Conjoint analysis of drivers and inhibitors of e-commerce adoption ☆

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ABSTRACT

Since the emergence of electronic commerce, the study of motivations as good predictors of consumers' purchasing behavior collects much of the attention of the literature. However, most studies rely on regression analyses, which have relevant limitations. This study uses fuzzy-set qualitative comparative analysis (fsQCA) to analyze the influence of motivations and barriers on online-shopping behavior from a compilation of 33 motivational and 12 disheartening items of e-commerce as conditions, and purchase behavior as outcome. The empirical analysis uses responses of 817 Internet users to an online questionnaire. The method includes a previous principal component analysis that reduces the number of conditions to 7 motivations (hedonic, product variety, product customization, convenience, price, lack of sociality, and Internet exclusive availability) and 3 barriers (in-person, risk, and delivery). fsQCA offers insight into the knowledge of online shopping drivers and inhibitors, with relevant implications for theory and practitioners.

1. Introduction

The Internet is an essential shopping channel that grows constantly both in number of users and turnover. For instance, the number of Spanish online shoppers among Internet users increases from 27.3% in 2006 to 60.6% in 2013, and the number of Internet users spikes from 50.0% in 2006 to 73.1% in 2013 (ONTSI, 2014).

This rapid growth raises interest in academia and turns e-commerce into an attractive field of research. Different areas of research try to answer why customers decide to shop online. Some studies use the acceptance models that stem from the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975), where behavioral intention is the main predictor of human behavior. Examples in the field of e-commerce adoption include the technology acceptance model (TAM) (Gefen, Karahanna, & Straub, 2003), the theory of planned behavior (TPB) (Bhattacherjee, 2000), or the evolution of the unified theory of acceptance and use of technology (UTAUT2) (Pascual-Miguel, Agudo-Peregrina, & Chaparro-Peláez, 2015).

Another stream of research focuses on the primary motivations that drive consumers to buy online. These studies identify the individual benefits that consumers may obtain from using e-commerce, such as product variety (Alba et al., 1997), convenience (Burke, 1997), or search costs (Bakos, 1997). Upon the results from these studies, subsequent research builds a framework comprising extrinsic motivations and intrinsic motivations (Ryan & Deci, 2000) to identify different typologies of shoppers according to combinations of motivations (Iglesias-Pradas, Pascual-Miguel, Hernández-García, & Chaparro-Peláez, 2013). On the opposite side, other studies investigate why people do not buy online. This line of research pinpoints deterrents such as risk (Forsythe, Liu, Shannon, & Gardner, 2006) or trust (Gefen, 2000).

Regardless of the approach, most of the previous studies use multiple regression analysis (MRA). The use of MRA is common in online-shopping-adoption research — especially where data collection relies on cross-sectional self-reports that use fixed n-point scales (Woodside, 2011), but MRA has three main limitations (Woodside, 2013). First, MRA does not provide information about the interaction among a model's dependent and independent variables. Furthermore, the influence might vary depending on the variables the model includes. Second, MRA relies on a symmetrical approach, excluding possible asymmetric relations between variables. Third, correlation coefficients do not explain non-linear relations among variables.

To solve the above limitations, some lines of research turn to Ragin's (1989) analytical proposal, qualitative comparative analysis (QCA), and its variant fsQCA (fuzzy-set qualitative comparative analysis). This approach facilitates the analysis of complex causality and logical relations among combinations of conditions and an outcome, allowing researchers to assess the necessity and sufficiency of conditions in relation to an outcome (Ragin, 2008a). In addition, fsQCA is useful for exploring causal configurations or combinations of causes, as well as for examining multiple causal paths that lead to the same outcome.

Consequently, this study uses fsQCA to examine the motivations and barriers for the adoption and rejection of electronic commerce by shoppers. In doing so, two main objectives arise. First, results of the study can

complement previous studies that use regression models. Second, as the growth of e-commerce and Internet-literacy change consumers' perceptions, the contrast of results with prior research also helps to analyze the evolution of drivers and inhibitors of online shopping.

The structure of this research comprises four sections. Section 2 reviews the literature on motivations and barriers in electronic commerce. Section 3 explains the research method and Section 4 develops the results. Finally, Section 5 summarizes the conclusions and limitations of the study, and proposes future avenues of research.

2. Theoretical framework

2.1. Motivations as drivers of online shopping

Consumers traditionally identify shopping convenience as the main reason to shop from home (Darian, 1987), mainly because they save time (Ganesh, Reynolds, Luckett, & Pomirleanu, 2010; Overby & Lee, 2006). Nevertheless, multiple dimensions of convenience exist. First, convenience also relates to the lesser effort shoppers experiment while shopping online, be this effort physical (Shamdasani & Yeow, 1995), psychological (Childers, Carr, Peck, & Carson, 2001), or cognitive (Bosnjak, Galesic, & Tuten, 2007). Furthermore, convenience also has to do with flexibility and ubiquity (Chang, Lai, & Wu, 2010; Gehrt, Onzo, Fujita, & Manesh, 2007). This flexibility facilitates impulsive purchasing (Konuş, Verhoef, & Neslin, 2008). Finally, other authors recognize choice of payment method as another dimension of convenience in online shopping (Brown, Pope, & Voges, 2003).

