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Investigation of Consumer Intention toward Online Shopping During Covid-19 Pandemic

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Abstract: This study aims to explore the factors affecting the consumer intention toward online shopping during the Covid-19 pandemic, by examining 8 factors, the Perceived Lack of Alternatives, Perceived External Pressure, and Perceived Controlled Behavior on consumer Intention, and Perceived Usefulness, Perceived Ease of Use, Perceived Risk and Subjective Norm on consumer intention with a mediating effect of consumer Attitude. Online questionnaire had been built to evaluate all variables in the conceptual model, and snowball sampling technique had been applied. A total of 817 participants has responded to the questionnaire, all from Jordan with a mix of different educational backgrounds, ages, gender, marital status and financial income. Confirmatory factor analysis, multi-regression and path analysis was run using AMOS 26.0, and frequencies statistics has been done using SPSS 26.0. This study data analysis revealed that Perceived Lack of Alternatives and Perceived External Pressure has no significant impact on consumer intention, whereas Perceived controlled behavior found to have a significant influence on consumer intention. The results also revealed that Perceived Usefulness, Perceived Ease of Use, Perceived Risk and Subjective Norm has significant influence on consumer intention with a mediating effect of consumer Attitude. Understanding consumer behavior during Covid-19 could reveal insights for customers' intention toward online shopping after the pandemic. This research has developed an integrated model to show the factors that determine the customers' intention for online shopping. These factors can help the retailers to adopt the new norm of life after the Covid-19 pandemic and allocate investments to transform their traditional business models and switch to online shopping platforms.

Keywords: Consumer Attitude, Consumer Intention, Covid-19 Impact, Online Shopping, TAM and TPB Theories.

1 Introduction

Technology and its tools have massively developed, and they have undoubtedly transformed people's lives over the last two decades; nowadays people can perform almost every day routine tasks online. The Internet, in particular, has changed the way customers purchase their products; they tend to use online services by visiting online markets websites or using online shopping applications[1]. Using these services has increased dramatically in recent years, and especially with the emergent of the COVID-19 pandemic in 2020. Covid-19 has hit every single country around the world and has affected all industries, which introduced new business models to adopt the impact such as online services, e-learning, e-government platforms, and online shopping. Several restriction procedures have been conducted during the Covid-19 pandemic in almost every country around the world [2].

Just before the spread of the pandemic, Jordan was one of the countries that capitalized on the recent technologies to develop its business. So it maintained a constant percentage of 8.0% of online purchase transactions for online shoppers in 2018 and 2019[3]. However, when the pandemic has spread out, Jordan has started a complete lockdown state in March 2020 and closed almost every commercial and governmental institute[4]. To keep the economical wheel running, Jordan performed specific models to maintain the businesses to operate in a limited manner. These limitations were in an attempt for the control over the spread of the disease. For instance, online purchases was adopted by many businesses, contactless delivery was implemented and social gathering for groups more than ten was restricted, as many countries did[5]. With the new procedures applied, locally and globally, Online shopping was impacted, and consumers tend to use online methods more than traditional ones during Covid-19 pandemic[6]. In

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fact, the reliance on the online purchasing has been clearly evident. For instance, Jordan Payments and Clearing Company [7] noticed intense demand for buying and selling products and services via the digital means, and according to their report that showed the number of online transactions payments has been multiplied four times since April 2020, and it maintained the increase throughout the year to reach 600% increment in the total number of transactions in September 2020 compared to January same year [8]. Such results are in line with former works that suggested that the demand for on-line purchasing is expected to increase in the future [1,9].

According to such results and observations, it becomes very interesting to investigate to what extent such increasing trend will be maintained, and therefore this research aims to understand the behavior and the intention of the customers during and after the COVID-19 era. Indeed, understanding the customers' intention and customers' behavior toward purchasing their products and services using online means is a complicated issue, and in many cases, it becomes difficult to predict human behaviors. In this regard, to articulate clear understanding about the intention and behavior of the customers, there is a need to investigate the factors that determine this behavior and intention.

To understand which factors, influence consumer intention and behavior toward online shopping, several studies have considered different theories and frameworks. Amongst these theories the most common are the Theory of Planned Behavior (TPB) [10], in addition to the Technology Acceptance Model (TAM) [11]. Many of the previous studies which adopted the TBP and TAM have considered the subjective norm (SN), perceived ease of use (PEOU), and perceived usefulness (PU) to influence the consumer attitude toward the technology, and perceived behavior control (PBC) as influencing factor on the consumer intention toward the technology [12-14].

This study aims to examine TAM and TPB to evaluate and analyze the influencing factors (SN, PEOU, PU, PBC), in addition to three more factors which impacts the consumer intention and attitude especially on the Covid-19 period [15]. These factors are: (1) perceived lack of alternatives (PLOA) [16,17] and (2) perceived external pressure (PEP) impact on consumer intention toward accepting technology [18, 19], and (3) perceived risk (PR) [20-22] to have an impact on consumer attitude toward accepting technology. The impact of the Covid-19 on online shopping was noticed from the changes in the number of transactions measured globally [3].

