

QATAR UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

FACTORS AFFECTING CONSUMERS' ADOPTION OF ONLINE GROCERY SHOPPING

APPLICATIONS IN QATAR

BY

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in Partial Fulfillment of the Requirements for the Degree of
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ABSTRACT

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Title: FACTORS AFFECTING CONSUMERS' ADOPTION OF ONLINE GROCERY SHOPPING APPLICATIONS IN QATAR

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The usage of online grocery shopping applications is developing worldwide, which has enhanced the competition among service providers. Accordingly, understanding the factors that affect consumers' adoption of these services has become important to guarantee the success of these firms. The Unified Theory of Acceptance and Use of Technology was extended by adding four new variables which are perceived risk, perceived trust, sensory stimulation and loss of perceived enjoyment. Therefore, the purpose of this study is to investigate the factors of performance expectancy, effort expectancy, social influence, facilitating conditions, perceived trust, perceived risk, sensory stimulation and loss of perceived enjoyment that affect the consumer's adoption of online grocery shopping applications in Qatar.

A quantitative research method was followed in this study to investigate the factors that affect the consumers' adoption. A sample of 306 respondents was collected in Qatar through an online survey. The data were analysed using IBM SPSS 28. Different statistical tests were used to investigate the consistency of the collected data and test the proposed hypotheses, such as reliability, correlation and multiple regression analysis.

The results of this study indicated that performance expectancy, social influence, facilitating conditions, perceived trust and sensory stimulation had a statistically significant impact on the consumers' adoption of online grocery shopping applications, though the rest of the factors tended to be insignificant.

The results of this study will benefit companies by providing them with the

important factors that affect consumers' adoption of online grocery shopping applications to consider in their decisions regarding their marketing strategies.

DEDICATION

I dedicate this research to my mom, my dad, my sister, my brother and my husband, who gave me constant encouragement throughout my life. Without their endless support, I would never have been able to finish my postgraduate studies.

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CHAPTER 1: INTRODUCTION

1.1 Background Information

There has been a notable increase in the usage of E-commerce technologies around the globe. The majority of companies nowadays are using E-commerce tools as a fast and efficient way to promote their services and increase their distribution channels to reach the maximum number of customers. Moreover, online ordering is very popular around the world; most merchandizing organizations are shifting their focus towards online ordering to increase their sales and revenue. In addition, online grocery shopping is one of the growing markets. Recent studies and research have indicated that E-grocery is forecasted to increase its sales dramatically to reach \$250 billion by 2025 (Mercatus, 2021).

Online grocery shopping has grown rapidly since the start of the coronavirus pandemic. According to a study that was published by Mercatus in 2021, nearly 43% of shoppers have shopped online in the last 6 months compared with 24% 2 years ago. The results of that study argued that due to COVID-19, 62% of customers switched to online shopping as the pandemic pushed consumers to buy essential products online (Mercatus, 2021). Furthermore, the increase in E-grocery shopping may be because customers are avoiding going to public places following the government's orders to stay at home; thus the need for groceries made E-grocery shopping essential.

Online grocery shopping is a newly adopted practice in Qatar. Recently, individuals have switched to online grocery shopping for many reasons, including time saving, convenience, and avoiding direct contact with people and other factors, which will be evaluated further in this research study. Accordingly, it is important to recognize what influences the intention of consumers regarding online grocery shopping in Qatar.

It was noticed through an extensive literature review that in Qatar, there is a deficiency of studies on this topic. The study aimed to define the key factors that affect customers' adoption of online grocery shopping in Qatar.

The research study adopted quantitative research methods. An online survey was distributed among residents of Qatar to examine the aspects that affected consumers' adoption of online grocery shopping. The research study was carried out to investigate the trends of online grocery shopping in context of Qatar. The study considered numerous segments of respondents that were differentiated on the basis of nationality, age, gender, education, employment status, monthly income, marital status and more.

1.2 Purpose of the Research

The purpose of this study was to investigate the most significant factors that are expected to influence customers' adoption of grocery shopping via online applications in Qatar.

Concentrating on online grocery shopping in Qatar, this study examined the following research question:

- 1- What are the key factors that affect consumers' adoption of online grocery shopping in Qatar?

The research objectives of the research study were as follows:

- 1- Examine the factors affecting consumers' adoption of online grocery shopping in Qatar.
- 2- Define the most significant factors that influence the adoption of online grocery shopping in Qatar.

- 3- Determine the least significant aspects that affect the adoption of online grocery shopping in Qatar.

1.3 Motivation behind the Study

Like many countries around the globe, in the last few years, Qatar has experienced a boom in online grocery shopping. By using the online grocery applications, customers have the chance to choose their groceries from many shops and compare prices and products, with the advantage of having their groceries delivered to their desired location. The speedy growth of online grocery shopping has encouraged new grocery shops to enter the market, which, in turn, has increased the competition among service providers. Therefore, this research study was carried out to define the factors that affect the adoption of online grocery shopping applications in the context of Qatar.

1.4 Benefits of the Study

This research is the first study in Qatar to investigate the factors that affect consumers' adoption of online grocery shopping. Understanding these factors is critical for guaranteeing the success of online grocery businesses. Studying these aspects will benefit decision-makers, as they will have the necessary information to develop their grocery shopping portals or applications and enhance their knowledge of the most important factors that they have to focus on in forming their business strategies to be sustainable and resilient.

1.5 Structure of the Study

This research study applied a model with eight hypotheses. The following chapters of this report will present the literature review in Chapter 2, which includes the critical factors that affect consumers' adoption of online grocery shopping applications. The next chapter outlines the research methodology used to complete this study, then the data analysis and results are discussed in Chapter 4, followed by a discussion of the results in Chapter 5. Finally, a conclusion, which includes the implications and limitations, is presented in Chapter 6.

CHAPTER 2: LITERATURE REVIEW

2.1 E-Commerce

According to AlKhalaf and Choe (2020), E-commerce has been a growing channel for conducting business. Interestingly, the population in Qatar has been sceptical when it comes to adopting E-commerce. Consumers have cited a lack of trust as a significant factor that has hindered the development and adoption of this channel. Qatar is multicultural, and it is essential to adopt a new approach to building trust among potential customers (Al-Louzi, 2017).

According to Al-Louzi (2017), there have been drastic changes regarding how the internet has affected business. It has facilitated the E-commerce industry, which has witnessed rapid growth. Qatar appreciates the importance of economic development that comes with online transactions in the country. The age of the internet has made it possible to facilitate online transactions for online purchases. Notably, the adoption of E-commerce has steadily grown, but when not well managed, it can become complex and challenging.

According to Akayleh (2021), social influence coupled with trust is critical in online shopping through social media platforms. Akayleh (2021) noted that behavioural patterns affect consumer behaviour when accepting social platforms such as Instagram. The E-commerce industry in Qatar has been enabled by the growth of various social media platforms. Most businesses have shifted to selling their products through Instagram and personalised websites. Most companies have adopted web-based services to advertise on WhatsApp, Twitter, and other media. The use of social media has grown tremendously in the country, with people being keen on updates on various social platforms.

Van and Dumitrica (2021) noted that social media influencers must ensure that

their brands remain authentic. The authors further noted that influencers are becoming a vital link between retailers and consumers. Retailers need to leverage the role of social media influencers to help bridge the gap in E-commerce. The authors noted that it is essential to initiate professionalism when it comes to Instagram influencers.

2.2 Adoption of Online Grocery Shopping Applications

Research has been conducted on the adoption of online shopping applications; nevertheless, numerous unknown variables affecting online purchase intention may be found (Celik, 2016). Because of time limitations, the majority of research projects have examined just a few sets of variables at a time. The primary objective of this research was to provide a better knowledge of online shopping adoption and to identify the key variables driving consumers to accept or deny such a system. The Unified Theory of Acceptance and Use of Technology (UTAUT) is a model that has been extensively used for predicting the behaviour of consumers. Cimperman et al. (2016) stated that the UTAUT model is strong and viable in the context of E-commerce, implying that it can be used to explain both the degree of purchasing intentions and behaviour. Celik (2016) defined the UTAUT as a metric reflecting the strength of a customer's choice to engage in a certain activity. According to the UTAUT, a consumer's adoption of online shopping applications is primarily determined by four variables: effort expectancy, performance expectancy, facilitating conditions and social influence.

The customer's intention to buy online has been described as the probability that a consumer will make an online purchase in the near future. In general, buying intention has been described as the likelihood of a consumer making purchases in the present and future (Celik, 2016). When it is not feasible to quantify actual behaviour, intentions are considered an acceptable substitute (Alalwan et al., 2017). In several

additional studies, researchers have defined purchase intention as a consumer's choice of an online shopping application along a continuum ranging from a digital storefront to an E-marketplace (Han & Kim, 2017). However, it may be characterized as a future intention to make an online transaction. Different players influence online buying behaviour, influencing the intention to purchase.

2.3 Performance Expectancy

Venkatesh et al. (2012) defined performance expectancy as an individual's extent of conviction that using new technology will give them an advantage in their purchasing activities. Consumers believe that buying online will offer benefits and enable them to save time, effort and money, and improve service efficacy (Madigan et al., 2016). As the main predictor of behavioural intentions to adopt online grocery shopping applications, performance expectancy is the most significant indicator of attitudes toward behavioural intentions and usage (Dwivedi et al., 2019; Chen et al., 2019). Consequently, customers' expectancies regarding a new E-commerce platform's function affect their readiness to buy. Here, the increased efficiency brought about by the new online grocery platform will encourage customers to use it.

According to Agrebi and Jallais (2015), performance expectancies refer to how much individuals believe new technology will benefit their everyday lives through increased productivity and time and effort savings. In validating the UTAUT, five categories were used to represent the function of performance expectancy: perceived usefulness, expected results, external motivation, user satisfaction and job fit (Dwivedi et al., 2011). Indeed, either performance expectancy or a related concept reflects the anticipated cognitive advantages associated with adopting a new technology (Tarhini et al., 2016; Amaro & Duarte, 2015). Notably, such benefits have been widely recognized to maintain their substantial impact on people's perceptions and desire to

embrace various types of application (Alalwan et al., 2015; Alalwan et al., 2016). Additionally, the function of perceived usefulness, as a comparable variable to performance expectancy, was shown to be a significant predictor of customers' propensity to utilize online shopping portals (Ingham et al., 2015; Rauniar et al., 2014). Chen et al. (2019) showed that performance expectancies substantially affected both genders' behavioural intentions to embrace online purchasing. As a result, one might infer that as long as consumers consider internet shopping to be more beneficial to their lives, they will be more likely to embrace it. The hypothesis that consumers' performance expectancy will favourably impact their decision to buy was therefore developed.

