

# Examining mobile medical supplies in supply chain: Exploring the impact of intention to use mobile medical apps

Ibrahim Ezmigna<sup>1</sup>, Siti Zaleha Omain<sup>2,3</sup>, Mahmoud Alghizzawi<sup>4,\*</sup>

<sup>1</sup> Azman Hashim International Business School, University Technology Malaysia, Johor 81310, Malaysia

<sup>2</sup> Faculty of Management, Universiti Teknologi Malaysia Malaysia, Johor 81310, Malaysia

<sup>3</sup> College of Business Administration, University of Business and technology, Jeddah 21448, Saudi Arabia

<sup>4</sup> Marketing Department, Faculty of Business, Applied Science Private University, Amman 1193, Jordan

\* **Corresponding author:** Mahmoud Alghizzawi, [m\\_alghzawi@asu.edu.jo](mailto:m_alghzawi@asu.edu.jo)

## CITATION

Ezmigna I, Omain SZ, Alghizzawi M. (2024). Examining mobile medical supplies in supply chain: Exploring the impact of intention to use mobile medical apps. *Journal of Infrastructure, Policy and Development*. 8(13): 5621.  
<https://doi.org/10.24294/jipd5621>

## ARTICLE INFO

Received: 5 April 2024

Accepted: 21 May 2024

Available online: 11 November 2024

## COPYRIGHT



Copyright © 2024 by author(s).

*Journal of Infrastructure, Policy and Development* is published by EnPress Publisher, LLC. This work is licensed under the Creative Commons Attribution (CC BY) license.

<https://creativecommons.org/licenses/by/4.0/>

**Abstract:** All sectors have an increasing interest in smart phone applications based on their many advantages that support business, especially the medical sector, which is constantly competing to develop the medical services provided, and accordingly in this research study we industrialized a mobile medical supplies and equipment ordering application (mobile medical app) classic and make an effort to authenticate it factually. When clients (hospitals doctors) create consumptions on the application, three dimensions can be identified: platform emotion stage, fear effect, and familiarity with product. This research designed to reinforce and brighten the most important magnitudes that improve a physician's judgment of mobile medical app and the purpose to usage. Furthermore, this study inspected the availability of the model between hospital physicians in UAE. The classic ideal was observed by means of a model of 340 UAE clinic physicians and their personal assistant who utilize mobiles facilities in overall. The review technique, a calculable method, was applied; the fractional smallest cubes organizational calculation exhibiting systems was owned to inspect the planned agenda. The platform emotion dimension, especially fear and resistance to change, and the familiarity with the products were evaluated, and it was discovered that these factors positively influenced the objective to use the application. And the other side, the first dimension of emotion, fear, manifested as "apparent threat", had no outcome on the purpose to using. These discoveries recommended that scholars should emphasis more on the facilities, merchandises, and the key task of the mobile medical app to control their inspirations on clients' ordering purpose. This will progress the purchasing ways associated to acquiring medicinal materials utilizing mobile medical app and/or on other operational stages in unambiguously in UAE and the Central East at great.

**Keywords:** supply chain; logistics; mobile medicinal; expertise purpose

## 1. Introduction

Associated to modern market, there is rising attention in mobile market facilities, also identified as m-commerce (Daoud et al., 2023). M-commerce has required fresh methodologies to publicity It grants every state, commercial, and individual major commerce prospects from a worldwide standpoint (Esmaeili et al., 2023; Sharma and Mandloi, 2018). Moreover, m-commerce Promoting the happenings of minor and average initiatives (MAIs), which have also accepted m-commerce, alike to large initiatives, to grow their tasks; m-commerce simplifies a solid connection with b/w sellers and end users (Balsalobre-Lorente et al., 2024; Wirtz and Wirtz, 2021). M-commerce is too playing a fresh character in the commercial sphere, influencing both dealer's businesses (Susanto et al., 2023). Helps several commercial actions, such as

buying, games, promotion and betting. Variables linked to the simplifying circumstances, such as philosophy and/or communications substructure, are also biased by shifting purpose to usage m-commerce all over republics (Phong et al., 2018). Accordingly, in UAE, there is a great development in information technology, and this is evident through the fact that a large percentage of Emirati families use smart phones, especially after the Corona pandemic (Elrefaey et al., 2022). These displays can't show enough about how people feel about m-commerce. Therefore, it is essential to comprehend the separate and ecological factors that control the level of purpose to use in order to develop appropriate marketing strategies based on varying attitudes.

