studies on this type of commerce (Ter Huurne *et al.* 2017). Colombian buyers consider the recommendations of their immediate community when using and buying in a C2C marketplace. Hypothesis 3 is supported (B = 0.437**), showing a positive effect of searching for low prices on the use of C2C, which confirms that buyers highly value finding low prices in this type of electronic commerce, which, in turn, influences its adoption. We consider this to be a valuable finding, since this influence had only been seen in the online purchase of airplane tickets (San Martín and Herrero 2012), and it highlights the nature of this type of contract where second-hand products, discounted products or wholesale products are usually sought. Hypothesis 4 (B = -0.055) is not supported, which means that, in this case, buyers do not perceive risk as a decisive aspect for buying in C2C in this sample.

The result for hypothesis 5 is significantly positive (B = 0.132**), validating trust as a precursor for the intention to use C2C marketplaces. On this basis, we can examine the hypotheses based on influencing factors. The first variable, which is marketplace web quality, is supported in hypothesis 6 (B = 0.111*); buyers trust in marketplaces that offer a web page with the necessary features to effectively navigate and conduct transactions, such as an easy-to-use and accessible web page that allows them to conduct transactions without interruptions, confirms the entire process and provides online help (Chen *et al.* 2014; Ter Huurne *et al.* 2017). Similarly, the outcome of hypothesis 7 is significant (B = 0.504**); the propensity to trust as a personality and cultural trait in Colombia is a relevant factor when buying through C2C electronic commerce. This result is another contribution to the analysis of this type of consumer behaviour, as it confirms that those who use this type of commerce generally exhibit a

propensity-to-trust personality trait. In turn, third-party recognition is also supported as a precedent of trust in the marketplace; in other words, sites that offer third-party recognition regarding quality assurance, warranty, payments, and other resources valued by users of these types of transactions will promote trust in their use, and therefore, hypothesis 8 is supported (B = 0.232**). This result also reinforces previous studies regarding the considerable importance of companies that provide international accreditation and support services (Jones and Leonard 2008; Kang *et al.* 2016; Leonard and Jones 2019, 2010). Finally, hypothesis 9 (B = 0.047) is not significant, given that Colombian C2C buyers do not consider interpersonal trust to be relevant when conducting these types of purchases (Table 6) (Figure 2).

Finally, as the proposed model sought to explore and understand the influence of these variables on C2C commerce, and given the characteristics of the PLS statistical analysis technique, we have omitted any goodness-of-fit tests for the model (SRMR, NFI, Chi²).

Table 6
Summary of the validity of the structural model

Hypothesis		Effect	Original Sample (O)*	R squared	T Statistics (|O/STDEV)	P Values
H1	supported	Purchase intention -> Use C2C	0.272*	Purchase intention R= 0.658	5.381	0.000
H2	supported	Social influence -> Purchase intention	0.290*		5.846	0.000
H3	supported	Tendency low prices -> Purchase intention	0.437*		7.879	0.000
H4	Non supported	Risk -> Purchase intention	-0.055		1.278	0.201
H5	supported	trust -> Purchase intention	0.132*		2.631	0.003
H6	supported	Web quality -> trust	0.111*		1.994	0.002
H7	supported	Propensity to trust -> trust	0.504*		9.720	0.000
H8	supported	TPR web -> trust	0.232*	trust R= 0.520	4.057	0.000
H9	Non supported	Interpersonal Trust -> trust	0.047		0.744	0.457

* Significant at p<0.05, t-value 1.960
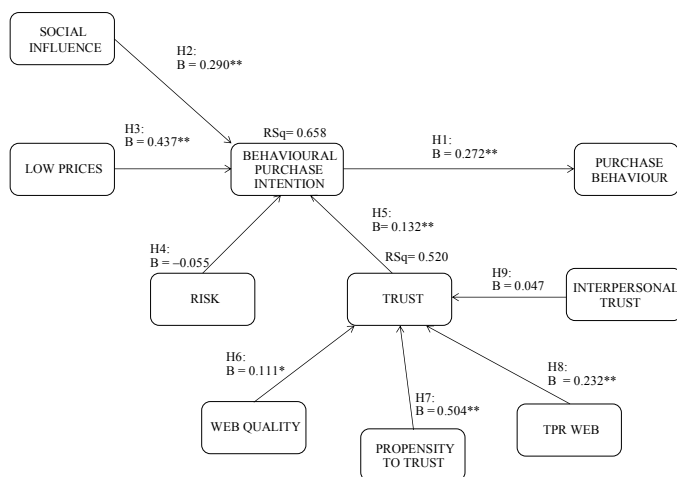
Source: Own elaboration

