

Factors Affecting the Behavioral Intention to use Virtual Supermarket: An Integrated Conceptual Framework

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Abstract: *While the importance of virtual supermarket and consumers' responses has been widely discussed in marketing and management literature, little research has emphasized the factors affecting consumers' behavioral intention to use a virtual supermarket. Hence, the purposes of the current study were to investigate factors that affect consumers' intention to use virtual supermarket. Based on previously literature review, this study suggests a framework of behavioral intention to use a virtual supermarket, integrating the separate literatures on Consumer Demographics, Performance Expectancy, Effort Expectancy, Social Influence, Personal Innovativeness, and Image Vividness. It also proposes future researches that could expand the body of literature of virtual supermarket consumption. Results from the current study not only fill the gap in the knowledge by expanding the body of knowledge of virtual supermarket consumption, but also provide retailers and marketers with in-depth understanding into consumers' underlying demands that move them to use virtual supermarket.*

Keywords: Virtual supermarket, consumer, purchase intention, framework

1. Introduction

Recently, virtual supermarket shopping has entered a phase of commercial mainstreaming as retailers aim at developing their revenue. A virtual supermarket displays merchandise as if it were on a physical shelf on the streets, customers scan the barcode of the items they want with the app by their smart phones, and delivery is made at the end of the day. Consumers recognize that if the virtual supermarket is a integration of online and real supermarkets, it is actually the revolution of buying and therefore they prefer this way of shopping (DK Marketing, 2018).

With virtual supermarket shopping is growing at a rapid pace, e-retailers need a clear strategy to understand the reasons that lead the customer to use virtual supermarkets and leverage their behavioral intention. The behavioral intention may be influenced by several factors. In addition, there is no consistency in the study regarding the factors that impact the behavioral intention to use a specific technology. Moreover, different technologies have different factors that affect their acceptance (Gefen et al., 2003). Meanwhile, an investigation conducted by Suh & Lee (2005) concluded that using a virtual supermarket can influence behavioral intention. Hence, it is necessary to study and identify the specific factors. Despite the general consensus that factors have a strong influence on behavioral intention and provide important reasons for virtual supermarket consumption behavior, it is a topic that has not yet been researched in the current virtual supermarket shopping literature.

Therefore, it is necessary to complement these contributions by studying which factors of the virtual supermarket service affect consumer behavioral intention. The aim of the current study is to recognize the relevant factors in the consumers' behavioral intention to use virtual supermarkets. To achieve this objective, the current study includes a review of the body of knowledge about virtual supermarket factors and

their impact on behavioral intention, as well as proposes a framework integrating the so far incoherent frameworks as suggested by previous studies. These findings can be used to further develop an empirical study for measuring virtual supermarket shopping consumption. They also have important managerial implications for the manager of a virtual supermarket to appreciate the service quality.

2. Literature Review

2.1. Virtual Supermarket

A virtual supermarket is a form of applying e-commerce to the retail sector according to the supermarket model, providing standardized products to consumers. It uses posters with shelves filled with products, located on the walls of the dock or at the station.

Consumers see the items on the shelves as if they were in a grocery store. If they want to purchase them, they simply scan the barcode with their smartphone (after downloading the app), and the item is placed in their online shopping cart. Once they've paid, they simply drive home and the items they bought are delivered to them right away. If consumers have purchased a product in the past and they simply want to order it again, they can just go into their smartphone app and order it via the product's barcode.

2.2. Behavioral Intention

Behavioral intention has been defined in previous technology acceptance studies as the individual willingness to use a technology system (Venkatesh et al., 2012; Venkatesh et al., 2003; Davis et al., 1989). Based on the study of Venkatesh et al. (2012), the current study defines behavioral intention as the consumer willingness to use and continue to use virtual supermarket shopping.

On the other hand, there is consensus among scholars that intention to use a certain technology is a strong predictor of the actual use of technology. Due to this, the behavioral intention to use a technology is a central concept of the technology acceptance models (Nikou & Economides, 2017). However, not much consensus is presented among scholars on the aspects that determine the intention to do a certain behavior, in case use virtual supermarket shopping services. Different researchers point out different factors that affect the behavioral intention to use e-retail shopping services (Beck & Crié, 2018; Grewal et al., 2017; Papagiannidis et al., 2013). This will be illustrated in the following sections by looking at several previous studies.