Existing research provides undoubtedly extensive details about the factors that determine customers' intention and behavior, but still this work argues that there is a need for further research to show clear understanding about the following conjectures: Firstly, the impact of Covid-19 on

the consumer intention for online shopping was not measured, given the changes in requirements and the specific need for a better and more hygienic shopping experience. Secondly, The variables that has been used in this research has been examined in different previous researches and under different circumstances, according to a study conducted in South of Jordan, the online shopping PR, PEOU, and PU with attitude as a mediating variable has an indirect influence on consumer intention [9]. In fact, the level of influence of consumer attitude to transform the consumers' intention was not measured under the recent new circumstances of Covid-19 pandemic, and its related restrictions procedures. PLOA, PEP, and PR are assumed highly relevant factors that are directly related to Covid-19 pandemic but have not been measured to find the extent of influence on the consumer intention for online shopping during Covid-19 pandemic. Covid-19 has also affected the social life as a result of the complete lockdown procedures, the limitation on mobility, and the recommendations to reduce the physical contact between individuals. As previous studies indicated that PBC and SN have a direct impact on consumer's online shopping intention [23,24]. SN was also found to have an indirect impact on consumer intention with a significant influence on the attitude as a mediating factor. And hence, all the variables will need to be examined under Covid-19 situation to explore to what extent would the those variables collectively influence the consumer intention toward online shopping. Lastly, it is not yet evident that the demand for online purchasing will be sustainable, or it will diminish after the pandemic. To address those enquiries, a conceptual model has been constructed primarily drawn on TAM and TPB to investigate the influencing factors and to test a set of hypothesizes that will be discussed next section. Understanding consumers' behavior during Covid-19 could reveal insights for customers' intention toward online shopping after the pandemic by showing the factors that determine the customers' intention for online shopping. In turn, these factors can help the retailers to adopt the new norm of life after the Covid-19 pandemic and help businesses to allocate investments to transform their traditional business models and switch to online shopping platforms.

Understanding consumer intention change towards online shopping will clarify potential factors for the retailers to adopt the new norm of life after the Covid-19 pandemic and evaluate their investments in transforming their traditional business models to digitized business and switch to online shopping platforms. To do so, this research has collected data from more than 800 informants who responded to the research questionnaires. It can be argued that while this study has empirically tested its hypotheses using data collected from Jordanian's market, still there is a room for generalizing of the study's results outside Jordan particularly in the Middle-East and in developing countries that share some nation's characteristics. Furthermore, there

are some conditions that restricted people's behavior over the world towards shopping during Covid-19, as most of the countries have experienced some shopping restrictions, so people faced common conditions, which make the determined factors applied to shopping behaviors' outside Jordan.

1.1 Online Shopping

Internet changed our life in the last decades [25]. The development of internet and technological growth allowed people to use the Internet to find products, entertainment and communications[26], leading to the proliferation of e-commerce sites [27], expanding business accessibility to consumers, allowing them to explore freely for any product or service worldwide [28]. According to Rababah [26]: "Online shopping is the act of purchasing products or services over the Internet. It has grown in popularity over the years, mainly because people find it convenient and easy to bargain shop from the comfort of their home or office "[26]. Internet enabled firms to enhance their business, and offered people with unlimited access to reach products and services all around the world, so anyone can buy or sell using internet easily, at any time, from anywhere through the online shopping websites [29]. Also, it gives consumers the ability to get information about anything they want. The interaction in the shopping world is based on physical communication experience between the retailer and consumer, but now using the retailer's websites, consumers can interact electronically [29]. Online consumer's purchases decision is based on the product's electronically announced features rather than the traditional experience [30]. Social media websites provided the companies with a huge opportunity to engage and interact with the consumer, which assisted in encouraging and increasing the intimacy of the consumers, and also in building a strong relationship with them [28].

Since the governments started the restricted curfew procedures, the need for new technology platforms and enablers were needed to fulfill the demands of the new limited norm requirements [6]. Platforms for different purposes (Educational, e-commerce, logistics, etc...) have been established and used in a short notice to respond to the demands [31,32]. E-commerce platform enablers like e-wallets has taken a significant role in the online shopping as one of the main categories of mobile payments [33]. The total number of e-wallets in Jordan has almost doubled in period from January 2020 till September 2020 as per the Jordan Payments and Clearing Company (JOPACC), with an increase from 642,356 e-wallets in January to 1,192,429 e-wallets in September, which supported over 600% more transactions volumes within the same period [8,34]. Central Bank of Jordan Approved e-wallet platforms has increased and enabled new business models in Jordan market and was a great enabler to onboard new consumers -who did not have a good onboarding process before or refused the available onboarding processes- to the e-commerce world

[35]. The utilization of online shopping platforms by retailers has been developed to adopt the new e-wallets platforms to serve consumers under the pandemic restrictions [36]. With this great jump of the number of electronic transaction users on E-wallets, and almost doubling the number of e-wallet users in 9 months, a change in consumer adoption of the technology was noticed [8, 34].

1.2 The Novel Coronavirus Pandemic

Covid-19 appeared in China in December 2019 and it was detected in Wuhan, China [37]. Central of Disease Control (CDC) determined the cause to be a novel coronavirus and considered it as one of the most infectious diseases[38]. Unlike other pandemics that appeared in the past decades, Covid-19 has evolved to a pandemic health crisis due the fast widespread worldwide. The wide spread of the disease, and the unknown nature of the virus such as the ways of virus is spreading and pathogenesis required a global collaboration to control the disease and minimize the catastrophic effect on the world economy[38]. All of the infectious diseases that appeared in the last decades like Severe Acute Respiratory Syndrome (SARS), Novel Coronavirus (Covid-19), Acquired Immunodeficiency Syndrome (AIDS), and Hemagglutinin Type 1 and Neuraminidase Type 1(H1N1) had a catastrophic consequence on the economy of the countries [39]. To control this pandemic, restriction had been applied to minimize the spread of the virus. Due to the negative effects of these restrictions on the economy, an innovative solution must be adapted. However, the adaptation for these restriction was possible for some mega companies such as Amazon and Flipkart, at the same time was impossible for smaller businesses taking in consideration the nature of the provided service which was hugely affected by the supply and demand [40]. Stanciu, Radu [41] studied the effect of Covid-19 over the consumer demand for food and personal products in comparison of the same period in the year before and they found that the consumer demand has increased. People were so afraid of social interactions, and the precaution cost of disease was increasing affecting many industries [42]. It has evolved as Covid-19 has also caused a lot of confusion and uncertainty about the future of humanity.