2.4 Effort Expectancy

Effort expectancy are described as the ease with which an application can be used (Venkatesh et al., 2012). In this context, effort expectancy refers to the simplicity and comfort customers experience when they interact with the newly launched online grocery application. This implies that if customers discover that using the internet for online buying is simple, adoption will increase. Liu et al. (2018) demonstrated that customers' expectancies of accessibility are positively associated with their views about online purchasing. Inconsistency, however, can occur in personal behavioural intentions and in effort expectancy (Koenig-Lewis et al., 2015).

The constructs developed in the UTAUT around this notion of effort expectancy are perceived ease of use and complexity (Cimperman et al., 2016). The perceived utility of a new system is a significant factor evaluated by people; the degree to which such a system is simple and straightforward to use continues to attract substantial attention from consumers in this respect (Koenig-Lewis et al., 2015). Additionally, since internet buying requires consumers to complete the purchase process individually

and without help from company personnel, clients must possess a particular degree of knowledge and ability (Alalwan et al., 2015). As a result, effort expectancys are expected to affect consumers' intentions to embrace online purchasing significantly. Ingham et al. (2015) found a strong correlation between the ease of use and consumers' attitude about online purchasing. Mandilas et al. (2013) confirmed that although females' desire to buy online is substantially predicted by effort expectancy, this connection is more likely to disappear for their male counterparts. Additionally, Pascual-Miguel et al. (2015) revealed a strong direct link between consumers' desire to buy online and perceived ease of use. This research offers another hypothesis that consumers' expectancy of effort will favourably impact their decision to embrace online purchasing.

2.5 Social Influence

Tarhini et al. (2016) defined social influence as the impact of contextual variables such as the views of family, friends and supervisors regarding user behaviour that adheres to subjective standards. Venkatesh et al. (2012) stated that social influence relates to external social pressures that impact individuals' perceptions and behaviour about participating in particular activities. As a result, when customers view online buying favourably, this may encourage them to embrace the practice of online purchasing. Social influence is a concept that encompasses the function of subjective norms, images and social circumstances in the UTAUT (Tarhini et al., 2016). Numerous online buying studies have shown that social influence affects consumers' propensity to adopt online shopping. Clemes et al. (2014) showed that the significance of social influence on Malaysian customers' decisions can be statistically predicted. As with social influence, personal norms have been shown to substantially affect consumers' adoption of online buying (Cimperman et al., 2016). Social influence had

a substantial effect on consumers' intentions in most research examining customers' adoption of online purchasing (Chong et al., 2012).

According to Ingham et al. (2015), social influence impacts behavioural intentions more significantly during the earliest stages of adopting an application. Consumers' social impact has an impact on their buying intention when they use the new applications. Customers are more likely to buy on a new E-commerce application if their friends have made a purchase there. Customers' expectancies are strongly affected by their brand impression, and their expectancies are also shaped by the brand's reputation for keeping its promises (Lassoued and Hobbs, 2015). Thus, customers will be more receptive to purchasing via a new online grocery application platform if the site receives enough exposure.

2.6 Facilitating Conditions

According to Clemes et al. (2014), facilitating conditions refer to an individual's belief in the technical and organizational infrastructure supporting the use of an application (i.e., the knowledge, skills, and consumer resources). Facilitating conditions shape an individual's confidence that the technological infrastructure is capable of supporting technology use (Yang & Forney, 2013). Facilitating conditions include a faster interface, speed in data processing, and the consumer's knowledge of online shopping features. It incorporates views of extrinsic limitations on behaviour, including resources and technological enabling environments (Yang & Forney, 2013). Clemes et al. (2014) highlighted customer support staff and guidance as factors that aid users in overcoming technological obstacles. However, this study's FC construct focused on the technical environment intended to eliminate the barriers to technology usage, thus enabling customers to adopt online grocery shopping applications. Because of the nature of online purchasing technology, an assistant will not always be accessible

(Venkatesh et al., 2012).

Additionally, since online commerce is a voluntary activity carried out to receive particular advantages or services, sophisticated technology and a well-designed interface can significantly aid in facilitating online buying. Thus, with an emphasis on the online environment, an individual's understanding of how to use the technology is essential for assessing the enabling circumstances in the context of purchasing via online applications (Bianchi & Andrews, 2012). Facilitating circumstances are a motivating element that contributes to consumers' ease of using applications for product and service purchases (Yang & Forney, 2013). When an individual makes online purchases, FC will enhance their performance expectancy. Pauzi (2017) indicated that social influences, facilitating conditions, hedonic motivations, perceived risk and perceived trust have a significant and direct effect on online shopping intentions and attitudes. Thus, a hypothesis was established that facilitating conditions are positively associated with online shopping performance expectancy.

2.7 Perceived Trust

Mutual trust between the supplier and their customers is critical for establishing a successful relationship between them (Gao et al., 2015). Trust is more closely linked to an individual's perception that the online shopping application has an adequate degree of capability, kindness and honesty (Sujeet & Manisha, 2019). Trust, one might argue, has been extensively addressed in previous literature as a technique used by people to alleviate the worries associated with using a new system (Al-Saedi et al., 2020; Chen et al., 2019; Alalwan et al., 2017). Perceived trust is a critical element of success in adopting new technologies (Amaro & Duarte, 2015). In the current research, perceived trust reflects the degree to which new E-commerce customers feel that purchasing on the site is trustworthy and secure.

Additionally, internet purchasing is most likely to include some financial transactions that may cause consumers to feel additional danger when using these platforms (Gao et al., 2015). In addition, online purchasing platforms lack human contact, resulting in increased ambiguity and uncertainty about the outcomes of utilizing online buying applications (Ingham et al., 2015; Amaro & Duarte, 2015; Chen et al., 2019). As a result, one might infer that consumers will be more likely to be disinclined to make online purchases if they lack complete confidence in such systems. Indeed, many studies have shown that trust significantly affects a consumer's desire to use online purchasing. Moreover, Chiu et al. (2012) showed that the role of trust plays a significant part in consumers' repeat buying intention when it comes to online shopping. Chiu et al. (2012) established a considerable correlation between trust and a customer's desire to use online purchasing. Furthermore, Ingham et al. (2015) presented further evidence showing the importance of trust in consumers' propensity to use online purchasing. Studies have proven the significant effect of perceived trust on the intention to make online purchases, which makes trust an important aspect in E-commerce (Al-Dwairi et al., 2018). As a result, a hypothesis was created that trust has a positive effect on consumers' desire to embrace online grocery shopping applications.

2.8 Perceived Risk

Farivar et al. (2018) defined perceived risk as consumers' perceptions regarding the possibility of undesirable consequences or the ambiguity of the results or repercussions of making an online transaction via a particular application. In this context, perceived risk is the probability that a customer will experience a loss when purchasing via a new E-commerce site. Because groceries are non-standardized goods, they are purchased based on the customer's experience and personal emotions. As a novel mode of fresh food distribution, online groceries platforms generate customer

concerns regarding product quality, timeliness of delivery, and payment security, among other things. As a result, purchasing intentions are influenced by perceived risk. Alalwan et al. (2017) stated that perceived risk significantly impairs customers' business intentions. As a result, customers' perceived risk affects their intention to buy on the new E-commerce platform. In this case, customers will abstain from buying on the new E-commerce site out of fear of loss.

According to Buehler and Maas (2018), perceived risk is a significant barrier to online purchase decisions. Perceived risk affects actual purchases more than trust (Indiani et al., 2015). Risk perceptions may be categorized into three types: performance risk, financial risk and privacy risk. Financial risk refers to the possibility of monetary loss faced by customers when buying online. Liu et al. (2013) defined performance risk as the threat posed by online shopping websites that fall short of customer expectancies in terms of performance. According to Han and Kim (2017), privacy risk is the expected loss of control over their individual information resulting from online purchasing activity. These three dangers that customers perceive are secondary variables that affect their desire to buy online. Thus, a reduced perceived risk will increase the likelihood of adopting online purchasing (Choi et al., 2013).

2.9 Sensory Stimulation

Sensory stimulation refers to the information and sensations received when one or more of the senses is engaged. It is also related to the mental state which some individuals experience when they are completely absorbed in particular objects, events or activities (Yang and Forney, 2013). The idea has been modified and extensively used to define the online environment. In this setting, online buying occurs when the customer is so absorbed in the shopping application that "nothing else appears to matter" (Venkatesh et al., 2012). Stimulation is a mental condition that a person

experiences when navigating a website. When people believe they have not reached their ideal degree of stimulation, they often engage in exploratory behaviours to attain that mental state via more stimulation (Clemes et al., 2014). Thus, users of online shopping applications may be expected to experience less difficulty in utilizing the applications and, as a result, feel less uncomfortable when doing so, given their increased stimulation requirements throughout their consumption process. Amaro & Duarte (2015) reported that people who exhibit greater sensory stimulation levels have increased degrees of curiosity, risk-taking, variety-seeking and adventurous behaviour. According to Yang and Forney (2013), individuals with a high sense of sensory stimulation are likely to feel anxiety when navigating grocery applications, particularly when exposed to the diversity of stimuli and information given by agents.

According to Cimperman et al. (2016), this concept may be used to develop online purchasing apps by relating it to an individual's level of attention to the stimuli associated with the online shopping experience. In addition to that, according to Yang & Forney (2013), people with a higher degree of sensory stimulation have heightened curiosity levels and a greater demand for sensory and cognitive stimulation. Therefore, these customers may be more likely to accept online shopping apps, paying more attention to them if they have a greater level of sensory stimulation. At the same time, the reverse is true for individuals with a low level of sensory stimulation. According to Venkatesh et al. (2012), a user's feelings about a specific shopping application as an overall opinion and emotional reaction to the system should also influence their level of attention to the application. In addition, Morganosky & Cude (2000) stated that online shopping is highly affected by sensory attributes.