That are presumed that's all organizations, with trades in UAE, even minor or huge, and the administration, take all the conceivable technical properties to efficiently simplify m-commerce (Ajmera and Bhatt, 2021; Alwan et al., 2023). UAE has a solid communication organization that allows industries to attach to m-commerce facilities and assume it for their events additionally, it can be practical that the quantity of facilities utilize mobile phone operators in UAE by m-commerce is rising gradually (Faccia et al., 2023). Though, m-commerce will be valueless minuses mobile phone gadget that can contract with numerical information related with ordinal infrastructures (Liu et al., 2023). Empirical research has shown that a quantity of issues, including the supposed risk, compatibility, practicality, and comfort of usage, influence people's intentions to use m-commerce services (Mehta et al., 2021). In this review, a portable clinical supplies and gear requesting application (mobile medical app) and the facility specialist's goal to utilize it was examined. Concentrating on the mentality of center specialists toward this help will allow advertisers understanding into the apparent related difficulties, as well as the aim to utilize and consumer loyalty (Wendland et al., 2019). This research goals to fill a void regarding the usage of the mobile medical app and the issues that influence clinic doctors' purposes to use it.

## **2. Mobile commerce**

For many persons, m-trade is a reasonable and brief idea. It is considered by some researchers to be an allowance and dissimilarity of e-commerce (Alkailani and Nusairat, 2022; Almajali et al., 2021). However, other researchers suggest that the idea of m-commerce has departed from the previous idea of e-commerce. Due to the significant differences between its value chain and business models and those of e-commerce, the term "m-commerce" may be somewhat misleading (Safieddine, 2017). Similar, according to other investigators, m-commerce requires various communications with operators (Alqahtani, 2023). Dissemination, adaptability, personalization, and widespread adoption are the primary observable characteristics of m-commerce (Khrais and Shidwan, 2020). Provisionals can reach their customers at any time and from any location thanks to m-commerce, which is widespread (Abu-ALSondos et al., 2023).

### **2.1. Features of the mobile medical application**

Medical phone applications provide many advantages that support the medical sector, represented by the staff working in the sector and patients, which enhances the medical services provided, including saving customer data and forming medical cards

(Kauw et al., 2019). In addition, medical applications facilitate the process of coordinating medical appointments so that they can be done easily and at any time without the need to go or call to confirm medical appointments (Haleem et al., 2021). The process of coordinating patient data is one of the main challenges that hospitals face due to the large volume of patient data, and through medical applications it can be easily coordinated, analyzed and arranged according to requirements (Al-Jaroodi et al., 2020). Relying on medical applications enhances the completion of all medical procedures, including identifying the patient's medical insurance and even completing any required financial payments, and most importantly, returning to the medical data about each patient with all speed and ease by the doctors (Kumar et al., 2023). Therefore, patients can easily review the medical network and doctors and know their opinions and responses, finally it is clear that smart medical applications provide a different experience for patients in a smooth and safe manner, which enhances the medical services provided and raises the level of health care completely (Ajayi et al., 2019).

## **2.2. Intention to use m-commerce**

Preceding research has demonstrated that m-commerce provides unique advantages over traditional e-commerce, such as new service offerings, statement channels, marketplaces, new gadget growth, and revenue streams (Lucas et al., 2023). Compared to e-commerce, m-commerce is user-welcoming and has some advantages due to the use of hardware and apparent commercial purposes (Mollick et al., 2023). Mobile devices, for instance, are simpler to use than PCs; Additionally, mobile devices outperform PCs in terms of cost and ubiquity, and their learning curve is longer than that of other technologies (Kaatz, 2020). Businesses have increased their investments in enhancing their participation in m-commerce as an outcome of the mobile technology's invention and diversity (Faccia et al., 2023). People today have a strong desire to use mobile phone gadgets, and there are deviations have a positive effect on how those devices are used. As a result, the significance of the purpose to use a mobile trick as it has an impact not only on consumers but also on businesses buying intention is an important idea in advertising (Mauji and Abu-Shanab, 2023). The framework of m-commerce, it is the phase to which a client has the intention to buy online (Lee and Kotler, 2019). Rendering to Self-performances, arrogances, and changeable issues impression buying purpose. It is protected by cost and commercial brand acknowledgment and better client knowledge and information of a product.

## **3. Research model and hypothesis development**

The three dimensions—emotions, fear effect, and product familiarity—were looked at in this practical analytical study to see how they affected people's intentions to using the mobile medical app. **Figure 1** depicts the study classical, which was established from previous studies.

The study's hypotheses and pertinent background information on increasing intention to use m-commerce services are presented. The purpose to using m-commerce was influenced by five independent variables. As a result, ten studies were found that highlighted the most important factors that can influence consumers' or

clinic doctors' intentions to use m-commerce services.