1.3 Consumer Behavior Change Due to Covid-19

Covid-19 pandemic enforced the consumers to change their habits in many life aspects like travel, work, social relationships and shopping [43]. Government of Jordan instructed public and private sectors to apply restricted procedures to deal with Covid-19 pandemic, aiming to stop the spread of the virus and forced shops retailers to use alternative processes that contains less physical contact interaction to run their businesses, mainly to use digital means [5]. Hence, consumers have to adapt to the new

processes and procedures to fulfill their needs for shopping using online methods and platforms [5, 6].

During lockdown procedures, consumers discovered alternative way of how they can run their daily tasks which is more convenient and affordable encouraging them to keep the habit of doing things digitally [44]. The Lockdown procedures and trade export and import processes have affected the availability of the various products and goods [45]. This shortened the shops inventories, which led the consumer to look for more shops to purchase the needed products. Since the mobility restriction has been applied, the possibility to navigate more shops was limited. Hence, the consumer should depend mainly on online platform in order to fulfill the essential necessities during the lockdown [46]. As per Anastasiadou, Anestis [47], one of the important agents that contribute in the consumer behavior change is the lockdown preparation, which resulted in increasing online shopping and decreasing visits to traditional store.

1.4 Theory of Technology Acceptance Model and Theory of Perceived Behavior

Theory of Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB) are the most used theories to prognosticate the acceptance and the usefulness of IT technologies among the users. The TAM theory was built with depend on the Theory of Reasoned Action [48]. According to TAM theory, the perceived usefulness and perceived ease of use are two variables which relates directly to attitude towards using a technology [11]. TAM will explain the consanguinity between the users and the technology [49]. Since the consumer represents the technology user and the online shopping platform represents the technology, the TAM theory is considered to prognosticate the user intentions towards using the online shopping [50]. In addition, according to TPB, which is a theory used to anticipate a human certain behavior in a specific circumstances, it uses the Subjective Norms and Perceived Behavioral Control to measure the Behavioral Intention towards the usage [10]. Perceived Behavioral Control indicates the usability in performing a behavior that relay on the availability of sources and chances to perform such behavior [10]

2 Methodology and Material

2.1 Conceptual Model

TAM and TPB are used vastly previous researches to examine technology use [51, 52], but neither can explain ultimately the behavioral prediction [53]. Many researchers have stressed on combining both TAM and TPB when evaluating technology adoption. Results have shown that when using the TAM and TPB complementing each other, the outcomes are found to be much better explanatory

comparing to use the theories individually [54, 55]. In this project, TAM and TPB variables are considered to investigate the consumer intention toward online shopping during Covid-19 pandemic, as the prime focus of this research, with the addition of extra variables related the changes reflected in the society and the consequence pressure that appeared in Covid-19 pandemic.

The conceptual model of this research includes five TAM and TPB variables; (1) Perceived Usefulness (PU), (2) Perceived Ease of Use (PEOU), (3) Perceived Behavioral Control (PBC), (4) Subjective Norm (SN), and (5) Attitude as a mediating variable, and extra three variables (6) Perceived Lack of Alternatives (PLOA), (7) Perceived Risk (PR), and (8) Perceived External Pressure (PEP). Covid-19 pandemic created a state of fear and danger of contracting the virus. Avoiding danger posed by people [56,57] might create a psychological reaction to adopt a specific behavior. According to Deci and Ryan [58], the motivation factors coming from the willingness to take a path that provide benefits or move away from the path that contains danger significantly the adoption of the behavior.

Motivation, which urge people to adopt specific behavior, are either extrinsic or intrinsic. Extrinsic motivation is taking the path with the benefits, while Intrinsic motivation is taking the path that is interesting and enjoyable [59]. Therefore, the following variables might be considered as extrinsic; PLOA, PR, PEP. Some researchers have combined the extrinsic and intrinsic motivations into IT acceptance models [15]. This study has combined extra variables into both TAM and TPB theories to examine which variables that affect the consumer intention toward online shopping during COVID-19 pandemic. As per the literature review, combining TAM and TPB, a conceptual framework that explains the adoption of online shopping was created (see Figure 1). The model contains 3 independent variables, which directly affect consumer intention toward online shopping during the COVID-19 pandemic. Those variables are PLOA, PEP, and PBC. The conceptual model also has another 4 variables, PR, PU, PEOU, and SN that affect the mediating variable, which is the consumer attitude, which influence the consumer intention toward online shopping. This research enhance the results of previous researches that examined the adoption of online shopping based on TAM and TPB theories, but in different variables relationships and dependencies, and also different culture [9,15] **Figure 1** shows the research conceptual model diagram.