2.10 Loss of Perceived Enjoyment

Perceived enjoyment relates to individuals' belief that adopting a new system or technology will give them pleasure (Chen et al., 2019). Loss of perceived enjoyment will result in a reduced belief that the products on the online shopping platform will offer satisfaction. Perceived enjoyment is an essential intrinsic motivator that quantifies the degree to which an application may provide delight. According to Clemes et al. (2014), perceived pleasure describes to the extent to which the action of using a particular application is considered to be pleasant in and of itself, independent of any performance outcomes associated with system use. As such, we examined the positive and negative impacts of reported pleasure on online purchasing apps in the current research. Perceived enjoyment is an external element in the Technology accepted model (Chen et al., 2019). Perceived pleasure is a critical external element that substantially impacts people's intention to use online grocery shopping apps.

If a person is not excited about using an online application, this will discourage them from utilizing that technology. According to Alalwan et al. (2017), pleasure is positively correlated with customer satisfaction and online purchasing behaviour. Chong et al. (2012) indicated in their research study that pleasure affects internet purchasing behaviour. In their research, Yang and Forney (2013) discovered that loss of pleasure, delight and joy had a negative impact on the use of shopping applications. By reviewing the literature on the loss of perceived enjoyment, we arrived at the hypothesis that the loss of perceived enjoyment negatively affects the intention to buy groceries online.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Research Model and Hypothesis Development

The research study aimed to assess the critical factors that affect consumers' adoption of online grocery shopping applications in Qatar. The research study was conducted in two steps. The first step was a literature review, and the second step was conducting the online survey.

This study adopted four variables from the UTAUT and four variables from previous research studies as predictors of consumer adoption. The four variables adopted from the UTAUT model, as shown in Figure 1, are performance expectancy (consisting of four items), effort expectancy (consisting of four items), social influence (consisting of three items) and facilitating conditions (consisting of four items) (Celik, 2016). Venkatesh et al. (2012) encouraged researchers to test the UTAUT model in several countries and to extend the model by adding more applicable factors.

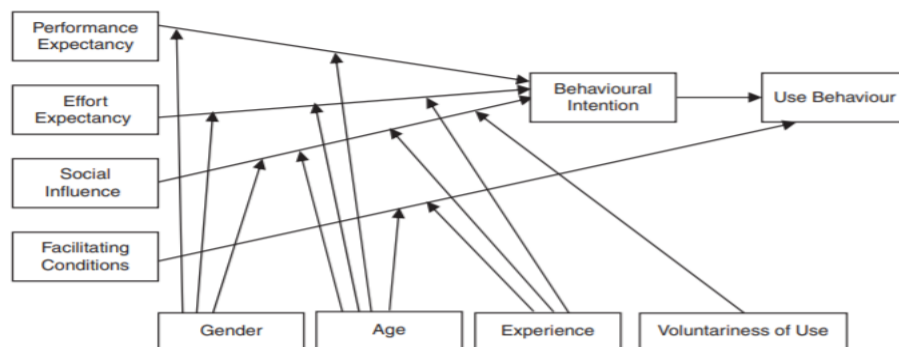


Figure 1: The Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2012)

In addition, the variable perceived trust (consisting of four items) was adopted from the research study of Al-Dwairi et al. (2018).

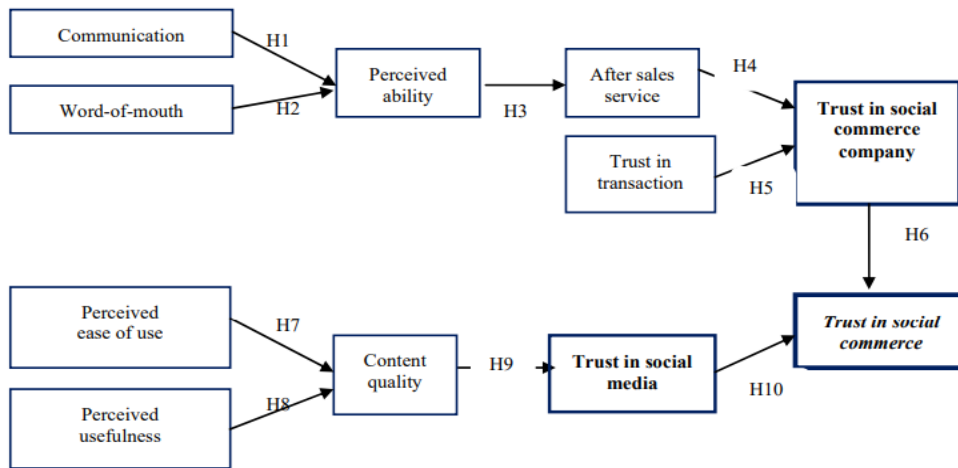


Figure 2: Trust on social commerce (Al-Dwairi et al., 2018).

Moreover, the variable of perceived risk (which consists of five items) was adopted from the research study of Bianchi & Andrews (2012) from their model illustrated in Figure 3.

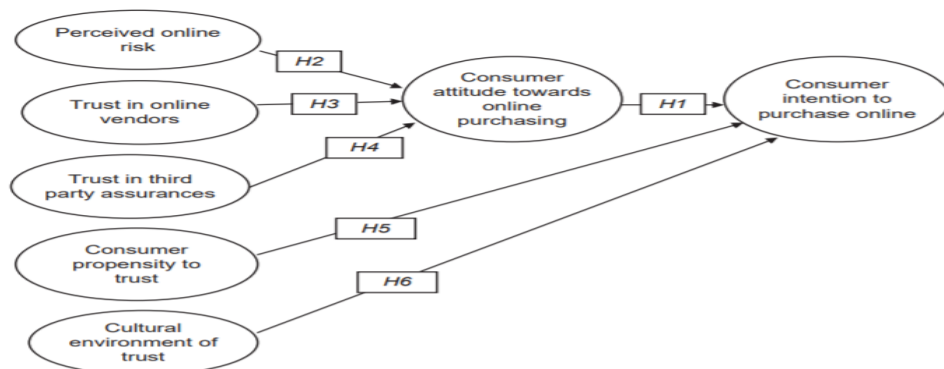


Figure 3: Risk, trust, and consumers' online purchasing behaviour (Bianchi & Andrews, 2012).

Two other extra variables were introduced in this study by the researcher, namely sensory stimulation (which consists of three items) and loss of perceived enjoyment (which consists of four items).

Based on the literature review, the research hypotheses are as follows:

H1: Performance expectancy have a positive impact on consumers' adoption of online grocery shopping.

H2: Effort expectancy have a positive impact on consumers' adoption of online grocery shopping.

H3: Social influence has a positive impact on consumers' adoption of online grocery shopping.

H4: Facilitating conditions have a positive impact on consumers' adoption of online grocery shopping.

H5: Perceived risk has a negative impact on consumers' adoption of online grocery shopping.

H6: Perceived trust has a positive impact on consumers' adoption of online grocery shopping.

H7: Sensory stimulation has a negative impact on consumers' adoption of online grocery shopping.

H8: Loss of perceived enjoyment has a negative impact on consumers' adoption of online grocery shopping.

Figure 4 shows the proposed model of this research study.

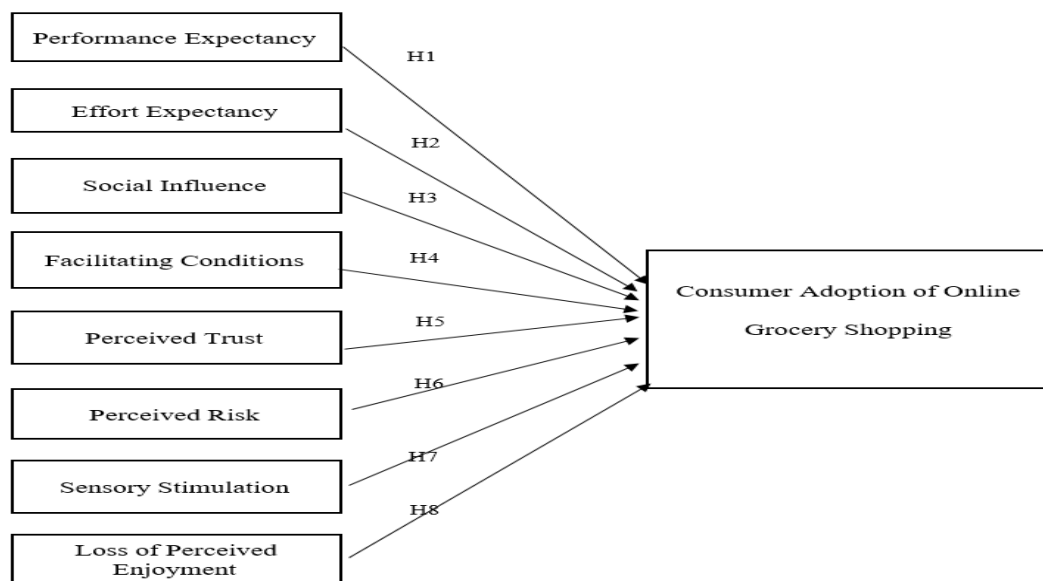


Figure 4: Research model.

3.2 Research Approach and Design

This research intended to identify the key factors that affect consumers' adoption of online grocery shopping in the context of Qatar. The questionnaire aimed to gather data about the customers' perceptions regarding the adoption of online grocery shopping applications.

The study adopted a quantitative method, where cross-sectional data were used. This empirical research approach is suitable for large samples to obtain a better representation of the study population.

3.3 Research and Databases

The research study was based on primary data which were collected from the survey. The primary data were collected via an online survey. The first part of the questionnaire classified the respondents based on their demographics: their age, gender, education level, nationality, monthly income, employments status and marital status. Following that, the survey asked about frequency of ordering groceries online, the current online grocery application that they currently use and the reason for using the online grocery shopping application. In the next part, the survey included questions regarding every independent and dependent variable of the study. The survey that was used to collect the data is presented in Appendix A (English) and Appendix B (Arabic).

3.4 Data Collection Method and Sample

The questionnaire was designed in two languages, English and Arabic. The first part of the survey collected the demographics of the participants such as age, gender, education level, nationality monthly income, employment status and marital status. The second part was based on a five-point Likert scale, where 1 = strongly disagree, 2 =

disagree, 3 = neutral, 4 = agree and 5 = strongly agree. The study variables were evaluated based on their ratings.

The random sample was targeted through an online link, which invited participants from Qatar only to fill the online survey. Subjects who were willing to complete the survey and participate in the study on a voluntary basis checked the link and filled out the survey. The link was distributed via emails and the WhatsApp phone application to collect the maximum number of respondents.