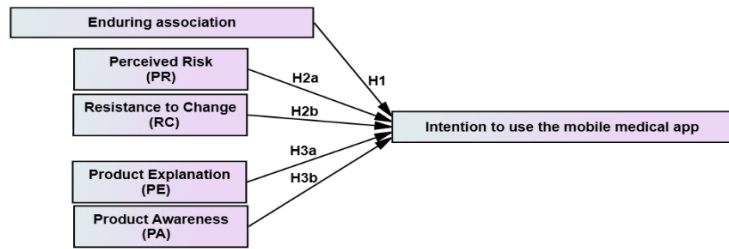


Figure 1. Research model.

### 3.1. Enduring association

Customers take longer to calculate the data on websites. Furthermore, taking actions and making decisions requires more time and effort. Customers want to be extra energetic on a platform in order to get more information, especially if they are heavily involved in the purchase process (Sakas et al., 2023). As a result, more products are purchased on a website when customers are more involved (Xu et al., 2017). The purpose to use appears to be absolutely prejudiced by persistent involvement because when consumers have admittance to comprehensive invention information, they will be more prospective to make wise purchases (Shakeel et al., 2024). The platform's purchase experience steadily boosts long-term involvement and purchase intent. Customers will experience fewer ambiguities when the supplier is more involved. Additionally, this will lessen the costs and risks associated with the purchasing procedure. As a result, customers will consume additional period on the stage, which will ultimately rise their intent to use it. The following hypothesis was developed on the basis of the preceding explanation:

- Hypothesis (H1): Enduring association is certainly connected to the intention to use the mobile medical app.

### 3.2. Perceived risk

For e-customers, the apparent hazard is a main obstacle to online expense; As a result, the popularity of online merchants and industries take into account and address matters linked to online recompense through safety, technologies, and dealings like awareness campaigns (Sharma, 2023). It is not difficult to comprehend how perceived risk can affect electronic mobile medical app because a system disaster is linked with data loss. Additionally, customers are less possible to made online consumptions when they perceive the risk to be high (Cohen and Erev, 2024). the use of a customer's isolated information, such as common broadcasting, to achieve facilities and the use of a customer's economic information for mobile payments raise the perceived risk (Sinha et al., 2024). The purpose to use various m-commerce services can be negatively affected by a high level of supposed risk (Nawi et al., 2024). E-customers' perceptions of risks might make them feel happy or unpleasant, and this can be seen in their intentions, attitudes, and beliefs. Therefore, research into how perceived risk affects m-commerce is currently ongoing. Perceived hazards have been shown in numerous studies to have a negative impact on consumers' online shopping behavior (Techinakarawin and Sun, 2023). A high perceived risk level may have a detrimental

impact on a user's propensity to use various m-commerce services (Zhu et al., 2022). After reviewing all relevant literature, it was determined that a high level of perceived risk has a negative impression on the intention to using m-commerce services for the purposes of this study. Subsequently, the accompanying speculation was made:

- Hypothesis (H2a): Perceived Risk is harmfully connected to the purpose of using mobile medical app.

### **3.3. Resistance to change**

There are various levels of resistance behavior; Failure to use, dysfunctions, or malicious use are all possible manifestations of resistance. According to a useful point of view, purchaser obstruction can encourage an expansive variety of standards of conduct. The multilevel resistance theory, which classifies four stages of struggle (Dudouet, 2013) is the most widely used theory on resistance. Indifference, resistance that is negative, resistance that is active, and energetic struggles. There are four stages of resistance can take the form of inaction, rejection, expressing disappointment, on information systems, struggle at any of these stages is nonacceptable (Alohali et al., 2020). As a result, it is essential to acknowledge the existence of struggle to variation. Since the MOBILE medical app is completely elective, it may be difficult to distinguish between unconcern and struggle in medical facilities. Inaction can result from a privation of consciousness of the existence of mobile medical app facilities. Accordingly, whether or not struggle to transformation exists. In accord to Hew et al. (2024) one of the main obstacles to the operation of huge-scale evidence structures is consumer resistance. Despite the fact that studying such inhibiting factors is essential, the idea of resistance to change has received little attention. As a result, the subsequent suggestion was put forth:

- Hypothesis (H2b): Resistance to Change is harmfully connected to the purpose of using mobile medical app.