2.1.1 Perceived Lack of Alternatives

Perceived lack of alternatives (PLOA) defined as the consumer understanding for the level to which solid competing alternatives are available for choice [16]. According to several studies, the lack of viable alternatives may lead to a decrease in the possibility of eliminating the

existing setting [60,61]. The availability of alternatives might change the selection of the required process to accomplish a task to choose a new approach rather than the

findings that there is a major effect by the external pressures on technology adoption intention [66-68]. The governments worldwide had setup several restricted procedures to limit the spread of the Covid-19 virus. and

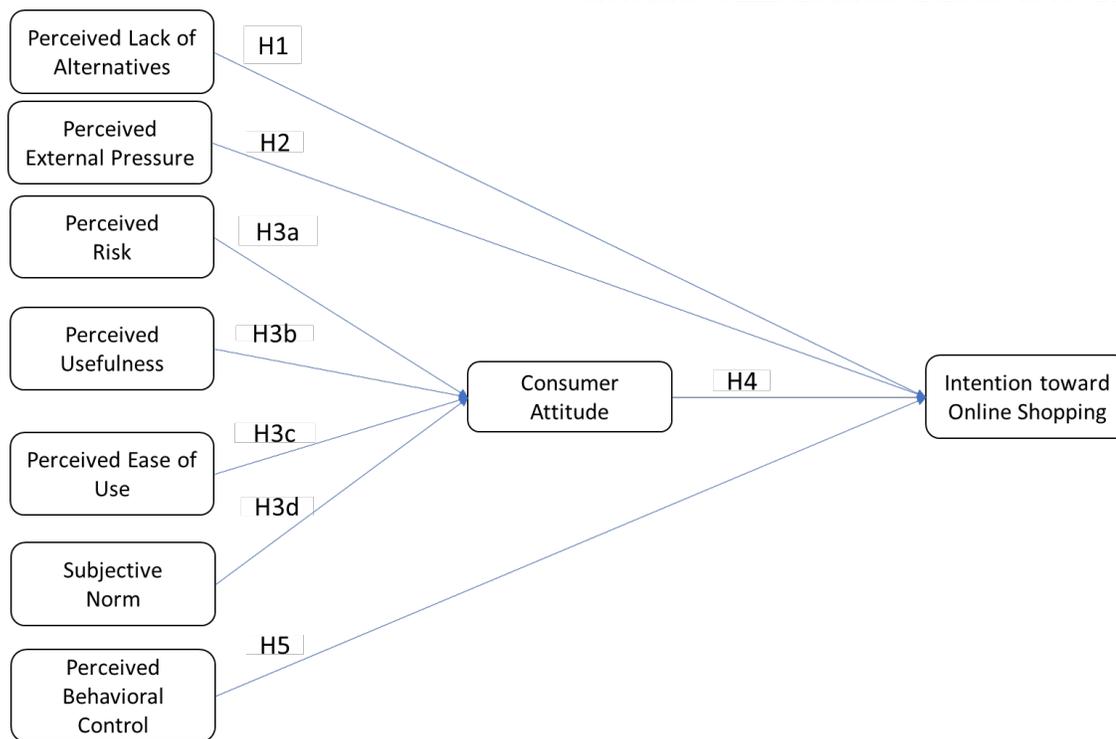


Fig. 1: Research Conceptual Model.

traditional one [62]. This study considers the perceived lack of alternatives of performing shopping to cover the daily needs, and mainly to compete with the viable alternative of online shopping. The setting for the study considering the COVID-19 pandemic, which poses many risks (health risks and legal fines for anyone breaks the curfews), and results in limited available options for shopping [4]. Consumers looking for an alternative of traditional shopping embrace online shopping as a viable option. Therefore, the perceived lack of alternatives will increase the level of intention toward online shopping. The following is hypothesized:

H1. Perceived lack of alternatives has a direct positive impact on consumer intention toward online shopping during COVID-19 pandemic.

2.1.2 Perceived External Pressure

Perceived External Pressure (PEP) defined as the level which stakeholder’s impact on the adoption of new technology [18]. In this research, the perceived external pressure considers the extent of the government and official mandates pressures enforced on individuals for adopting online shopping [63]. The external conditions and environment might be the cause of the adoption of technology [64, 65]. Several studies have supported the

applied different shapes of lockdown and curfews, imposing people to remain at home and consider alternatives to carry out daily activities, and as an example to consider online shopping instead of traditional shopping [6]. Therefore, this study hypothesizes the following:

H2. Perceived external pressure has a direct positive impact on consumer intention toward online shopping during Covid-19 pandemic.

2.1.3 Perceived Risk

Perceived Risk (PR) is defined as a possible loss when expecting a specific outcome [21, 22]. Many researches have investigated the impact of risk on conventional consumer decisions [69]. This study considers the perceived risk specifically in the health aspect to contract the Covid-19 virus when performing shopping physically during the pandemic. The theory of perceived risk was used to study consumer behavior. Despite that several studies defined perceived risks to be financial, social, security, or privacy risk, on the technology adoption [70, 71], in this research, risk on health (the risk of infection by the virus when performing traditional shopping during the pandemic period) is a considered perceived risk factor [15].

Individuals tend to choose the alternatives that have lower risks [72], and the perceived risks of considering online shopping could be lower compared to the traditional shopping during the Covid-19 pandemic aiming less physical contact and less possibility to contract the virus and can positively affect consumer attitude toward online shopping [9]. Therefore, consumers who perceive lower risk of considering online shopping embrace it as a method comparing to the traditional one. Hence, this study hypothesizes:

H3a. Perceived risk of using online shopping has a direct negative impact on consumer attitude toward online shopping during Covid-19 pandemic.

2.1.4 Perceived Ease of Use

Perceived Ease Of Use (PEOU) is one of the factors which affects how a specific technology is going to be accepted according to TAM [11]. Davis [11] stated that PEOU is "the degree to which a person believes that using a particular system would be free of effort". In this study, PEOU refers to the minimum levels of effort that customers will do to use digital technologies for online shopping. Gefen and Straub [73] indicates that the PEOU changes based on the objectives the customer is performing and it is more significant if customer is inquiring rather than purchasing online. Many studies revealed that PEOU has a significant impact on the user's attitude toward adopting a technology [9, 74, 75]. Flavian, Guinaliu, and Lu [76], support that PEOU have a significant impact on the customer attitude toward technology use of mobile payments which complement the online shopping experience. Users are expected to use online shopping if they have an effortless and easy experience [77]. In this study hypothesis:

H3b. Perceived ease of use has a direct positive influence affecting consumer attitude toward online shopping during Covid-19 pandemic.