The survey allowed the respondents to answer the questions within 10 to 15 minutes. The survey included informed consent information that assured the confidentiality and anonymity of the collected data to reduce the non-response rate.

The sampling technique used in the study was probability sampling. Probability sampling means that each element has an equal chance of being involved in the sample (Taherdoost, 2016). This technique was adopted to increase the response rate. Therefore, the sample included all residents in the state of Qatar above the age of 18.

The survey data were collected from 5 September to 19 September 2021 using an online questionnaire platform (Google Forms). In total, 306 responses were collected. The collected data were exported from Google Forms to an Excel spreadsheet. For the data analysis, the data were transferred from the Excel spreadsheet to SPSS.

3.5 Validity of the Questionnaire

The questionnaire used in the current study was reviewed and received ethical approval from the QU-IRB Ethical Committee. The ethical approval number is QU-IRB 1528-E/21 and the approval letter that was obtained from the committee is available in Appendix C.

CHAPTER 4: DATA ANALYSIS AND RESULTS

In the questionnaire, we only considered completed responses; partly filled responses were automatically omitted. The sample of the research study involved a total of 306 respondents. Moreover, to find out the outliers in the dataset, a linear regression between the variables was applied. The principle that was used to define the outliers was 2.5 standard deviations. Therefore, seven outliers were identified and removed from the initial dataset to clean the data. Consequently, the final dataset included 299 responses.

4.1 Frequencies and Percentages

The frequency and percentage of the responses for the demographic variables are shown in Table 1. The research categorised the participants according to their demographics. In regard to age limit, the study considered only participants above the age of 18 years. In terms of age, 44.8% were in the 31–45 years category, 33% were in the 21–30 years category, followed by 16.7% in the 46 or more years category and 5.6% in the 18–20 age category. For gender, female respondents represented the majority at 67.3%, compared with 32.7% for male participants. Concerning the educational level, bachelor degree holders had the highest response at 59.5%, followed by 28.8% who were postgraduates, and 5.9% with a high diploma or high school. Regarding nationality, non-Qataris made up 63.1% compared with 36.9% for Qataris. With reference to monthly income, the majority (42.8%) earned more than 20,000 QAR per month, whereas 29.4% earned between 10,000 QAR and 20,000 QAR, 14.7% earned less than 10,000 QAR and 13.1% were not employed. Of the 306 respondents, 80.7% were employed, 9.8% were unemployed, 8.5% were students and 1% were retired. Regarding marital status, 69.6% were married and 30.4% were not married.

Table 1: Demographic data of the survey participants

Variable	Frequency	Percentage
Age		
18–20	17	5.6
46 or more	51	16.7
21–30	101	33.0
31–45	137	44.8
Gender		
Male	100	32.7
Female	206	67.3
Educational Level		
High school or less	18	5.9
Postgraduate	18	5.9
High diploma	88	28.8
Bachelor degree	182	59.5
Nationality		
Qatari	113	36.9
Non-Qatari	193	63.1
Monthly Income		
Not employed	40	13.1
Less than 10,000 QAR per month	45	14.7
Between 10,000 QAR and 20,000 QAR per month	90	29.4
More than 20,000 QAR per month	131	42.8
Employment status		
Retired	3	1.0
Student	26	8.5
Unemployed	30	9.8
Employed	247	80.7
Marital Status		
Not married	93	30.4
Married	213	69.6

The response percentages for the frequency and usage of ordering groceries online are represented in Table 2. The percentage of respondents who ordered their groceries online once per month is 41.83%, while 38.24% ordered their groceries online two to five times per month, 11.11 % of respondents ordered their groceries online 6–10 times per month and 8.82% ordered more than 10 times a month. The most used online grocery ordering application in Qatar is Talabat (42.31%), followed by Carriage (16.72%), the grocery shop application or website (15.22%), Use Rafeeq (14.05%), others (8.86%) and the Baqaala application (2.84%).

Table 2: Frequency and usage of online grocery shopping behaviour

Variable	Frequency	Percentage
Frequency of ordering groceries online		
Once a month	128	41.83
2–5 times a month	117	38.24
6–10 times a month	34	11.11
More than 10 times a month	27	8.82
The currently used online grocery ordering portals, websites and apps		
Talabat	253	42.31
Carriage	100	16.72
Grocery shop application or website	91	15.22
Rafeeq	84	14.05
Other	53	8.86
Baqaala	17	2.84
Total responses	598	100.00

The reasons for using online grocery shopping applications are illustrated in Table 3. In this part of the survey, participants had the chance to choose more than one reason. The majority of the respondents chose the convenience of the home delivery system (no waiting in queues and carrying bulky products), followed by the lack of time for in-store purchases.

Table 3: Reasons for using online grocery shopping applications

Variable	Frequency	Percentage
Convenience of home delivery system (no waiting in queues and carrying bulky products)	158	20.36
Lack of time for in-store purchases	154	19.85
Convenience of shopping from anywhere (at home or at the office) and the possibility of placing orders from any device	152	19.59
Convenience of experiencing a variety of products without physically going to the grocery shop	141	18.17
Convenience of shopping at any time of the day without having the constraints of the opening and closing times of the stores	113	14.56
Many offers/discounts/coupons available	51	6.57
Other reasons	7	0.90
Total responses	776	100.00

4.2 Descriptive Statistics

Descriptive analysis was executed on both the dependent and independent variables. Each of the eight variables represents one of the factors that affect consumers' adoption of online grocery shopping applications. The mean and the standard deviation of each variable was calculated. In the five-point Likert scale that the researcher adopted, 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree.

The descriptive statistics for the independent variable performance expectancy are illustrated in Table 4. In Table 4, most items were given high scores by the respondents, but one item (PE2: Using OGSA increases my efficiency in purchasing groceries) had moderate agreement. In addition, it was noted that this item has a higher

standard deviation than the rest of the variables, which means higher deviation and a greater difference in the sample.

Table 4: Descriptive statistics for performance expectancy

Item	Item Description	Min	Max	Mean	SD
PE1	I find OGSA very useful.	1	5	4.09	1.051
	Using OGSA increases my efficiency in purchasing groceries.	1	5	3.52	1.137
PE2	Using OGSA helps me accomplish things more quickly and increases my productivity.	1	5	3.87	1.055
PE3	I can save time when I use OGSA.	1	5	4.15	1.083
PE4					
Total for performance expectancy				3.91	1.08

Table 5 shows the descriptive statistics for the effort expectancy variable.

All items' means scored above 4, which indicates a high level of agreement with the statements.

Table 5: Descriptive statistics for effort expectancy

Item	Item Description	Min	Max	Mean	SD
EE1	Learning how to use OGSA to do grocery shopping is easy for me.	1	5	4.22	1.065
EE2	My interaction with OGSA is clear and understandable.	1	5	4.11	1.118
EE3	I find OGSA easy to use.	1	5	4.17	1.075
EE4	It is easy for me to become skilful at using OGSA.	1	5	4.09	1.042
Total for effort expectancy				4.147	1.07

With respect to the independent variable of social influence, as shown in Table 6, the three tested items of the construct indicated moderate agreement.

Table 6: Descriptive statistics for social influence

Item	Item Description	Min	Max	Mean	SD
SI1	People who are important to me think that I should use OGSA.	1	5	3.21	1.228
SI2	People who influence my behaviour think that I should use OGSA.	1	5	3.09	1.215
SI3	People whose opinions I value think that I should use OGSA.	1	5	3.24	1.197
Total for social influence				3.18	1.21

The descriptive statistics for the construct of facilitating conditions are shown in Table 7. The first three items indicated strong agreement with the statements but the fourth item (I can get help from others when I have difficulties using OGSA) revealed moderate agreement with the statement. It is also important to note that this item has the highest standard deviation.

Table 7: Descriptive statistics for facilitating

Item	Item Description	Min	Max	Mean	SD
FC1	I have the necessary resources to use OGSA.	1	5	4.09	1.087
FC2	I have the necessary knowledge to use OGSA	1	5	4.15	1.065
FC3	I feel comfortable using OGSA.	1	5	3.95	1.096
FC4	I can get help from others when I have difficulties using OGSA.	1	5	3.62	1.286
Total for facilitating conditions				3.95	1.13

Table 8 presents the descriptive statistics for the construct of perceived trust. The majority of the items for this variable indicated strong agreement with the statements, except for the third item (OGSA providers are trustworthy), which revealed moderate agreement with the statement.

Table 8: Descriptive statistics for perceived trust

Item	Item Description	Min	Max	Mean	SD
PT1	In general, OGSA are trusted nowadays.	1	5	3.75	1.099
PT2	I trust OGSA for my online purchases.	1	5	3.73	1.080
PT3	OGSA providers are trustworthy.	1	5	3.66	1.066
PT4	OGSA providers will keep their promises and deliver my groceries.	1	5	3.80	1.070
Total for perceived trust				3.73	1.08

Descriptive statistics for the variable of perceived risk are shown in Table 9 below. The responses to the last item (I use OGSA to reduce the risk of being infected by coronavirus – fear of physical interaction) indicated moderate agreement with the statement but the rest of the items indicated moderate disagreement.

Table 9: Descriptive statistics for perceived risk

Item	Item Description	Min	Max	Mean	SD
PR1	There is so much uncertainty about making purchases using OGSA.	1	5	2.88	1.215
PR2	Compared with other ways of making purchases, I feel that OGSA is more risky.	1	5	2.84	1.257
PR3	I feel safe using my credit card in OGSA.	1	5	3.37	1.254
PR4	I feel safe giving my personal details when using OGSA if requested.	1	5	3.17	1.292
PR5	I use OGSA to reduce the risk of being infected by coronavirus (fear of physical interaction).	1	5	3.70	1.199
Total for perceived risk				3.19	1.24

Table 10 shows the results for the descriptive statistics for the independent variable of sensory stimulation. The three items for this variable indicated a high level of agreement with the statement. Moreover, the standard deviation was close to 1 for

all items.

Table 10: Descriptive statistics for sensory stimulation

Code	Item Description	Min	Max	Mean	SD
SS1	When I use OGSA, I miss the experience of touching, smelling and checking the freshness of the food.	1	5	3.88	1.152
SS2	When I use OGSA, I miss the experience of touching, and examining the quality of the non-food items.	1	5	3.86	1.110
SS3	I believe that OGSA lack sensory aspects.	1	5	3.83	1.144
Total for sensory stimulation				3.86	1.14

Descriptive statistics for loss of perceived enjoyment are illustrated in Table 11. All the items indicated strong agreement with the statement, except for the second item (When I use OGSA, I miss the chance of meeting people in stores), which indicated moderate agreement with a higher standard deviation.