### **3.4. Product explanation**

Taking into consideration the uncertainty reduction theory, which asserts that extensive or prolonged communication with customers reduces their uncertainty and even boosts their intent to purchase (Lu and Chen, 2021). The customer's understanding of a product and their intention to purchase can be significantly influenced by the availability of high-quality product information. It is essential for customers to achieve five-star device information (Mappesona et al., 2020; Mastana, 2023). High-quality product information made available on a variety of internet community platforms allows clients to calculate the device's features and reduces indistinctness. This, in chance, increases the perception of faith in both the goods and the supplier, intending to utilize e-services Customers' perceptions of dealers as answerable, to a certain level, reliable, and responsible are enhanced by an adequate supply of high-quality information, which significantly boosts the intention to use (Abbas et al., 2023). As a direct result, the following suggestion was put forth:

- Hypothesis (H3a): Product explanation is certainly related to the meaning of by means of mobile medical app.

### 3.5. Product awareness

The purpose to usage new automation has been revealed to be significantly influenced by awareness by numerous researchers. “the asset of one’s purpose to do a specified behavior” is the definition of the purpose to use (Flavián et al., 2022). According to Baghi et al. (2016). The intention to use may also be significantly impacted by extensive product and service knowledge. Using a variety of marketing strategies, including advertising and sales promotions, marketers strive to raise brand awareness (Makrides et al., 2020; Meikle, 2016). Brand knowledge is directly correlated with brand loyalty, which ultimately increases purchasing preference and intent (Foroudi et al., 2018). Certainly, adopting m-commerce application is alike to increasing product consciousness among customers. The subsequent hypothesis was developed on the foundation of the preceding:

- Hypothesis (H3b): Product awareness is definitely connected to the meaning of via mobile medical App.

## 4. Research methodology

### 4.1. Sample and measures

Objects established as a result of earlier study were modified and reviewed in this study. The five items of the emotion dimension, enduring involvement, were used as the basis for the survey of the Mobile medical app use. Seven items covered the two aspects of the fright effect apparent risk and struggle to revolution. Six items protected gadget awareness and product description, two aspects of product understanding. Lastly, three items addressed the purpose to use (mobile medical app). The Likert scale had five points; from “powerfully distress” to “powerfully decide”, the responses varied. **Table 1** contains a list of the items’ specifics.

**Table 1.** Questionnaire items.

Concepts	Variable	Item
Stage emotion stage	Enduring association	The m-medical supplies and apparatus ordering app should be comfortable to use.
		High focus is placed on user comfort when using the m-medical supplies and equipment ordering app.
		It’s important to feel comfortable using the app to order m-medical supplies and equipment.
		The m-medical supplies and apparatus ordering app must be comfortable to use.
		The m-medical supplies and apparatus ordering app must be comfortable to use.
Fear effect	Perceived risk	I am concerned whenever I utilize the m-medical supplies equipment ordering app that my credit card information will be taken.
		I’m worried about how well the online medical equipment and supply ordering apps work.
		I am concerned about online transaction security when using the m-medical supplies and equipment ordering app.
		When I utilize the m-medical supplies equipment ordering app, I worry about how my personal information might be used if I make an online purchase.
Resistance to change	Resistance to change	I wouldn’t change my decision to order by using the m-medical supplies and apparatus ordering app instead of going with conventional pharmaceutical companies.
		I wouldn’t cheerfully go from using the m-medical supplies and equipment ordering app to placing my orders through conventional pharmaceutical businesses.
		I wouldn’t stop utilizing the traditional pharmaceutical companies and start obtaining medical supplies and equipment through an app.

**Table 1.** (Continued).

Concepts	Variable	Item
Familiarity with product	Product explanation	The descriptions in the m-medical supplies equipment ordering app were straightforward.
		I could understand the explanations given on the items in the m-medical supplies equipment ordering app.
		The metaphors used in the m-medical supplies equipment ordering app were challenging to understand.
	Product awareness	The products on the m-medical supplies and equipment ordering app are those I am aware of.
		The things on the m-medical equipment and supply ordering app come to mind.
		The products on the m-medical supplies and equipment ordering app are things I am familiar with.
Intention to use mobile medical app	-	On the m-medical supplies and equipment ordering app, I intend to make a purchase.
	-	On the m-medical supplies and equipment ordering app, I would make purchases.
	-	I suggest making purchases through the ordering app for m-medical goods and equipment.

The empirical review that was used in the learning was administered to hospital surgeons who were aware with mobile medical app between 20 December 2019, and 10 March 2020. A convenient sampling strategy was used for the survey’s administration; Clinics from various regions of the United Arab Emirates were chosen. The goal of the scholar was to include all of the areas (north, center, and south). The surveys were retrieved and dispersed to the intended defendants. Three hundred and ninety-three questionnaires out of 400 were returned; 3 of the defendants said that they did not exploit the mobile medical app, and 57 were incomplete. As a result, 340 questionnaires were looked at.