2.1.5 Perceived Usefulness

According to Davis [11], Perceived Usefulness (PU) is stated as "the degree to which a person believes that using a particular system would enhance his or her job performance". It has been derived from the word "useful" Davis [11] defined as "capable of being used advantageously". PU is a very critical variable that helps in identifying the Information Technology (IT) adoption, as in a lot of IT cases, IT has been adopted because it is playing a primary role in fulfilling tasks which are not directly related to use the IT [78]. This factor has been studied and documented in previous studies related to blended learning for higher education students and they found out that electronic teaching is influencing electronic courses perceived usefulness positively [79]. As Covid-19

pandemic emerged quickly, the user's adoption for useful means to maintain self-safety has increased [6]. In this study, PU refers to the customers belief that using online shopping during Covid-19 pandemic will improve their safety performance. Therefore, this research hypothesizes:

H3c. Perceived usefulness has a direct positive influence affecting consumer attitude toward online shopping during Covid-19 pandemic.

2.1.6 Subjective Norm

Subjective Norm (SN) is defined as "the perceived social pressures to perform or not to perform the behavior" [10]. The intention to perform a specific action function in defining SN, or the perception that other people place importance in adhering to subjective norms [80]. Previous studies proved that the customers' family and friends influence their intention and behavior, and the researchers proved that talking about online shopping with relatives and friends is linked with the intention towards online shopping [81]. In this research, SN pointed to the concept of social pressure to use online shopping. In Arabian cultures, the people around the customers influence their actions, similar cultures are considered a collectivist culture [82]. According to several studies, subjective norm has a major impact on the consumer attitude toward online shopping [9, 83]. This study hypothesizes the following:

H3d. Subjective norm has a direct positive impact on consumer attitude toward online shopping intention during Covid-19 pandemic.

2.1.7 Consumer Attitude and Online Shopping Intention

Consumer Attitude is defined as "an individual's degree of evaluative affect towards the target behavior" [80]. Attitude towards using a technology is identified by users' understanding of usefulness and ease of use of the system, and that attitude towards using the system is an important identifier for behavior intention to use the technology [84]. Researches has revealed the importance of consumer attitude towards the consumer intention to use online shopping [85, 86]. As consumers with good attitude toward online shopping led them to reinforcing the idea of positiveness in using online shopping with an increase to their intention to use online shopping [9]. Koufaris [50] supported that the attitudes towards using the technology for online shopping affecting positively the intention to use this technology to perform the online shopping. Furthermore, PR, PU, POEU and SN are variables that has been addressed in many studies to investigate the affect the user attitude which in return affect the user intention for technology acceptance [9, 81, 84]. Ha [83] support the line that the consumer's attitude for online shopping has a major

positive impact on the online shopping consumer intention. Therefore, this study hypothesizes the following:

H4. Consumer attitude has a direct positive influence on the consumer intention toward online shopping during Covid-19 pandemic.

2.1.8 Perceived Behavioral Control

Perceived Behavioral Control (PBC) has been defined as “the perceived ease or difficulty of performing the behavior and it is assumed to reflect past experience as well as anticipated impediments and obstacles” [10]. In this study, the perceived behavioral control points to the evaluation of self-competence and ability to control in using online shopping. Many studies have stated that perceived behavioral control is affecting the behavioral intention [87]. When people have more domination on themselves, their intention will be stronger to accomplish certain behavior [88]. Once people feel easy to and they have relevant skills to use online shopping in their daily life, they will orient their intention to use online shopping better than others who doesn't have relevant knowledge and skills [89]. Previous studies have proved that planned behavioral control have a significant effect and strong relationship with online shopping [90]. Therefore, in this study we hypothesize that:

H5. Perceived behavioral control has a direct positive impact on consumer intention toward online shopping during Covid-19 pandemic.

2.2 Sampling and Procedure

To examine the hypothesis of this study, an online questionnaire has been constructed based on the constructs associated to each variable. The questionnaire contained 12 sections; the first section explains to the participant the study and the purpose of the questionnaire. The second section was built to collect the socio-demographics information of the participant like age, gender, level of education, personal income, and marital status with a clear message on the privacy of the data collected. In this section, we added a specific question to check if the participant is using online shopping to proceed with the questionnaire, otherwise the participant will be taken to the last section of the survey where we asked the participant to determine the reason for not trying online shopping. The 9 sections that follows the positive answer of the involvement of the participant in an online shopping experience are related to all the variables (dependent, independent, and mediating) determined in the conceptual model, and has been built depending on construct that has the factor and corresponding item.

The snowball sampling technique had been implemented and considered as its most convenient method to be used for this research. The snowball sampling covers many other

sampling mechanism challenges, requires less effort and planning, comparing to the rest of the sampling techniques [91]. Using this technique, starting with small group and reaching to unknown individual is easy, which will help minimizing the sampling bias [92].