Economic reasons also motivate consumers to choose e-commerce. Online shops have lower costs and offer better prices than traditional retailers (To, Liao, & Lin, 2007). Besides, Internet allows consumers to compare prices from different retailers easily (Noble, Griffith, & Adjei, 2006) and to gather quick, costless, and effortless information (Chang et al., 2010).

Internet also offers a great variety of products, brands, and shops (To et al., 2007), and therefore shoppers may find niche products more easily (Wolfinbarger & Gilly, 2000). In this sense, customization of products at an affordable price is easier online, contrary to what happens in traditional shops, where customization entails higher prices (To et al., 2007). Furthermore, e-consumers share easily their shopping experiences with their friends and receive recommendations (Ganesh et al., 2010).

The lack of physical contact between buyer and seller may be both a driver and a barrier to online shopping. As a driver of online shopping, the lack of physical contact allows e-shoppers to avoid social interaction with sales people or other customers (Kukar-Kinney, Ridgway, & Monroe, 2009). Consequently, consumers do not need to show or share in social contexts private information about how much money they spend or what products they buy (Rajamma, Paswan, & Ganesh, 2007).

Intrinsic or hedonic motivations are also important drivers of online shopping. Hedonic motivations comprise factors such as enjoyment (Girard, Korgaonkar, & Silverblatt, 2003), adventure feelings (Chang et al., 2010), or mood elevation because of the online shopping process itself (Childers et al., 2001) or because of the benefits of e-commerce, such as finding bargains (O'Brien, 2010).

Finally, other motivations from literature include brand or shop loyalty (Konuş et al., 2008), or product availability being exclusive to the online channel (Ruiz-Mafé & Lassala-Navarré, 2006).

2.2. Barriers to purchase online

Because of the impossibility of establishing physical contact between shoppers and retailers, and between shoppers and products, customers might feel risk and distrust. Risk consists of two dimensions. The first one relates to making payments over the web (Vijayasarathy, 2004) and to sharing personal information (McKnight, Choudhury, & Kacmar, 2002); the second relates to the product, because consumers

cannot examine personally the products before buying them (Choi & Geistfeld, 2004). Distrust emerging from lack of contact also has two dimensions: toward online vendors, on the one side, and toward the Internet as a shopping channel, on the other (Gefen, 2000).

Prior research also identifies barriers in relation to the shopping process. On the one hand, shoppers cannot intervene personally in the shopping process (Doolin, Dillon, Thompson, & Corner, 2005). On the other hand, consumers might find different problems with product delivery (Swinyard & Smith, 2003). Finally, fidelity to physical retailers might also be a barrier for switching to online retailers (Brown et al., 2003). Table 1 summarizes the motivations and barriers to online shopping.

3. Method and results

3.1. Sample

An online survey yielded data for the empirical analysis. The sample comprises 817 complete responses from a total of 1516 responses (53.9%). Students from the Universidad Politécnica de Madrid and online shoppers from an internal database completed the questionnaire. Information about the questionnaire also appeared on the professional social networking website LinkedIn.

Table 2 shows the main characteristics of the survey. In general, the profile of respondents is similar to Spanish online shoppers (ONTSI, 2014), except for the levels of previous experience and frequency of online shopping, which are higher than the Spanish average — less than 4% of respondents had never made a single online purchase, and 52.4% of respondents stated that they shop online at least monthly.

3.2. Measures

The survey contains a list of 33 items of motivations and 12 items of barriers from prior literature, and uses a five-point Likert scale (from '1 — Does not correspond at all' to '5 — Corresponds exactly').

Because all respondents have previous experience in shopping online (Table 2), intention to purchase contains also knowledge from experience (Taylor & Todd, 1995). In fact, respondents report high levels of purchase intention. This characteristic of the sample suggests that actual purchase behavior might be an appropriate outcome.

Table 1
List of motivations and barriers.

Motivations	Convenience	General convenience
		Time saving
		Effort saving
		Flexibility
		Payment methods
	Economic	Low prices
		Comparison shopping
	Information seeking	Information seeking
	Variety	Variety
	Social	Social
		Antisocial
	Customization	Customization
	Impulsiveness	Impulsiveness
	Fidelity	Fidelity
	Online exclusive	Online exclusive
	Hedonic	Enjoyment
		Adventure
		Mood
Barriers	Risk	Payment
		Personal information
		Product
	Trust	Vendors
		Internet channel
	Physical contact	Physical contact
	Delivery	Delivery
	Fidelity	Fidelity