#### **4.2. Data analysis**

The fractional smallest quadrangles physical equality exhibiting method was control to investigate the research classical (PLS-SEM). There were a number of reasons why the fractional minimum cubes reversion was chosen. Form on the imagined kind of associations between the self-determining and needy adjustable, the research model is somewhat complicated. The measure mentality of the primary and secondary higher-command concepts was also investigated. In the subsequent investigation of predictive relevance, the current study made use of the variables’ latent scores, particularly to implement the two-stage method for forming multi-dimensional variables. At the conclusion of this study, it was believed that the major reliant on rational variables for character example (mobile medical app) had been determined. This indicates that a reflective design framework and composite measurement model were utilized in the study. The correlations between the independent and dependent variables were also taken into consideration. Consequently, the conventional PLS served this study’s setting best (Hair Jr et al., 2016) The Smart PLS 3.2.8 software was used in this study (Dijkstra and Henseler, 2015).

### **5. Results**

#### **5.1. Participants and demographic information**

The current survey had 400 questionnaires, and 85.43 percent of respondents responded; As a result, 52 questionnaires, or 15 percent, were not returned. 5 of the 400 questionnaires were found to be incomplete; they were therefore excluded. In

addition, 3 defendants specified that they did not make use of the mobile medical app. As a result, only 340 (85.00 percent) responses were analyzed. **Table 2** displays a review of the demographics of the respondents.

**Table 2.** Respondents’ demographic information.

Construct	Category	Count	Percentage
How long have you been using apps for ordering medical equipment and supplies?	Less than 1 year	80	23.4
	Between 1 to 3 years	31	9.1
	Between 4 to 6 years	161	47.1
	More than 6 years	70	20.4
Total	-	340	100
Gender	Male	136	40.0
	Female	204	60.0
Total	-	340	100
Highest level of education	Diploma	38	11.0
	Bachelor’s degree	225	65.5
	High diploma	39	11.5
	Masters or higher	38	11.4
Total	-	340	100

### 5.2. Measurement model

There are four factors that influence how the Smart PLS measurement model evaluates the reflective signs: separate piece dependability, hypothesis dependability, discriminant legitimacy, convergent validity in this study, the fillings of all sizes and pointers topped 0.714, so the dependability of the separate objects was deemed enough (**Table 3**). The dimensions of all the multidimensional variables meet the requirements of the composite reliabilities (**Table 4**); they had a construct reliability of more than 0.7. The convergent validity was determined by looking at the average variance extracted (AVE). In this case, as the consistent AVE traversed the 0.5 level, convergent sustainability was realized for all latent constructs (**Table 4**). Accord to the Formal–Larker criterion, all of the variables achieved discriminant strength, as shown in **Table 4** (Hair et al., 2010). This suggests that each construct differed empirically from the others.

**Table 3.** Inner structural model results.

Hypotheses relationship	Original sample (Std.Beta)	Sample mean (M)	Standard error (STERR)	T Values	P Values	Decision
Enduring Involvement → (Mobile Medical App) 7	0.292	0.289	0.043	6.818	0.000	Supported***k
Perceived Risk → (Mobile Medical App)	0.013	0.018	0.044	0.306	0.760	Not Supported
Resistance To Change → (Mobile Medical App)	0.195	0.201	0.060	3.261	0.001	Supported***
Product Description → (Mobile Medical App)	0.054	0.057	0.047	1.155	0.249	Not Supported
Product Awareness → (Mobile Medical App)	0.327	0.324	0.065	5.045	0.000	Supported***

Significant at \*:  $p < 0.1$ ; \*\*:  $p < 0.05$ ; \*\*\*:  $p < 0.01$ .



**Table 4.** Model assessment.

Dimension/construct/indicator	Items	Loading	Cronbach's alpha	Composite reliability	Average Variance Extracted (AVE)
Enduring involvement (EI)	EI1	0.797	0.827	0.880	0.597
	EI2	0.816			
	EI3	0.855			
	EI4	0.714			
	EI5	0.759			
Perceived risk (PR)	PR1	0.853	0.864	0.905	0.705
	PR2	0.736			
	PR3	0.874			
	PR4	0.887			
Resistance to change (RC)	RC1	0.879	0.838	0.902	0.755
	RC2	0.883			
	RC3	0.843			
Product description (PD)	PD1	0.791	0.688	0.827	0.615
	PD2	0.799			
	PD3	0.762			
Product awareness (PA)	PA1	0.853	0.814	0.890	0.729
	PA2	0.859			
	PA3	0.850			
Intention to use MOBILE MEDICAL APP (ITU)	ITU1	0.869	0.891	0.924	0.753
	ITU2	0.857			
	ITU3	0.883			
	ITU4	0.861			

### 5.3. Structural model

The organizational model's evaluation was made possible by all of the identified variables. What the structural path coefficients mean  $R^2$  and  $Q^2$  were reported. Similar to Bootstrapping was used to produce t-numbers and sureness intermissions (500 resamples). The researchers were able to statistically measure the implication of the path constants as a result of this. Three of the five straight influences—H1, H3, and H5—were important and maintained, as shown in **Table 5**. There was no support for H2 or H4. The estimated connections were analyzed. The structural framework was also put to the test, and the effects are summarized and detailed in **Tables 5** and **6**.