The online questionnaire has been distributed using different social media channels and limited to target Jordanian population to define the research sampling boundaries. It has been shared first with the contacts of the researchers who also been asked to distribute to their contacts. The questionnaire was built on Google's Form® and has been open for participation for 10 days. A total of 817 valid participants has responded to the questionnaire, 169 answered with negation to using online shopping, and has been excluded. The 648 responses from the participants who confirmed that they are using online shopping was used in the analysis of the conceptual model. 55.4% of the considered participants were males, and 44.6% represents the female's participations. About 73.8% of the participants lived in the capital of Jordan – Amman. A variant personal income percentage has been measured. The median range of the age was 35-44 years old; the majority have a bachelor's degree with 69.1% of the sample, and majority were married with percentage of 63.6% of the sample. **Table 1** contains the summary of the socio-demographics.

2.3 Measure

The questionnaire has been translated from English to Arabic aiming to target the targeted population official language. Translation and back translation technique have been followed to ensure maximum level of equivalence in measuring the variables. A five-points Likert scale used in the survey, with 1 to indicate (Strongly Disagree) and 5 to indicate (Strongly Agree).

2.4 Constructs Summary

The constructs of the variables used in the conceptual model has been used according to build the questionnaire based on the item scale which was defined for that construct as per the below **Table 2**:

3 Experiment Results and Discussion

3.1 Validity and Reliability

Confirmatory factor analysis (CFA) has been verified using AMOS Software version 26 to identify the validity and reliability of the scales. As shown in **Table 3**, acceptable measures had been reached for model fitness as per the following results in Table 3; Chi-square = 915.779 ($p = 0.000$), IFI = 0.944, GFI = 0.902, CFI = 0.944, RMR = 0.046, and RMSEA = 0.058. **Table 4** represents the results for standard deviation the variables and the mean values for the research sample. For every construct, the Cronbach's

alpha coefficient recorded a value more than 0.7, except for 2 constructs, PEP $\alpha = 0.642$, and PR $\alpha = 0.317$ which still be considered valid as per Peterson meta-analysis[95]. For the Items factor loading, the results revealed the values of the items have values greater than 0.5 except for PR3 as shown in **Table 5**. When calculating the R^2 values for the latent

Table 1: Socio-Demographics of the participants.

Item	Category	Frequency	Percent
Age	15-24	83	12.8
	25-34	185	28.5
	35-44	236	36.4
	45-54	93	14.4
	55-64	39	6
	65 and above	12	1.9
Marital Status	Single	209	32.3
	Married	412	63.6
	Divorced	23	3.5
	Widowed	4	0.6
Gender	Male	359	55.4
	Female	289	44.6
Education	Elementary School	1	0.2
	High School	32	4.9
	Bachelor	448	69.1
	Master	133	20.5
	Doctorate	29	4.5
	Other Education	5	0.8
Personal Income	0-250 JOD	104	16
	251-500 JOD	121	18.7
	501-750 JOD	83	12.8
	751-1000 JOD	106	16.4
	1001-1500 JOD	70	10.8
	1501-2000 JOD	51	7.9
	2001-3000 JOD	54	8.3
	3001 and above	59	9.1
Governorate	Amman	478	73.8
	Irbid	43	6.6
	Zarqaa	24	3.7
	Mafraq	37	5.7
	Balqaa	24	3.7
	Karak	9	1.4
	Tafeeleh	4	0.6
	Madaba	9	1.4
	Maan	3	0.5
	Ajloun	3	0.5
	Jerash	2	0.3
	Aqaba	12	1.9

Table 2: Construct Scaled Items and References.

Construct	References	Number of Scaled Items
Perceived Lack of Alternatives	[17]	3
Perceived Risk	[20]	3
Perceived External Pressure	[19]	3
Perceived Usefulness	[93]	3
Perceived Ease of Use	[81, 94]	3
Perceived Behavioral Control	[94]	3
Subjective Norm	[94]	3
Consumer Attitude	[93]	3
Consumer Intention	[93]	3

Table 1: Model Fit - Baseline Comparisons.

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI	RMSEA	RMR
Default model	.921	.904	.944	.932	.944	.058	.046

Table 2 : Standard Deviation and Mean Values for the Variables.

Variable	N	Mean		SD Statistic
	Statistic	Statistic	SE	
Perceived External Pressure	648	3.540123	0.029567	0.752648436
Perceived Lack of Alternatives	648	3.455761	0.035363	0.900186637
Perceived Risk	648	3.81893	0.022784	0.57999007
Perceived Usefulness	648	3.930041	0.029642	0.754567839
Perceived Ease of Use	648	3.95216	0.026147	0.66559068
Subjective Norm	648	3.562757	0.033168	0.844315158
Perceived Control Behavior	648	3.854424	0.026826	0.682879351
Attitude	648	3.967078	0.029111	0.741044073
Intention	648	3.718621	0.033668	0.857056226
Valid N (listwise)	648			

Table 3 : Factor Loading and Cronbach’s Alpha.

Variable	Items	FL	α
PEP	PEP1	0.529	0.642
	PEP2	0.607	
	PEP3	0.564	
PLOA	PLOA1	0.684	0.842
	PLOA2	0.770	
	PLOA3	0.742	
PR	PR1	0.731	0.317
	PR2	0.757	
	PR3	0.346	

PU	PU1	0.717	0.856
	PU2	0.749	
	PU3	0.661	
PEOU	PEOU1	0.593	0.797
	PEOU2	0.736	
	PEOU3	0.739	
SN	SN1	0.838	0.94
	SN2	0.886	
	SN3	0.890	
PCB	PCB1	0.612	0.771
	PCB2	0.565	
	PCB3	0.583	
Attitude	UA1	0.603	0.851
	UA2	0.661	
	UA3	0.668	
Intention	UI1	0.715	0.893
	UI2	0.777	
	UI3	0.774	

variables, the attitude and intention recorded 0.464 and 0.475 respectively. The R^2 values are considered acceptable according to Falk and Miller [96], who suggested that R^2 needs to be 0.10 or above to be acceptable.