2.3. Factors Affecting Consumers' Virtual Supermarket Behavioral Intention

2.3.1. Performance Expectancy

Performance longevity refers to the extent to which an individual believes that adopting a certain service or technology will enable them to successfully achieve related tasks (Venkatesh et al., 2003). This factor is equivalent to Perceived Utility (PU) in the Technology Acceptance Model (TAM) (Venkatesh et al., 2003). In previous studies, PE has been shown to have a significant influence on consumer behavioral intention in the contexts of e-commerce (Chong, 2013), mobile Internet (Venkatesh et al., 2012). Furthermore, the virtual supermarkets allow users to shop at convenience time. At meanwhile, Activity lifespan has consistently been shown to be the strongest predictor of behavioral intention (e.g., Venkatesh et al., 2003, 2012; Escobar-Rodríguez & Carvajal-Trujillo, 2014) and purchase intention (Miguel et al., 2015). Therefore, these results lead to the forecast that when the convenience aspect of virtual supermarket's performance expectations are met, the VS-shopper's intention to use will be worthwhile.

2.3.2 Effort Expectancy

Effort expectancy refers to the level of ease or complexity an individual perceives to adopting a certain service or technology to complete related tasks (Venkatesh et al., 2003). This concept is compatible with perceived ease of use (Dwivedi et al., 2017; Hung et al., 2013; Lu et al., 2010; Navavongsathian et al., 2020) and positively affects purchase intention (Venkatesh et al., 2012). According to previous studies, effort expectancy has been a vital factor on technology acceptance, where the degree of the ease of use of the technology system affected significantly the behavioral intention of various technologies, such as 3G (Liao et al., 2007), wireless internet (Lu et al., 2003), electronic commerce (Ha & Stoel, 2009) and m-commerce (Chong, 2013). Likewise, in the virtual supermarket shopping environment, effort expectancy is how customers believe that shopping through a virtual supermarket can help them complete shopping easily and efficiently.

2.3.3. Social Influence

Social influence is a term of the degree to which consumers of certain technology perceive that people who are important to them (e.g. family, friends, relatives) think they should use the technology (Venkatesh et al., 2012). Social influence understood as a direct determinant of behavioral intentions is included as the subjective norm in TRA, TAM2, and TPB

(Fishbein & Ajzen, 1975; Schifter & Ajzen, 1985; Davis, 1989; Davis et al., 1989; Moore & Benbasat, 1991). The social influence, subjective norm, and social norm constructs all contain the explicit or implicit notion that individual behavior is influenced by how people believe others will view them as a result of having used the technology (Venkatesh et al., 2003) and positively affect purchase intention (Venkatesh et al., 2012). Likewise, because the virtual supermarket is not a mandatory channel, it means that the consumers have the free option to use it. Hence, social influence has the potential to impact the behavioral intention to use the virtual supermarket shopping.

2.3.4. Personal innovativeness

Personal innovativeness is defined as the degree to which a person prefers to try new and different products or channels and to seek out new experiences requiring a more extensive search (Midgley & Dowling, 1978). When shoppers come into contact with a new technology or innovation, they have the opportunity to adopt or refuse it. Prior research has shown that innovative customers prefer to explore and use new alternatives (e.g., Steenkamp & Baumgartner, 1992; Rogers, 1995; Konoş et al., 2008). In addition, several studies in the e-commerce literature have demonstrated the important role that innovativeness plays in purchase intention in different contexts (Escobar-Rodríguez & Carvajal-Trujillo, 2014; San Martín & Herrero, 2012; Citrin et al., 2000).

2.3.5. Image vividness

Image vividness is determined by image features including shape and color, detail, context, genericity (the ease with which the image can be formed from generic information in long-term memory), and saliency (Cornoldi et al., 1992). Many scientists proved that visual information is easier to remember than the verbal dimension (Ha et al., 2019). Analyzing all Imagery characteristics, it is believed in the literature that there is a relationship between imagery and consumer behavioral intentions (Yoo & Kim, 2014). According to the study conducted by Miller et al. (2000), the imagery environment provokes positive emotions during the shopping experience. The virtual supermarket posters are designed to look like real shelves of the shops and thus the experience is more user-friendly. Images with color vividness were furthermore to influence behavior intentions of consumer.

2.3.6. Demographic factors (age, gender)

We expected the effect of demographic factors on behavioral intention, such as age and gender. Older consumers tend to face more difficulty in processing new or complex information, thus affecting their using of new technologies (Morris et al., 2005; Plude & Hoyer, 1985). This difficulty may be attributed to the decline in cognitive and memory capabilities with the aging process (Posner, 1966). Hence, compared to younger consumers, older consumers tend less to use virtual supermarket. Moreover, women, more than men, are willing to spend more effort to shopping. Thus, women tend more to use virtual supermarket.