Figure 2
Colombian model C2C
Source: Own elaboration

5. DISCUSSION AND CONCLUSIONS

The objectives of this study were a) to examine whether factors such as perception of trust, risk perception, social influence, and the search for low prices influence the adoption of C2C; and b) to verify whether the perception of trust to buy in C2C is, in turn, related to factors that precede the purchase, such as web quality and TPR as well as personality traits (propensity to trust and interpersonal trust). As the results show, marketplace users consider the following aspects as positive factors for buying/selling in this type of commercial platform: social influence, meaning they will consider comments and recommendations from close friends and family when buying/selling in a C2C site; in addition, they will use these types of places to search for a product at the lowest price available in the market (used or new); and, finally, they will conduct these transactions in marketplaces that offer optimal of conditions trust.

As a result, this study provides detailed information on which aspects of trust users require to trust in the marketplace; the first is that the site exhibits basic web quality conditions, such as the platform design and whether its architecture works effectively; in addition, it should have TPR with respect to support, warranty, payment options, and quality, allowing the user to generate the perception of trust required for these types of transactions, which have a high degree of danger regarding fraud and lack of fulfilment of purchasing conditions; the findings are the first to validate these relationships for a heterogeneous and representative sample, given that in previous studies, the samples were not significant (Yoon and Occeña 2015).

Finally, interpersonal trust, understood as positively valuing the comments and recommendations of other buyers when making decisions, has not been supported. This may be because buyers do not take into account information that other people publish about sellers because there is a high probability that it

is fraudulent or that the sellers publish comments in their own favour. However, it continues to be necessary for marketplaces to offer these spaces for communication between users because they are another source of trust that has been confirmed in previous studies (Yoon and Occeña 2015).

This study has demonstrated that trust is also a cultural factor and that in countries with a Latin culture, people will tend to trust these types of transactions despite the risk that they entail, which may explain why C2C development and growth are high there compared to other regions of the world. This high level of trust may be due to the fact that Colombian culture presents high levels of collectivism and masculinity (Angulo *et al.* 2013), factors that are shown to be positive moderators of trust with regard to electronic purchases, and therefore also in a contrary way, generate risk aversion in Colombian buyers in C2C (Hallikainen and Laukkanen 2018).

This study has been one of the first conducted in a Latin American country, specifically in Colombia, a leading country on the continent in the use of C2C; therefore, the findings provide a contribution to this line of research worldwide. We have verified that the main variables proposed in other studies in Asia and the USA were supported in our study; therefore, marketplaces must consider them in management guidelines to improve their commercial intermediation services and, in turn, to correct failures that arise, particularly regarding issues of support, security, and assurance of processes through third parties (TPR) in transactions.

Providing a structured model to examine the adoption of C2C electronic commerce and integrating a complete examination of trust and risk in this type of trade, the managerial implications are focused on recommending that marketplaces develop greater help and support tools on their platforms to assist throughout the purchase and post-purchase process as well as shipment-tracking and security tools that allow the buyer to have control over the purchase, which would avoid the high level of fraud that occurs in this type of trade.

The limitations of our research are basically centred on the generalization of marketplaces in our study, given that there are differences between them, and therefore, specific studies could be conducted for each of these (eBay, deremate, MercadoLibre, Amazon, etc.). Similarly, not including other countries in the region where C2C is very well developed, such as Argentina or Brazil, does not allow client behaviour to be extrapolated to the entire region or to Latin American countries in general.

Other limitation was the not supported of perception risk, these results are not aligned with previous studies, perhaps because the survey used was focused on asking about perceptions of the use of these marketplaces. These are marketplaces that consumers believe have protections that decrease their perceived risk, since their trust.