3.2 Results

From the analysis of the results, the covariance measures showed a significantly positive between all the independent variables as presented in **Table 6** where ($\beta < 0.403$, $p < 0.001$). The variables correlation calculations showed significant 2-tailed results between all the model's variables. **Table 7** presents the result of the Pearson correlation calculation done using SPSS version 26. Results of the structural model analysis revealed that PLOA has no significant impact on consumer Intention toward online shopping which lead to rejection of hypothesis H1 with ($\beta = 0.027$, $p = 0.458$). In the result also, we found that PEP has also no significant positive impact on consumer intention toward online shopping with ($\beta = -0.012$, $p = 0.725$), thus H2 is also rejected. As H3a hypothesized that PR has a significant negative impact on consumer intention toward online shopping, the results showed that this hypothesis is valid with ($\beta = -0.108$, $p = 0.002$). The results revealed that PU does also have a significant effect ($\beta = 0.418$, $p < 0.001$) on attitude towards online shopping. Thus, H3b is supported. Moreover, the results support that PEOU has also a positive and significant impact on attitude towards online shopping ($\beta = 0.281$, $p < 0.001$), so hypothesis H3c also has been supported by the statistical results. The results also supported the hypothesis H3d with ($\beta = 0.184$, $p <$

0.001) and showed that there is significant positive relation between SN and Consumer attitude toward online shopping. With the PR, PU, PEOU and SN hypothesized been supported, the relation between Attitude and Intention were found to have a significant positive impact with ($\beta = 0.522$, $p < 0.001$), and hence hypothesis H4 has been supported. And lastly, the PCB the results validated the hypothesis H5 with ($\beta = 0.245$, $p = 0.001$), and supports that PCB has a significant positive impact on consumer intention toward online shopping. **Table 8** shows the regression weights results statistics output using AMOS 26. The results of the survey for specific items that measure the intention toward online shopping during and after Covid-19 pandemic using a 5-likert scale, the mean of the responses where 11.16 (min=3, max=15, S.D = 2.57).

3.3 Discussion

3.3.1 Theoretical Implication

This study contributes to the literature in multiple views. The conceptual model in this study is multilateral since each construct taken from a very famous and known technology adoption and acceptance models and theories, which are TAM, TPB theories. Moreover, it employs other extra variables that considered important for technology adoption such as PLOA, PR & PEP. The research analysis contributes importantly to the existing knowledge by adding additional ideas to understand the adoption factors for online shopping intention, by combining behavioral, external and technological variables. Firstly, many

Table 4 : Covariances: (Group number 1 - Default model).

Items Covariances			Estimate	SE	CR	P
PEP	↔	PLOA	.347	.030	11.599	***
PEP	↔	PR	.140	.018	7.761	***
PEP	↔	PU	.243	.024	10.002	***
PEP	↔	PEOU	.154	.021	7.481	***
PEP	↔	SN	.287	.027	10.481	***
PEP	↔	PCB	.209	.022	9.606	***
PLOA	↔	PR	.196	.022	8.967	***
PLOA	↔	PU	.346	.030	11.551	***
PLOA	↔	PEOU	.209	.025	8.372	***
PLOA	↔	SN	.403	.034	11.942	***
PLOA	↔	PCB	.300	.027	11.161	***
PU	↔	PR	.250	.020	12.613	***
PEOU	↔	PR	.084	.016	5.444	***
SN	↔	PR	.159	.020	7.866	***
PCB	↔	PR	.128	.016	7.831	***
PU	↔	SN	.354	.029	12.379	***
PU	↔	PCB	.322	.024	13.483	***
PEOU	↔	SN	.279	.025	11.319	***
PEOU	↔	PCB	.293	.021	13.806	***
SN	↔	PCB	.336	.026	12.818	***
PU	↔	PEOU	.227	.022	10.481	***

Table 5 : Correlations: (Group number 1 - Default model).

	PEP	PLOA	PR	PU	PEOU	SN	PCB	Attitude
PEP								
PLOA	.512**							
PR	.320**	.377**						
PU	.428**	.510**	.571**					
PEOU	.308**	.349**	.219**	.452**				
SN	.452**	.532**	.325**	.557**	.497**			
PCB	.408**	.488**	.324**	.625**	.646**	.583**		
Attitude	.329**	.358**	.252**	.586**	.538**	.521**	.666*	
Intention	.268**	.321**	.198**	.483**	.454**	.450**	.590*	.678**
n							*	

** . Correlation is significant at the 0.01 level (2-tailed).

Table 6 : Regression Weights: (Group number 1 - Default model).

Items Regression weights			β	Estimates	SE	CR	P
Intention	←	PLOA	.027	0.025	0.033	0.743	0.458
Intention	←	PEP	-.012	-0.013	0.038	-0.351	0.725
Attitude	←	PR	-.108	-0.138	0.045	-3.069	0.002
Attitude	←	PU	.418	0.411	0.04	10.168	***
Attitude	←	PEOU	.281	0.313	0.038	8.201	***
Attitude	←	SN	.184	0.161	0.032	4.997	***
Intention	←	PCB	.245	0.301	0.045	6.738	***
Intention	←	Attitude	.522	0.593	0.038	15.485	***

researchers has employed TAM theory effect on intention with three variables (PU, PEOU and attitude) to describe and clarifies the consumer intention [84, 97, 98]. In addition to the PU and PEOU mediated by the attitude, the PR and SN effect has been examined, since it has a major effect on individual's attitude during pandemic and lockdowns especially when their life is in risk.