**Table 5.** Hypotheses overview.

Hypothesis	Hypothesized path	Decision
H1	Enduring involvement is positively linked to the intention of using MOBILE MEDICAL APP.	Supported
H2a	Perceived risk is negatively linked to the intention of using mobile medical app.	Not supported
H2b	Resistance to change is negatively linked to the intention of using mobile medical app.	Supported
H3a	Product description is positively linked to the intention of using mobile medical app.	Not supported
H3b	Product awareness is positively linked to the intention of using mobile medical app.	Supported

**Table 6.** Predictive quality of framework.

Build	Types of variable	R <sup>2</sup>	Redundancy of-cross-validity	Communality of-cross-validity	Result
mobile medical app	Endogenous	0.470	0.345	0.574	Modest

According to **Tables 5** and **7**, the study outline seemed to have sufficient analytical control for reliant on mutable. As a result, Table 7 shows that the purpose to use MOBILE MEDICAL APP had the uppermost level of clarified alteration ( $R^2 = 0.470$ ). In addition, a cross-validated redundancy index ( $Q^2$ ) was used by the researchers to evaluate the model’s endogenous reflective variables. The fact that the  $Q^2$  was greater than zero, as shown in **Table 7**, indicates that the framework has prognostic significance. The outcome, as displayed in **Table 7**, demonstrates that the primary classical has acceptable prescient pertinence for the internal development of the aim to utilize MOBILE MEDICAL APP.

**Table 7.** Effect size of exogenous constructs.

Endogenous construct	Exogenous constructs	Effect size	Result
MOBILE MEDICAL APP	Lasting Involvement	0.120	Small Effect
	Perceived Risk	0.000	No Effect
	Struggle to Change	0.111	Small Effect
	Product Description	0.005	No Effect
	Product Alertness	0.048	Small Effect

The independent variables (lasting participation, struggle to modification, and product consciousness) symbolize key precursor concepts and have a significant influence on the reliant on adaptable, with the exemption of apparent risk and product explanation as an informative hypothesis of intention to use the mobile medical app. Afterwards investigative the worth of  $f^2, f^2$  has to be extra than the improper round of 0.02. Finally, the researcher determined our replica’s goodness of fit (GoF) using the root of  $R^2 * \text{the AVEs for each construct}$ . The proposed framework had a GoF of 0.570, which was greater than 0.36 (Wetzels et al., 2009). The following formula was used to determine its value:

$$\text{GoF} = \sqrt{(0.470 \times 0.692)} = 0.570$$

## 6. Discussion

This study looked at how an ideal mobile medical app would be used at different levels of adaptation and took into account dimensions of the situation (platform emotion stage, fear effect, and product familiarity). This study found that one-third of the five concepts identified—enduring engagement, struggle for change, and commodity consciousness—had a significant impact on the purpose of using the mobile medical app. However, the mobile medical application was not affected by the other two concepts—clear risk and merchandise listing. The development of a 3D model, as shown in **Figure 1**, is the primary theoretical advance achieved by the current study. This structure addresses the three stages that customers (facility professionals) go through in determining their purchase path on mobile medical apps.

The experimental results increased the credibility of the research framework. The researcher found that customers (hospitalists) on mobile medical apps changed over time through the following paths: Enduring engagement (platform emotion), perceived risk, struggle for change (fear effect), product determination, product awareness (product familiarity), and intention Use the mobile medical application. According to the previous chart, the researcher found that the customers (hospital doctors) who use mobile medical applications have changed. The experimental analysis challenged expectations by showing that behavioral intentions were not influenced by the perceived threat or encounter of change. In addition, this study found that clinicians' behavioral intentions were not influenced by product descriptions due to their extensive knowledge of medical equipment and supplies. According to the results, this is the main reason why they are not interested in the concept of product description this is consistent with the results of the study (Salameh, 2022).