Table 11: Descriptive statistics for loss of perceived enjoyment

Item	Item Description	Min	Max	Mean	SD
LPE1	When I use OGSA, I miss the in-store shopping experience and store environment.	1	5	3.72	1.121
LPE2	When I use OGSA, I miss the chance of meeting people in stores.	1	5	3.54	1.244
LPE3	When I use OGSA, I miss the ability to discover new products and offers in the stores.	1	5	3.77	1.208
LPE4	When I use OGSA, I miss the opportunity to go to the store as a break from daily routine.	1	5	3.72	1.214
Total for loss of perceived enjoyment				3.69	1.20

Table 12 shows the descriptive statistics for the dependent variable: consumers' adoption of online grocery shopping. All the items showed strong agreement except for the last two items, which indicated moderate agreement with the statement.

Table 12: Descriptive statistics for the adoption of online grocery shopping

Item	Item Description	Min	Max	Mean	SD
CA1	I intend to use OGSA to purchase my groceries.	1	5	3.71	1.161
CA2	I will use OGSA when the price is competitive.	1	5	3.81	1.120
CA3	I plan to use OGSA when they have special offers (such as free home delivery).	1	5	3.88	1.165
CA4	I intend to continue using OGSA in the future.	1	5	3.89	1.051
CA5	I will always try to use OGSA in my daily life.	1	5	3.40	1.206
CA6	I plan to continue using OGSA frequently.	1	5	3.66	1.131
Total for adoption of OGSA				3.73	1.14

4.3 Reliability Test

To check the reliability of the survey, Cronbach's alpha test was generated in SPSS, as shown in Table 14. Cronbach's alpha is a statistical test that measures groups of items in the questionnaire that are closely related. To indicate an acceptable reliability, alpha should be greater than 0.7 and the higher the alpha, the better the reliability. According to Table 14, all variables have a high Cronbach's alpha of >0.7, except for the variable perceived risk, which has a Cronbach's alpha of 0.523. Further investigations into this variable are explained in the next chapter.

Table 13: Reliability statistics

Variable Description	Cronbach's Alpha
Performance Expectancy (PE)	0.879
Effort Expectancy (EE)	0.942
Social Influence (SI)	0.935
Facilitating Conditions (FC)	0.856
Perceived Trust (PT)	0.934
Perceived Risk (PR)	0.523
Sensory Stimulation (SS)	0.843
Loss of Perceived Enjoyment (LPE)	0.860
Consumers' adoption of online grocery shopping (CA)	0.914
No. of items used: PE (4), EE (4), SI (3), FC(4), PT (4), PR (5), SS (3), LPE (4), CA (6)	

4.4 Correlation Analysis

Pearson's correlations test were generated as shown in Table 14 to investigate the relationships among the constructs. According to the results, we can conclude that all variables are significantly correlated at the 0.01 level, which indicates a linear relationship between the variables and they all have a direct relationship. The strongest correlation (0.814) was between facilitating conditions and effort expectancy, and the lowest correlation (0.209) was between social influence and sensory stimulation. In addition, the variables were tested for multicollinearity. According to the correlation matrix in Table 14, all variables had a correlation lower than 0.9, which indicates no multicollinearity between the variables.

Table 14: Pearson's correlation matrix

Item	(PE)	(EE)	(SI)	(FC)	(PT)	(PR)	(SS)	(LPE)	(CA)
(PE)	1								
(EE)	.759**	1							
(SI)	.568**	.434**	1						
(FC)	.759**	.814**	.548**	1					
(PT)	.710**	.677**	.553**	.760**	1				
(PR)	.436**	.400**	.448**	.475**	.540**	1			
(SS)	.427**	.475**	.209**	.504**	.398**	.344**	1		
(LPE)	.360**	.389**	.214**	.377**	.291**	.362**	.632**	1	
(CA)	.782**	.656**	.548**	.696**	.655**	.432**	.431**	.330**	1

** . Correlation is significant at the 0.01 level (two-tailed). PE, performance expectancy ; EE, effort expectancy; SI, social influence; FC, facilitating conditions; PT, perceived trust; SS, sensory stimulation; CA, consumers' adoption

4.5 Multiple Regression Analysis

A regression analysis was performed to test the suggested hypotheses of the study, as shown in Table 15. The model explains 70% of the variance with $R^2 = 0.709$. Several runs were made in the SPSS program to test the regression of the independent variables against the dependent variable, then the variable of perceived risk was removed from the regression in light of the reliability test, since it had a Cronbach's alpha less than 0.07. Following that, an outlier analysis was conducted to remove the outliers from the study; seven outliers were found and removed, which reduced the final number of respondents to 299. According to the results, the proposed model was modified to the model shown in Figure 5.

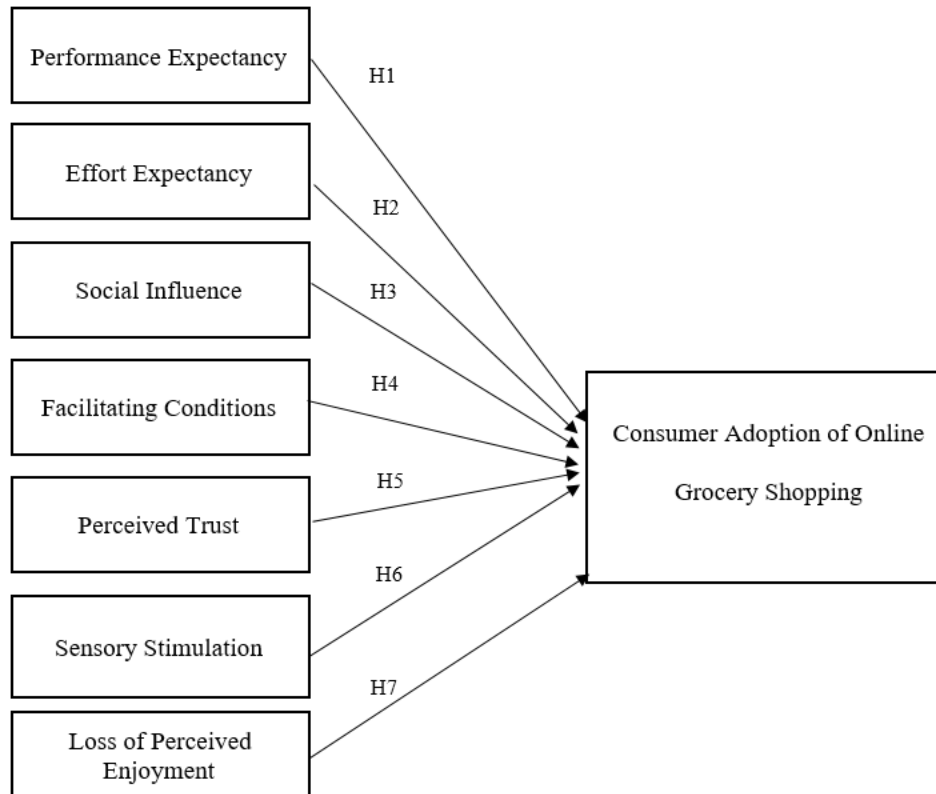


Figure 5: Modified model

The first hypotheses, which states that performance expectancy have a positive impact on customers' adoption of online grocery shopping was supported and it is significant ($p < 0.05$). The second hypotheses that effort expectancy have a positive impact on consumers' adoption of online grocery shopping was not significant and was rejected, since $p > 0.05$. Next, the third hypotheses that stated that social influence has a positive impact on consumers' adoption of online grocery shopping was accepted and is significant at $p < 0.05$. Moreover, the fourth hypothesis, which stated that facilitating conditions have a positive impact on consumers' adoption of online grocery shopping, was significant and was accepted ($p < 0.05$). The fifth hypothesis that perceived risk has a negative impact on consumers' adoption of online grocery shopping was rejected, as explained above. Regarding the sixth hypothesis, which stated that perceived trust has a positive impact on consumers' adoption of

online grocery shopping, was accepted and was significant since $p < 0.05$.

Furthermore, the seventh hypotheses arguing that sensory stimulation has a negative impact on online grocery shopping was accepted and was significant at $p < 0.05$.

Finally, the last hypothesis stating that loss of perceived enjoyment has a negative impact on online grocery shopping was rejected and was not significant ($p > 0.05$).

Table 15: Regression analysis

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	PE	0.480	0.057	0.479	8.363	0.000
	EE	0.021	0.056	0.023	0.377	0.707
	SI	0.090	0.034	0.109	2.653	0.008
	FC	0.156	0.065	0.159	2.385	0.018
	PT	0.120	0.050	0.127	2.421	0.016
	SS	0.088	0.042	0.092	2.066	0.040
	LPE	-0.010	0.038	-0.010	-0.250	0.803

a. Dependent Variable: consumers' adoption (CA). PE, performance expectancy; EE, effort expectancy; SI, social influence; FC, facilitating conditions; PT, perceived trust; SS, sensory stimulation; LPE, loss of perceived enjoyment

According to the regression analysis presented above, we can conclude that the most significant factor that affects consumers' adoption of online grocery shopping is performance expectancy since this construct has highest beta ($\beta = 0.470$). The second most effective factor is facilitating conditions ($\beta = 0.159$). The third most significant factor is perceived trust ($\beta = 0.127$). The fourth most significant factor is social influence ($\beta = 0.109$). The fifth and least significant factor is sensory stimulation ($\beta = 0.092$).

Table 16: Results of the hypotheses

Hypothesis	Hypothesis Result
Performance expectancy have a positive impact on customers' adoption of online grocery.	Supported (significant)
Effort expectancy have a positive impact on consumers' adoption of online grocery shopping.	Rejected (Not significant)
Social influence has a positive impact on consumers' adoption of online grocery shopping.	Supported (significant)
Facilitating conditions have a positive impact on consumers' adoption of online grocery shopping.	Supported (significant)
Perceived trust has a positive impact on consumers' adoption of online grocery shopping	Supported (significant)
Sensory stimulation has a negative impact on consumers' adoption of online grocery shopping	Supported (significant)
Loss of perceived enjoyment has a negative impact on online grocery shopping	Rejected (Not significant)

Figure 6 shows the final model of the research study including all the significant factors that have a positive impact on the consumer adoption of online grocery shopping applications in Qatar.