3. An Integrated Conceptual Framework For Factors Affecting Behavioral Intention to use Virtual Supermarket

By analysing each topic of Literature Review and linking with the initial objectives for this research, the current study can create the model to follow. The current model proposes that Performance Expectancy, Effort Expectancy, Social Influence, Personal Innovativeness, and Image Vividness influence the behavioral intention to use a virtual supermarket. Table 1 below depicts these variables of the proposed model.

Table 1: Variables, Definition, and References

Variable	Definition	References
Behavioral intention	The individual willingness to use and continue to use a virtual supermarket, and the factor that determines the usage of this technology.	Venkatesh et al., 2012
Performance expectancy	The degree to which using a virtual supermarket will provide benefits to consumers in performing this activity.	Venkatesh et al., 2012
Social Influence	The extent to which consumers of a virtual supermarket perceive that people who are important to them (e.g. relatives, friends) think they should use the technology.	Venkatesh et al., 2012
Effort expectancy	The degree of ease associated with consumers' use of a virtual supermarket.	Venkatesh et al., 2012, p. 159
Personal innovativeness	The degree to which an individual prefers to try new and different things, such as virtual supermarkets, and to seek out new experiences requiring a more extensive search.	Midgley & Dowling, 1978
Image vividness	It is determined by image of the virtual supper market features including shape and color, detail, context, genericity (the ease with which the image can be formed from generic information in long-term memory), and saliency.	Cornoldi, De Beni, Cavendon, and Mazzoni, 1992

Furthermore, this behavioral intention are affected by the demographic variables which are gender, age. The proposed research model is presented in Figure 1.

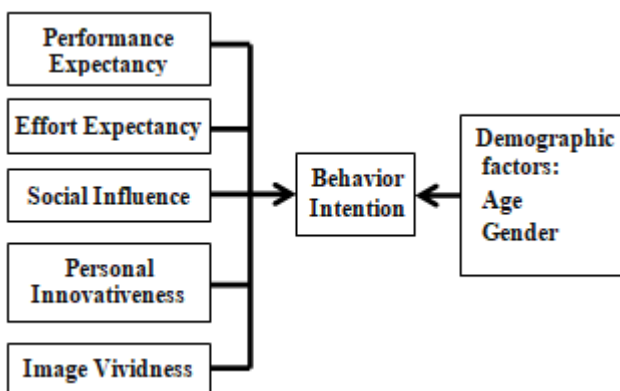


Figure 1: An Integrated Conceptual Framework

From this framework (see figure 1), we may suggest six hypotheses:

H1: Performance expectancy affects the behavioral intention to use a virtual supermarket.

H2: Effort expectancy affects the behavioral intention to use a virtual supermarket.

H3: Social influence affects the behavioral intention to use a virtual supermarket.

H4: Personal innovativeness affects the behavioral intention to use a virtual supermarket.

H5: Image vividness affects the behavioral intention to use a virtual supermarket.

H6: Demographic factors (Age and gender) affect the behavioral intention to use a virtual supermarket.

4. Discussion and Conclusion

Based on a comprehensive literature review, this study further extends theoretical implications by suggesting framework research for consumers' intention to use virtual supermarkets. In fact, during the extensive literature review, it has been found that previous findings investigated different factors of virtual supermarket consumer behavior in a very scattered manner. For example, Performance Expectancy, Effort Expectancy, Social Influence, Personal Innovativeness, Image Vividness, and Demographic Factors.

All these factors are actually interrelated and are asked to be organized to propose a more comprehensive framework that will integrate all the variables of virtual supermarket consumers and describe a set of hypothesized explanatory variables which the framework has addressed. The current research is novel in itself because it is the first to propose a model of virtual supermarket shopping. This has certainly filled the gap in the existing literature regarding virtual supermarkets.

It also provides a springboard for a further extension of virtual supermarket shopping research in relation to empirical study as well as virtual supermarket shopping dissemination. It further expands the current understanding of this shopping behavior that is more focused on level factors affecting consumers' behavioral intention to use virtual supermarket.

For managerial contribution, the results of this study can also support virtual supermarket marketers and consumers. The investigation of the factors that affect consumers' intention to use the virtual supermarket has created a fruitful outcome that can support the retailer industry in several ways. Retailers need to analyze the consumer behavior they are targeting before designing and implementing virtual supermarket services in the market. It is crucial to know the factors that consumers consider in their shopping consumption behavior to maximize their enjoyment of virtual supermarket shopping. In addition, the findings of the current study will suggest consumers to better understand possible factors that impact their consumption activities.

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