## **7. Conclusion**

In the situation of old-fashioned e-commerce, consumers' behavior intention was not considered to be primarily influenced by their familiarity with the products. In this research, the platform emotion stage, fear effect, resistance to change, and familiarity with the purpose to use the mobile medical app was initiate to be definitely influenced by products, according to the study. On the other hand, the findings demonstrated that the purpose to use the application was unaffected by the first dimension of fear—perceived risk. In calculation, it is significant to take into deliberation the belongings of brand awareness and description on customer cultural and linguistic differences. In addition, directing a procedure to influence the purpose to use the mobile medical app is necessary for establishing product familiarity. The researchers are persuaded that it is necessary to investigate the effects of accurate classification or recognition on intention to use mobile medical app. While, past investigations analyzed just the situational association and its impact on buy goal. One key aspect to consider when investigating this topic is the intention behind the use of mobile medical supplies and equipment. In some cases, mobile medical supplies and equipment may be used as a temporary solution to meet the healthcare needs of a population until more permanent healthcare facilities can be established. In other cases, mobile medical supplies and equipment may be used as a long-term solution to provide healthcare services in remote or underserved areas. Another important aspect to consider is the equipment itself. In order for mobile medical supplies and equipment to be sustainable, they must be durable and easy to maintain, as well as energy-efficient and made from environmentally friendly materials. Additionally, it is important to consider the logistics of how the equipment will be transported and used, as well as how it will be disposed of or recycled at the end of its useful life. It would be interesting to research best practices for mobile clinics and understand their effectiveness in providing sustainable healthcare services, studying the impact of the equipment used in these clinics on environment, how often the equipment needs to be replaced and the cost associated. Furthermore, it would be beneficial to consider the cultural and social factors that may influence the acceptance and use of mobile medical supplies and equipment in different communities. Ultimately, a thorough investigation into the role

of mobile medical supplies and equipment in sustainable clinics should take into account both the intention and the equipment itself, as well as the social, cultural, and environmental factors that may impact their use.

### **7.1. Research implications**

It is recommended, based on the findings, to conduct additional research on the facilities, goods, and primary purpose of mobile medical apps in order to uncover their potential effects on clients' intentions to buy. Customers (hospital physicians), shops (medicinal businesses or even medicine supplies), and stage workers are all original to the MOBILE MEDICAL APP situation, in contrast to conventional e-commerce. As a result, researchers may be able to identify innovative inferences and visions in that setting with the assistance of the concept of strategic performance. Additionally, a number of practical implications were suggested by the findings of the research, particularly for product manufacturers who implement marketing strategies based on mobile medical app. In addition, service providers need to focus less on the explanation of the properties vended on their mobile medical app and more on increasing product awareness, which can be accomplished through marketing strategies that make customers more familiar with the product. All around the world, suppliers should offer adequate, clear, and succinct data on their merchandise and stand out for clients through various strategies, for example, using pictures or even recordings. Customers' knowledge of mobile medical app products will grow as a result, as will their motivation to buy. Besides, considering the attributes and works managed by mobile medical app, it is important to comprehend the buying practices of clients in different districts and nations. Subsequently, item suppliers should form another buying climate that is ideal for clients to finish the buy. Product sellers must also respond to information requests, meet potential customers' needs, and try to get clients to expend as much time as likely looking the MOBILE MEDICAL APP instead of just creation acquisitions. By educating customers on how to locate products, navigate the app and make effective use of its main features, and suitably purchase facilities or goods, product providers can strengthen their connection with customers. This research aims to fill the void regarding the use of a mobile medical application and the issues that influence clinicians' purposes for using it by contributing to an account of the three dimensions—emotions, fear impact, and familiarity with the product—addressed in this empirical analytical research. Which enhances the statement of these relationships to reach an increase in customer interaction with mobile medical applications as a result of the above mentioned, which may change their purchasing patterns.

### **7.2. Future and limitations research**

Due to the fact that only clinic doctors and their secretaries were taken into consideration, the current study's findings cannot be applied to users of medical supply order apps. This is a significant limitation. Finally, we were only able to study 342 subjects (hospital physicians and assistant secretaries), which severely bounds our aptitude to apply our discoveries to these other applications due to time and resource constraints. To simplify the conclusions of this study, future research may consist

hospital doctors and medical supply marketers. This will be helpful in providing deeper and more comprehensive results. Additionally, this study only provided information regarding the most efficient channels of customer response, buying intentions on mobile medical apps situate on the philosophy of strategic performance. Various disciplines and perspectives can be deployed to explain customers' buying intentions.