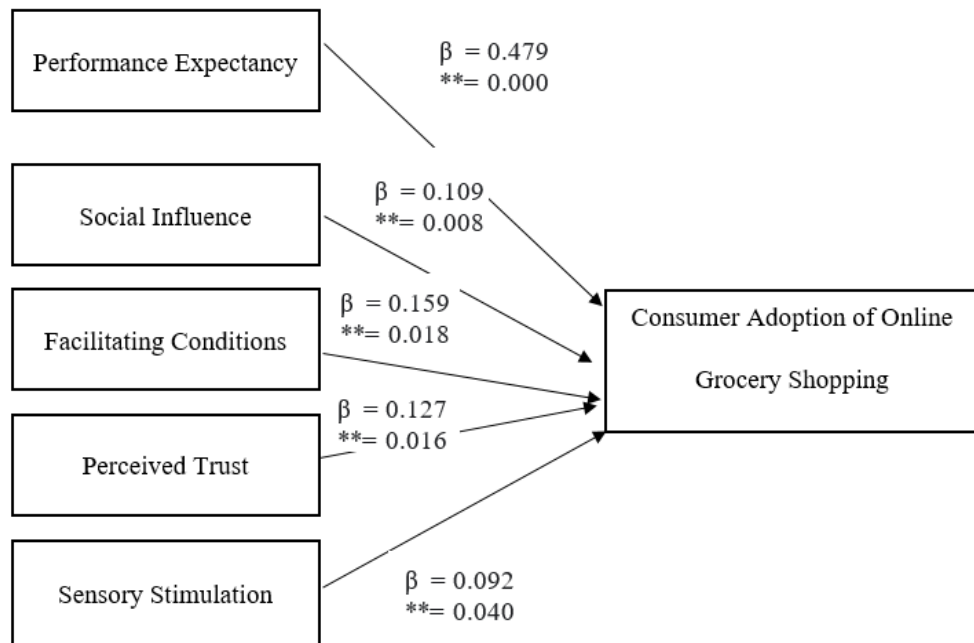


Figure 6: Final model

CHAPTER 5: DISCUSSION OF THE RESULTS

The aim of this research was to determine the key success factors that affect customers' adoption of online grocery shopping in the context of Qatar. The data were analysed in SPSS, where frequencies, percentages, descriptive statistics, reliability tests, correlation analysis and regression analysis were carried out.

The study involved 306 participants, of whom 67.3% were female and 32.7% were male, and 69.6% were married but 30.4% were not married. In terms of the nationality of the respondents, 63.1% were non-Qataris and 36.9% were Qataris. This distribution of respondents make sense, because the number of Qataris is less than the number of non-Qataris within the population in Qatar. The majority of participants were aged between 31 and 45 years, followed by the age category of 21–30 years. With regards to the educational level, most of the respondents had a bachelor degree. For the monthly income, 42.8% received an income of more than 20,000 QAR per month, followed by 29.4% receiving a monthly salary between 10,000 QAR and 20,000 QAR. In terms of the employment status of the participants, the majority were employed. With regards to the percentages and usage of ordering groceries online, 41.84% ordered their groceries online once a month, followed by 38.24% who ordered their groceries online two to five times a month. The most preferred and used online grocery ordering application is Talabat, followed by Carriage.

According to the findings of this study, convenience is one of the main reasons why participants use the online grocery shopping applications. This finding is similar to the findings of Hand et al. (2009), who stated that convenience was the most significant factor that affected the willingness to buy groceries using online portals. Moreover, it was found in this present study that the two main reasons for ordering

groceries online was the convenience of the home delivery system, with no waiting in queues and carrying bulky products, along with the convenience of shopping from anywhere (at home or at the office) and the possibility of placing orders from any device.

In this study, the UTAUT model was extended by adding the variables of perceived trust, perceived risk, sensory stimulation and loss of perceived enjoyment to evaluate the factors that affect consumers' adoption of online grocery shopping applications. The results of this study suggested that performance expectancy, social influence, facilitating conditions, perceived trust, and sensory stimulation are the most significant factors that affect consumers' adoption of online grocery shopping applications in Qatar. However, the study indicated that there was no significant effect of effort expectancy or the loss of perceived enjoyment on consumers' adoption of online grocery shopping applications.

5.1 Effect of Performance Expectancy on Consumers' Adoption of Online Grocery

Shopping

The results obtained from this research study confirmed that performance expectancy have a significant effect on consumers' adoption of online grocery shopping. This means that the participants find the online grocery shopping applications to be useful and efficient, and this affects their adoption. The findings of this study are in accordance with what several researchers have found and confirmed the significance of performance expectancy in the adoption of online grocery shopping (Dwivedi et al., 2019; Chen et al., 2019; Ingham et al., 2015; Rauniar et al., 2014).

5.2 Effect of Effort Expectancy on Consumers' Adoption of Online Grocery Shopping

Various studies have confirmed that performance expectancy have an impact on the adoption of online grocery shopping. However, this study has failed to approve the positive impact of effort expectancy on the adoption of online grocery shopping.

The findings of this study are aligned with the results of Oliveira et al. (2014), Baptista and Oliveira (2015) and Naranjo-Zolotov et al. (2018), who found that effort expectancy have no significant impact on the behavioural intentions. They argued that when people are familiar with a tool, the influence of the effort expectancy will be low in terms of the behavioural intentions.

5.3 Effect of Social Influence on Consumers' Adoption of Online Grocery Shopping

The outcomes of this study confirm that social influence has a significant impact on consumers' adoption of online grocery shopping. The findings indicate that the participants are influenced by people who are important to them with regards to the adoption of online grocery shopping.

Various studies (Venkatesh et al., 2012; Clemes et al., 2014; Cimperman et al., 2016; Chong et al., 2012) have confirmed the same outcomes of this study and stated that social influence has a significant effect on consumers' adoption of online grocery shopping applications.

5.4 Effect of Facilitating Condition on Consumers' Adoption of Online Grocery

Shopping

This study has confirmed the significant impact of the variable of facilitating conditions on the adoption of online grocery shopping applications. The findings indicated that the respondents of this study have the necessary knowledge and resources to use online grocery shopping with confidence and without any difficulties. The results of this research study agree with Pauzi's (2017) research that indicated that facilitating

conditions have a direct impact on the adoption of online grocery shopping.

5.5 Effect of Perceived Trust on Consumers' Adoption of Online Grocery Shopping

The findings of this study have shown that perceived trust has a significant impact on consumers' adoption of online grocery shopping. This indicates that the respondents of this study perceived online grocery shopping applications as a trusted tool for conducting their online purchases. Moreover, these outcomes are aligned with various previous studies (Al-Dwairi et al., 2018; Al-Saedi et al., 2020; Chen et al., 2019; Alalwan et al., 2017) which confirmed the significant impact of trust on the adoption of online shopping.

5.6 Effect of Sensory Stimulation on Consumers' Adoption of Online Grocery Shopping

According to the findings of the current study, sensory stimulation has a significant impact on online grocery shopping. The results of the study confirm that participants believe that online grocery shopping lacks sensory aspects and that by buying their groceries online, they miss the experience of checking the freshness of the food. Therefore, sensory stimulation is an important factor in consumers' adoption of online grocery purchases. In addition, the results of this study agree with the findings of Venkatesh et al. (2012), Morganosky & Cude (2000), and Yang and Forney (2013) which confirmed the impact of sensory stimulation on the adoption of online shopping.

5.7 Effect of Loss of Perceived Enjoyment on Consumers' Adoption of Online Grocery Shopping

The proposed hypotheses regarding the loss of perceived enjoyment states that loss of perceived enjoyment has a negative impact on the adoption of online grocery shopping applications. The findings of this study have revealed that there is no

significant effect of the independent variable “loss of perceived enjoyment” on the dependent variable, namely the adoption of the online grocery shopping. These findings contradict those of other research studies such as Yang and Forney (2013), which discovered that loss of pleasure, delight, and joy had a negative impact on the usage of online shopping applications.

CHAPTER 6: CONCLUSION

This research study aimed to determine the key success factors that affect customers' adoption of online grocery shopping in Qatar. The study has applied various statistical methods to test the impact of the factors on the consumers' intentions. According to the statistical tests performed, the research has identified the most significant factors that affect consumers' adoption of online grocery shopping applications in Qatar, which are performance expectancy, facilitating conditions, perceived trust, social influence and sensory stimulation. The study has also identified that factors that do not have a significant impact on consumers' adoption of online grocery shopping.

6.1 Implications and Recommendations

The findings of the research study can benefit decision-makers in the field of the online grocery shopping to improve their services by enhancing the customer's satisfaction to meet their expectancy and satisfy their needs. The findings of the study, which was based in Qatar, can help the top management to craft strategies based on these factors to increase their sales. In addition to that, this study will give new entrepreneurs who are interested in online grocery shopping the factors that they should consider when starting their business.

The study has revealed the significant impact of sensory stimulation on the adoption of online grocery shopping. This means that people in Qatar consider the sensory features before buying groceries online. Businesses can benefit from this finding and improve their applications to include modern features and real pictures of their products to reduce the risk of the loss of sensory features.

The study has confirmed the significant influence of the social influence on the

adoption of online grocery shopping. This finding indicated that customers are strongly influenced by the opinion of people around them. Therefore, E-grocery business owners should focus their advertising efforts on people who share similar characteristics and enhance their websites by adding customer feedback on the services they provide (Piroth et al., 2020).

In terms of trust, the study has confirmed the significant impact of perceived trust on the adoption of online grocery shopping applications. Therefore, managers need to focus their strategies on improving the perceived trust of their customers by focusing on enhancing the security of their applications and websites (Chong et al., 2012). Moreover, firms should focus on improving the delivery times by sending the groceries to the customers at the right time with good-quality packaging. This will increase repurchasing behaviour and trust between the service providers and the customers.

6.2 Limitations and Future Directions

This research study provides a base for subsequent studies, as it is the first of its kind to be carried out in Qatar to explore the factors that affect consumers' adoption of online grocery shopping applications.

With regards to the sample size, the researcher was able to collect 306 responses; future studies may increase the sample size to test the significance of the impact of the variables on online grocery shopping.