Finally, more specific analyses can be conducted as future lines of research to complement this study. For example, the e-quality scales for C2C purchases, proposed by Zalatar (2012) as the next step in the development of this line of research for these types of countries, can be measured to better analyse marketplace characteristics, and cross cultural studies among different countries should offer interesting results and perform analyses

of mediating effects that have been explored in previous studies on electronic commerce. Likewise, there are new approaches to assess trust as reciprocity between two trading parties (Leung and Shi 2019); also, will be necessary analysing information and social support (Zhao *et al.* 2019).

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APPENDIX

Questionnaire

Construct	Item	Literature support
Purchasing behaviour (AU)	AU3. How many times during the last year have you purchased or exchanged products or services with other people using a commercial intermediation website (eBay type)?	Venkatesh *et al.* (2012), Escobar & Carvajal (2014)
Purchase intention (BI)	BI1. I have the intention to use a commercial intermediation website (eBay type) to buy or sell something in the coming days. BI2. In the future, I would buy or sell something using a commercial intermediation website (eBay type). BI3. Do you prefer to buy or sell using a commercial intermediation website (eBay type) compared to using traditional platforms?	Venkatesh *et al.* (2012), Escobar and Carvajal (2014)
Social influence (SI)	SI1. The important people in my life such as family and friends recommend buying or selling to other people using a commercial intermediation Internet website (eBay type). SI2. Other people I know (such as colleagues or supervisors) recommend buying or selling from other people using a commercial intermediation Internet website (eBay type). SI3. If a leader or person who is publicly influential suggests buying or selling to other people using a commercial intermediation Internet website (eBay type), it is probable that I will do so.	Venkatesh *et al.* (2012), San Martín and Herrero (2012)
Tendency towards low prices (PO)	PO1. In general, I can save more money if I buy or sell to other people using a commercial intermediation Internet website (eBay type) than anywhere else. PO2. I enjoy searching for the lowest price when purchasing from other people using a commercial intermediation Internet website such as eBay. PO3. In general, I prefer to buy or sell to other people using commercial intermediation Internet websites such as eBay because I can earn or save more money than through any other medium.	Escobar and Carvajal (2014)
Third-party recognition (TPR)	TPR1. I consider that third-party recognition seals work correctly in commercial intermediation Internet websites such as eBay. TPR2. In general, I think that the support of commercial intermediation Internet websites such as PayPal is adequate for the protection of the interests of buyers/sellers. TPR3. I feel confident when I find the seal of third parties in commercial intermediation Internet websites as guarantors of quality in the purchase/sales transactions I conduct.	Yoon and Occeña (2015)
Perceived risk (PR)	PR1. In general, I think that buying from other people using the Internet is risky. PR2. In general, I think that paying other people by electronic means (credit or debit cards) is dangerous. PR3. In general, I think there is a possibility that buying or selling to other people using the Internet may generate problems for me as a result of the transaction.	Agudo-Peregrina (2014)
Trust (PT)	PT1. In general, I think that people who sell or buy in a commercial intermediation Internet C2C website can be trusted. PT2. In general, I think that people who sell or buy in a commercial intermediation Internet C2C website fulfil their promises and commitments. PT3. In general, I think that the technology of a commercial intermediation Internet C2C website is reliable enough to buy or sell through it.	Agudo-Peregrina (2014), Escobar and Carvajal (2014)
Natural propensity to trust (NT)	NT1. In general, I think that people genuinely care about the wellbeing of others. NT2. In general, I think that the majority of people keep their promises NT3. In general, I think that the majority of people are honest in their relationships with others. NT4. I normally trust people unless they give me a reason not to trust them.	Yoon and Occeña (2015)
Web quality (WQ)	WQ1. I consider that the commercial intermediation website I use is of high quality. WQ2. I consider that the commercial intermediation website I use performs correctly. WQ3. I consider that commercial intermediation website I use has an attractive design and appearance.	Yoon and Occeña (2015)
Interpersonal trust (IT)	IT1 If a friend recommends a seller/buyer, I think that the risk of buying or selling in a commercial intermediation C2C website is reduced. IT2 If a person in my virtual community (forums, blogs, social networks) recommends a seller/buyer, my risk in buying or selling in a commercial intermediation C2C website is reduced. IT3 If a person I communicate with through a virtual platform (chat, forum, rating chart) recommends a seller/buyer, my risk in buying or selling in a commercial intermediation C2C website is reduced.	Yoon and Occeña (2015)