The results and the model suggested in this study answered the call for examining the implication of the social effect under critical situations and clear risks, which showed a significant effect on the attitude. The model from Aldhmour and Sarayrah [9] examined the effect of SN on intention and PR on attitude, and found that there is no significant effect between the variables. Although both studies has targeted the same culture, but the research results have shown opposite findings when performing the suggested model, given the change in the conditions of the study due to Covid-19 pandemic, which indicate a change in the consumer attitude and intention toward online shopping during the pandemic affected by SN and PR. Other studies also supported the effect of the SN on consumer attitude which is consistent with our results that showed a positive significant impact of SN on consumer attitude [81]. Secondly, we have studied the direct effect of the PCB according to TPB theory on the consumer intention towards online shopping and the findings supported that the PCB directly affect the consumer intention positively. Thirdly, this research found that the effect of the other extra variables that measures the effect of the PLOA, and PEP has no significant impact on Jordanian consumer intention towards online shopping. Which indicates that according to the research model, the impact of social effect and the risks have more impact on changing the consumer attitude and intention toward online shopping than the lack of alternatives and the external pressure will do.

3.3.2 Practical Implication

On the practical side, this study shows how the expanded technology that supports the online shopping provided the consumer the ability to serve his needs and purchases easily during the Covid-19 pandemic. A lot of money and efforts has been invested in building online shopping websites and platforms to be used in Jordan during Covid-19 pandemic. Understanding the consumer behavior during and after the pandemic will help the retailers to determine if they should build e-commerce systems which will encourage customers sustainably use the technology. As mentioned previously that perceived lack of alternatives and perceived external pressure have no significant impact on the intention towards online shopping which tells us that not having another option and the pressure by the government to adopt the online shopping is not main driver to shop online, so the retailers cannot rely on those factors to start an online business. The spike that was noticed in the e-Wallets in Jordan seems to be used for other financial activities rather than online shopping [7]. The rest of factors (PR, PU, PEOU, SN, and PBC) have a significant impact on the attitude which also implies that the attitude has a positive impact on the intention. Perceived risk significant negative impact on consumer attitude insights the retailers that they should focus on promoting more about the safety and benefits of online shopping which reduces the possibility of infection and how much it enhances their health protection. Based on the above result people found that online shopping is more useful from health performance perspective as it reduces the contact between the seller and the buyer. For the perceived ease of use, the current sellers who are using traditional selling ways and trying to go digital, they must promote for this by doing campaigns that shows how easy it is to do a transaction using their phones or computers, because the more the online shopping portal is easier, the more consumer intention get positive and enhanced. Subjective Norm have a positive impact toward the attitude which should give the sellers an insight to focus

on the social effect on the consumer , and try to increase the awareness and benefits among consumers aiming to spread the recommendations from socials for utilizing online shopping. Perceived behavioral control refers to how much the customers control the online shopping process, so it is very important to make an awareness video that shows how to make and order and how to pay, and that the privacy of the information we collect is highly protected. In the survey responses, the indication that the consumers are leaning toward using online shopping for the future and even after the pandemic ends. This highlights a great importance to the commercial users to invest more in the technology and means for online shopping as the intention direction of the results points toward a sustainable change in the behavior.

3.3.3 Limitations

With the significance of this study, and the main results found during the analysis, the research had its boundaries that allows the future research to consider understanding the consumer behavior toward online shopping. The research has taken in consideration the Jordanian culture to sample the population, hence the results reflect the consumer intention in Jordan toward online shopping. It is recommended that future studies replicate the research procedures in different contexts. In the research data collection, it is found out that another factor that might also affect the adoption of online shopping which is the trust. In the questionnaire that was distributed for this study, 168 respondent declared that they do not use online shopping regardless of the situation of Covid-19 pandemic , and 52% of them voted for the lack of trust in online shopping , and 20% voted for the fact that previous unfortunate past experiences of online shopping. The trust factor might be considered in future researches as it might complement the model on the consumer attitude toward online shopping. This research used a cross-sectional design. It considered TAM and TBP with additional external variables of PR, PLOA, and PEP to study the technology adoption in the time of Covid-19 pandemic, but once the outbreak of the pandemic is concluded, and the consumer behavior is expected to change. Its highly recommended that future research conduct a longitudinal study on the adoption and enhance the model based on the future setting.

3.3.4 Conclusion

Covid-19 pandemic created a global change and affected many life aspects that caused people to consider enhancing the awareness level for health and safety. Technology played a significant rule in facilitating the means to accomplish work, shopping, safety during the pandemic. This research examined the consumer intention toward online shopping in the time of Covid-19 pandemic. The research model was drawn based on TAM and TBP , examining (1) Perceived Usefulness (2) Perceived Ease of Use, (3) Subjective Norm, (4) Perceived Behavioral Control, with addition factors that are related to the research setting; (5) Perceived External Pressure, (6) Perceived Lack of Alternatives , and (7) Perceived Risk

which we aimed to reflect some aspects of the Covid-19 pandemic and consequences. We found that PR, PEOU, PU, and SN has a direct significant effect on consumer attitude toward online shopping, also an indirect effect on consumer intention toward online shopping. We also found that regardless of the restriction and the pressure applied during the Covid-19 pandemic, the PEP and PLOA has no direct effect on the consumer intention toward online shopping. It also found that PCB has a direct effect on the consumer intention toward online shopping. This study shows factors affecting consumer intention toward online shopping, and insights on how to enhance the adoption of the technology. The change in the consumer intention toward online shopping that happened during the effect of the covid-19 pandemic is found to be sustainable and hence, more attention is preferred to be taken in this direction and investments might be successful.

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