The study is representative in terms of nationality, as the percentage of Qatari respondents was less than the percentage of non-Qataris. This result is similar to the real population of Qatar, where the number of -Qataris reached 12% with respect to 88% for temporary visitors and immigrants (Hadid et al., 2021).

Studies in the future can investigate the effect of other variables on the adoption of online grocery shopping, or apply the research to other GCC countries, since customers in the Gulf region share similar characteristics.

Future researchers could build their studies based on these results and may add other variables to the model and investigate the impact of the constructs on online grocery shopping. In their study, Zhou et. al. (2007) confirmed that the variables of age, income and gender are the most significant factors that influence the buyers' intention to purchase products from online stores. Future studies may investigate the effect of age, income and gender on the adoption of online grocery shopping applications. Convenience was found to be the main reason for ordering groceries online in this research; this finding can be used in future studies to test convenience as the most significant variable that affects consumers' adoption of online grocery shopping.

In terms of the type of the research, future researchers may use qualitative research rather than the quantitative method that was used in this study. Researchers may use the most significant factors that were found in this research and test them by conducting focus group interviews with loyal customers and service providers to obtain their perceptions of online grocery shopping.

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APPENDICES

APPENDIX A: ENGLISH SURVEY



Questionnaire English Version

Research Topic: Factors Affecting Consumers' Adoption of Online Grocery Shopping applications in Qatar

Dear Sir/Madam:

This research is being conducted as part of my graduation project requirements in the MBA program at the College of Business and Economics, Qatar University. This survey will address the factors affecting the adoption of Online Grocery Shopping applications in Qatar with eight predictor variables (i.e., performance expectancy, effort expectancy, social influence, facilitating conditions, perceived Trust, perceived Risk, sensory stimulation and the loss of perceived enjoyment). Therefore, we have adapted this questionnaire in order to collect data about consumer's perceptions toward doing grocery shopping online.

Your answers to the questions in this survey are essential to the completion of this study. The information collected will be kept strictly confidential. You are not required to disclose any confidential information and the survey will be completely anonymous. The information will be stored on a secured password-protected laptop and only the researcher will have access to it. The data will not be used for any other purpose in the future. All data will be permanently destroyed after three years. By clicking on the provided research questionnaire link, you give your full informed consent to participate in this research study. Answering this survey will only take 10 to 15 minutes. The time and effort you spend in answering this survey are highly appreciated. Your participation in this survey is voluntary, where you can skip any question or withdraw at any time, and your feedback and all of your suggestions will be kept strictly confidential and used for research purposes only. If you are less than 18 years old, please do not take the survey. This study is approved by Qatar University Internal Review Board (QU-IRB) under the approval No.:

If you have any questions about this research, feel free to contact me and/or my supervisor at the following email addresses: Asma Ghenai (ag080521@qu.edu.qa) and Emad Abu-Shanab (ebushanab@qu.edu.qa)

Please indicate that you have read and understood the above , If you agree to participate tick "Yes" , if not tick "No"



General information: Please select the appropriate choice of the following:

1. Frequency of Ordering grocery online

Once a month	2-5 times a month	6-10 times a month	More than 10 times a Month
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Age Category

18-20	21-30	31-45	45- or More
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Gender

Male	Female
<input type="checkbox"/>	<input type="checkbox"/>

4. Education Level

High School or less	High Diploma	Bachelor	Postgraduate
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Nationality

Qatari	Non-Qatari
<input type="checkbox"/>	<input type="checkbox"/>

6. Monthly Income

More than 20,000 QAR per month	Between 10,000 QAR and 20,000 QAR per month	Less than 10,000 QAR per month	Not employed
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Employment status

Employed	Unemployed	Student	Retired
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Marital Status

Married	Not-Married
<input type="checkbox"/>	<input type="checkbox"/>

9. What is/are the online Grocery ordering portals media websites/ pages/ Apps you are currently using (you can choose more than one)

Talabat	Rafeeq	Carriage	Baqala Application	Others please specify
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Grocery shop application or website

Please indicate the reason for using Online grocery shopping applications (OGSA)(you may choose more than one option)
* Lack of time to do in-store purchase.
* Convenience to experience variety of products without physically going to the grocery shop.
* Convenience of shopping from anywhere (at home or at office) and the possibility of placing orders from any device.
* Convenience of home delivery system, no waiting in queues and carrying bulky products.
* Convenience of shopping anytime of the day without having the constraints of opening and closing timing of stores
* Many offers/discounts/coupons available
*Other reasons

Please indicate the degree to which you agree or disagree with the following statements where OGSA refers to online grocery shopping applications:

Num	Performance Expectancy (PE)	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
1	I find OGSA very useful.					
2	Using OGSA increases my efficiency in purchasing groceries.					
3	Using OGSA helps me accomplish things more quickly and increase my productivity.					
4	I can save time when I use OGSA.					
Num	Effort Expectancy (EE)	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
1	Learning how to use OGSA to do grocery is easy for me.					
2	My interaction with OGSA is clear and understandable.					
3	I find OGSA easy to use.					
4	It is easy for me to become skillful at using OGSA.					
Num	Social Influence (SI)	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
1	People who are important to me think that I should use OGSA.					
2	People who influence my behavior think that I should use OGSA.					
3	People whose opinions I value, think that I should use OGSA.					
Num	Facilitating Conditions (FC)	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
1	I have the necessary resources to use OGSA.					
2	I have the knowledge necessary to use OGSA					
3	I feel comfortable using OGSA.					
4	I can get help from others when I have difficulties using OGSA.					

Num	Perceived Trust (PT)	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
1	In general, OGSA are trusted nowadays.					
2	I trust OGSA for my online purchases.					
3	OGSA providers are trustworthy.					
4	OGSA providers will keep their promises and deliver my groceries.					
Num	Perceived Risk (PR)	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
1	There is so much uncertainty to make purchases using OGSA.					
2	Compared to other ways of making purchases, I feel that OGSA is more risky.					
3	I feel safe to use my credit card in OGSA.					
4	I feel safe giving my personal details when using OGSA if requested.					
5	I use OGSA to reduce the risk of being infected by Corona Virus (fear of physical interaction).					
Num	Sensory stimulation (SS)	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
1	When I use OGSA, I drop the experience of touching, smelling and checking the freshness of the food.					
2	When I use OGSA, I miss the experience of touching, and examining the quality of the non-food items.					
3	I believe that OGSA lack sensory aspects.					
Num	Loss of Perceived enjoyment (LPE)	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
1	When I use OGSA, I lose the in store shopping experience and store environment.					
2	When I use OGSA, I drop the chance of meeting people in stores.					
3	When I use OGSA, I miss the ability to discover new products and off in the stores.					
4	When I use OGSA, I miss the opportunity to go to the store as a break from the daily routine.					

6

Num	Consumer's adoption of online grocery shopping (CA)	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
1	I intend to use OGSA to purchase my groceries.					
2	I will use OGSA when price is competitive.					
3	I plan to use OGSA when they have special offers (such as free home delivery).					
4	I intend to continue using OGSA in the future					
5	I will always try to use OGSA in my daily life.					
6	I plan to continue using OGSA frequently.					

Please share with us any other suggestions or comments you may have?

.....
.....
.....

Thanks for taking the time to participate in this survey



APPENDIX B: ARABIC SURVEY

العوامل المؤثرة على استخدام المستهلكين لتطبيقات شراء البضائع الاستهلاكية عبر الإنترنت في قطر

استبيان

للنسخة العربية

موضوع البحث: العوامل المؤثرة على استخدام المستهلكين لتطبيقات شراء البضائع الاستهلاكية عبر الإنترنت في قطر

يسعدنا دعوتك للمشاركة في هذه الدراسة البحثية بعنوان "العوامل المؤثرة على استخدام المستهلكين لتطبيقات شراء البضائع الاستهلاكية عبر الإنترنت في قطر".

يتم إجراء هذا البحث كجزء من متطلبات مشروع التخرج في برنامج ماجستير إدارة الأعمال في كلية الإدارة والاقتصاد بجامعة قطر.

سيتناول هذا الاستبيان العوامل التي تؤثر على استخدام المستهلكين لتطبيقات شراء البضائع الاستهلاكية عبر الإنترنت في قطر مع ثمانية متغيرات تنبؤية (توقع الأداء، الجهد المتوقع، التأثير الاجتماعي، الظروف التسهيلية، الثقة، المخاطر، التحفيز الحسي وفقدان المتعة). لذلك، فمما يعمل هذا الاستبيان من أجل جمع البيانات حول تصورات المستهلك تجاه شراء البضائع الاستهلاكية عبر الإنترنت.

تعتبر إجاباتك على الأسئلة الواردة في هذا الاستطلاع ضرورية لاستكمال هذه الدراسة.

لا توجد مخاطر أو أضرار مرتبطة بالمشاركة في هذا الاستطلاع. هدف هذا البحث أكاديمي بحث، ولن تُقدم أي معلومات منها إلى أي شخص آخر. سيتم الاحتفاظ بسرية وأمان المعلومات التي يتم جمعها، حيث سيتمكن الباحثون فقط من الوصول إليها. سيتم إتلاف جميع البيانات بشكل دائم بعد ثلاث سنوات. لن يتم إعادة استخدام البيانات لأي غرض آخر في المستقبل. إذا كان عمرك أقل من 18 عامًا، فيرجى عدم المشاركة في الاستبيان. سيتم جمع البيانات بشكل مجهول، وفرزها في برنامج إحصائي، وسيتم استخدامها للأغراض الأكاديمية فقط. سيتم الاحتفاظ بالبيانات التي تم جمعها في كميبيوتر محمول بسرية وأمن وسيتم حفظها في جهاز كميبيوتر يتطلب كلمة مرور للوصول إليه. ونطلب منك التفضل بالمشاركة في استبيان عبر الإنترنت، ومن المتوقع ألا يأخذ من وقتك أكثر من عشرة أو خمس عشرة دقائق. ومشاركك في هذا الاستبيان تطوعية ومجوبة بالكامل. ويمكنك الانسحاب من هذا الاستبيان في أي وقت.

ستشمل الدراسة جميع المواطنين والمقيمين الذين يعيشون في قطر وخاصة الذين تبدأ أعمارهم من 18 عامًا فما فوق فقط. سيتم استبعاد كل من لا يستطيعون تعبئة الاستبيان، أو الذين لا يعيشون في قطر، أو أقل من 18 عامًا.

من خلال الضغط على رابط الاستبيان البحثي، فإنك تعطي موافقتك الكاملة للمشاركة في هذه الدراسة البحثية.

تمت الموافقة والاعتماد لهذا الاستبيان لجنة الموسسية بجامعة قطر تحت الرقم المرجعي.....

في حالة وجود أي استفسارات، يمكنك التواصل معي أو مع مشرقتي عبر عنوان البريد الإلكتروني الآتي:
الدكتور صمد أبو شنب، كلية الإدارة والاقتصاد، جامعة قطر
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يرجاء التوضيح أنك قرأت وفهمت التوجيهات. إن كنت تود المشاركة، يرجى اختيار "نعم"

"نعم" "لا"



العوامل المؤثرة على استخدام المستهلكين لتطبيقات شراء البضائع الاستهلاكية عبر الإنترنت في قطر

معلومات عامة - يرجى تحديد الاختيار المناسب مما يلي:
[عدد مرات استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت

أكثر من 10 مرات شهريا 5- مرات شهريا 2-5 مرات شهريا مرة شهريا

2- العمر

18-20 21-30 31-45 45- or More

3- النوع

ذكر أنثى

4 - المستوى التعليمي

دراسات عليا بكالوريوس دبلوم ثانوية عامة أو أقل

5- الجنسية

قطري غير قطري

6- الراتب الشهري

لا اعل أقل من 10-000 ريال قطري شهريا بين 10-000 ريال قطري و 20-000 ريال قطري شهريا أكثر من 20,000 ريال قطري شهريا



العوامل المؤثرة على استخدام المستهلكين لتطبيقات شراء البضائع الاستهلاكية عبر الإنترنت في قطر

7- الوضع الوظيفي

متقاعد	طالب	لا يعمل حالياً	يعمل حالياً
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8- الحالة الاجتماعية

غير متزوج	متزوج
<input type="checkbox"/>	<input type="checkbox"/>

9- ما هي التطبيقات التي تستخدمها حالياً لشراء البضائع الاستهلاكية عبر الإنترنت (يمكنك اختيار أكثر من واحدة)

أخرى . برجاء التوضيح	تطبيق بلاتة	كارتاج	رقوق	طلبك
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

التطبيق أو الموقع الإلكتروني لتسليم

يرجى توضيح سبب استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت، يمكنك اختيار أكثر من سبب:
* حديق الوقت للقيام بشراء البضائع الاستهلاكية من المتجر.
* سهولة تصفح مجموعة متنوعة من المنتجات دون الذهاب فعلياً إلى المتاجر.
* سهولة التسوق من أي مكان (في المنزل أو في المكتب) وإمكانية الشراء من أي جهاز.
* سهولة نظام التوصيل إلى المنزل، وعدم الانتظار في طوابير وحمل منتجات ضخمة وثقيلة.
* راحة و سهولة التسوق في أي وقت من اليوم دون وجود قيود متعلقة بفتح وإغلاق المتاجر.
* توفر العديد من العروض / الخصومات / القسائم
* أسعار أرخص

العوامل المؤثرة على استخدام المستهلكين لتطبيقات شراء البضائع الاستهلاكية عبر الإنترنت في قطر

رجاء اختيار المربع الذي يوضح رأيك ودرجة موافقتك أو عدم موافقتك على العبارات التالية:

الرقم	توقع الأداء	لا اوافق بشدة	لا اوافق	لا اوافق ولا اعارض	موافق	اوافق بشدة
1	I find OGSA very useful. اجد استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت مفيد جدا .					
2	Using OGSA increases my efficiency in purchasing groceries. استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت يزيد من كفاءتي .					
3	Using OGSA helps me accomplish things more quickly and increase my productivity. بساعدني استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت في إنجاز الأشياء بسرعة أكبر ويزيد من إنتاجتي.					
4	I can save time when I use OGSA. أستطيع توفير الوقت عند استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت.					
الرقم	الجهد المتوقع	لا اوافق بشدة	لا اوافق	لا اوافق ولا اعارض	موافق	اوافق بشدة
1	Learning how to use OGSA to do grocery is easy for me. تعلم كيفية استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت سهل بالنسبة لي.					
2	My interaction with OGSA is clear and understandable. تفاعلي مع تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت واضح ومفهوم بالنسبة لي.					
3	I find OGSA easy to use. اجد تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت سهلة الاستخدام.					
4	It is easy for me to become skillful at using OGSA. من السهل بالنسبة لي أن أصبح ماهرا في استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت.					
الرقم	التأثير الاجتماعي	لا اوافق بشدة	لا اوافق	لا اوافق ولا اعارض	موافق	اوافق بشدة
1	People who are important to me think that I should use OGSA. الناس المهمين بالنسبة لي يعتقدون أنه يجب أن أستخدم تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت.					
2	People who influence my behavior think that I should use OGSA. الناس الذين يؤثرون على سلوكي يعتقدون أنني يجب أن أستخدم تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت.					

العوامل المؤثرة على استخدام المستهلكين لتطبيقات شراء البضائع الاستهلاكية عبر الإنترنت في قطر

3	People whose opinions I value, think that I should use OGSA. الأشخاص الذين أقدر آرائهم، يعتقدون أنني يجب أن أستخدم تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت.					
الرقم	الظروف التسهيلية	لا اوافق بشدة	لا اوافق	لا اوافق ولا اعارض	موافق	اوافق بشدة
1	I have the resources necessary to use OGSA. يتوفر لدي المواد اللازمة لاستخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت.					
2	I have the knowledge necessary to use OGSA. يتوفر لدي المعرفة اللازمة لاستخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت.					
3	I feel comfortable using OGSA. أشعر بالراحة عند استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت.					
4	I can get help from others when I have difficulties using OGSA. يمكنني الحصول على مساعدة من الآخرين عندما يكون لدي صعوبات في استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت.					
الرقم	الثقة	لا اوافق بشدة	لا اوافق	لا اوافق ولا اعارض	موافق	اوافق بشدة
1	In general, OGSA are trusted nowadays. بشكل عام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت موثوق بها في الوقت الحاضر.					
2	I trust OGSA for my online purchases. أثق في تطبيقات شراء البضائع الاستهلاكية لشراء مشترياتي عبر الإنترنت.					
3	OGSA providers are trustworthy. مقدمي تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت جديرين بالثقة.					
4	OGSA providers will keep their promises and deliver my groceries. سوف يفي مقدمو خدمات شراء البضائع الاستهلاكية عبر الإنترنت بوعودهم وسيقومون بتوصيل بضائمي الاستهلاكية.					
الرقم	المخاطر	لا اوافق بشدة	لا اوافق	لا اوافق ولا اعارض	موافق	اوافق بشدة
1	There is so much uncertainty to make purchases using OGSA. هناك الكثير من عدم اليقين لإجراء عمليات الشراء باستخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت.					
2	Compared to other ways of making purchases, I feel that OGSA is more risky. مقارنة بالطرق الأخرى لإجراء عمليات الشراء، أشعر أن تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت أكثر خطورة من غيرها.					

العوامل المؤثرة على استخدام المستهلكين لتطبيقات شراء البضائع الاستهلاكية عبر الإنترنت في قطر

الرقم	استخدام المستهلكين لتطبيقات شراء البضائع الاستهلاكية عبر الإنترنت	لاوافق بشدة	لاوافق	لاوافق ولا اعترض	موافق	وافق بشدة
1	I intend to use OGSA to purchase my groceries. أبوي استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت لشراء احتياجاتي .					
2	I will use OGSA when price is competitive. سأستخدم تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت عندما يكون السعر تنافسيًا.					
3	I plan to use OGSA when they have special offers (such as free home delivery). أخطط لاستخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت عندما يكون هناك عروض خاصة (مثل التوصيل المجاني للمنزل).					
4	I intend to continue using OGSA in the future أبوي الاستمرار في استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت في المستقبل.					
5	I will always try to use OGSA in my daily life. سأحاول دائما استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت في حياتي اليومية.					
6	I plan to continue using OGSA frequently. أخطط لمواصلة استخدام تطبيقات شراء البضائع الاستهلاكية عبر الإنترنت بشكل متكرر.					

يرجى مشاركة أي اقتراحات أو تعليقات أخرى قد تكون لديك

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شكرا لمشاركته في هذا الاستبيان



APPENDIX C: QU-IRB APPROVAL LETTER



Qatar University Institutional Review Board **QU-IRB**

QU-IRB Registration: IRB-QU-2020-006, QU-IRB, Assurance: IRB-A-QU-2019-0009

DATE: April 22, 2021
TO: emad Abu-Shanab, professor
FROM: Qatar University Institutional Review Board (QU-IRB)
PROJECT TITLE: 1721520-1Factors Affecting Consumers' Adoption of Online Grocery Shopping applications in Qatar
QU-IRB REFERENCE #: QU-IRB 1528-E/21
SUBMISSION TYPE: New Project
ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: April 22, 2021
REVIEW CATEGORY: Exemption category # 2&4

Thank you for your submission of New Project materials for this project. The Qatar University Institutional Review Board (QU-IRB) has determined this project is EXEMPT FROM IRB REVIEW according to Qatar Ministry of Public Health regulations. Please note that exempted proposals do not require renewals however, any changes/modifications to the original submitted protocol should be reported to the committee to seek approval prior to continuation.

We will retain a copy of this correspondence within our records.

Documents Reviewed:

- Other - QU-IRB Check List.pdf (UPLOADED: 03/14/2021)
- Proposal - research proposal.docx (UPLOADED: 04/8/2021)
- Qatar University - IRB Application - Qatar University - IRB Application (UPLOADED: 04/8/2021)
- Questionnaire/Survey - Questionnaire Arabic Version and consent - Asma Ghenai.docx (UPLOADED: 04/8/2021)
- Questionnaire/Survey - Questionnaire English Version and consent - Asma Ghenai.docx (UPLOADED: 04/8/2021)

If you have any questions, please contact QU-IRB at 4403 5307 or qu-irb@qu.edu.qa. Please include your project title and reference number in all correspondence with this committee.

Best wishes,

Dr. Ahmed Awaisu
Chairperson, QU-IRB



This letter has been issued in accordance with all applicable regulations, and a copy is retained within Qatar University's records.