**Author contributions:** Conceptualization, IE and SZO; methodology, IE; software, SZO; validation, IE, SZO and MA; formal analysis, IE; investigation, SZO; resources, MA; data curation, MA; writing—original draft preparation, MA; writing—review and editing, MA; visualization, IE; supervision, MA; project administration, MA; funding acquisition, IE. All authors have read and agreed to the published version of the manuscript.

**Conflict of interest:** The authors declare no conflict of interest.

## References

- Abbas, S., Alnoor, A., Sin Yin, T., et al. (2023). Antecedents of trustworthiness of social commerce platforms: A case of rural communities using multi group SEM & MCDM methods. *Electronic Commerce Research and Applications*, 62, 101322. <https://doi.org/10.1016/j.elerap.2023.101322>
- Abu-ALSondos, I. A., Salameh, A. A., Nawil, N. M., & Deraman, R. (2023). An Ensemble Filter for Indoor Positioning Technology of Mobile Home Service with Agile iBeacon Deployment. *International Journal of Interactive Mobile Technologies*, 17(16).
- Ajayi, O. O., Akinrujomu, O. S., Daso, O. S., & Akinniyi, O. (2019). A mobile based medical appointment and consultation (MMAC) system. *International Journal of Computer Science and Mobile Computing*, 8(5), 208–218.
- Ajmera, H., & Bhatt, D. R. V. (2021). A Study on Factors Affecting Consumer Attitude and Intention Towards the Mobile Payment Applications in Gujarat [PhD thesis]. Gujarat Technological University.
- Al-Jaroodi, J., Mohamed, N., & Abukhousa, E. (2020). Health 4.0: On the Way to Realizing the Healthcare of the Future. *IEEE Access*, 8, 211189–211210. <https://doi.org/10.1109/access.2020.3038858>
- Alkailani, M., & Nusairat, N. (2022). What motivates Jordanians to adopt mobile commerce? An empirical study of the most relevant factors. *International Journal of Data and Network Science*, 6(2), 487–496. <https://doi.org/10.5267/j.ijdns.2021.12.005>
- Almajali, D., Hammouri, Q., Majali, T., et al. (2021). Antecedents of consumers' adoption of electronic commerce in developing countries. *International Journal of Data and Network Science*, 5(4), 681–690. <https://doi.org/10.5267/j.ijdns.2021.7.013>
- Alohali, M., Carton, F., & O'Connor, Y. (2020). Investigating the antecedents of perceived threats and user resistance to health information technology: a case study of a public hospital. *Journal of Decision Systems*, 29(1), 27–52. <https://doi.org/10.1080/12460125.2020.1728988>
- Alqahtani, Y. A. M. (2023). M-commerce in Saudi Arabia perspectives of consumers and vendors following Vision 2030 (Doctoral dissertation, University of Sussex).
- Alwan, S. Y., Hu, Y., Al Asbahi, A. A. M. H., et al. (2023). Sustainable and resilient e-commerce under COVID-19 pandemic: a hybrid grey decision-making approach. *Environmental Science and Pollution Research*, 30(16), 47328–47348. <https://doi.org/10.1007/s11356-023-25456-0>
- Baghi, I., Gabrielli, V., & Grappi, S. (2016). Consumers' awareness of luxury brand counterfeits and their subsequent responses: when a threat becomes an opportunity for the genuine brand. *Journal of Product & Brand Management*, 25(5), 452–464. <https://doi.org/10.1108/jpbm-11-2014-0747>
- Balsalobre-Lorente, D., Nur, T., Topaloglu, E. E., et al. (2024). Assessing the impact of the economic complexity on the ecological footprint in G7 countries: Fresh evidence under human development and energy innovation processes. *Gondwana Research*, 127, 226–245. <https://doi.org/10.1016/j.gr.2023.03.017>
- Cohen, D., & Erev, I. (2024). The prediction-oriented middle ground between behaviorist and cognitivist consumer research.

- Consumer Psychology Review, 7(1), 121–126. Portico. <https://doi.org/10.1002/arcp.1091>
- Daoud, M. K., Al-Qeed, M., Ahmad, A. Y. A. B., et al. (2023). Mobile Marketing: Exploring the Efficacy of User-Centric Strategies for Enhanced Consumer Engagement and Conversion Rates. *International Journal of Membrane Science and Technology*, 10(2), 1252–1262. <https://doi.org/10.15379/ijmst.vi.1425>
- Dijkstra, T. K., & Henseler, J. (2015). Consistent Partial Least Squares Path Modeling. *MIS Quarterly*, 39(2), 297–316. <https://doi.org/10.25300/misq/2015/39.2.02>
- Dudouet, V. (2013). Dynamics and factors of transition from armed struggle to nonviolent resistance. *Journal of Peace Research*, 50(3), 401–413. <https://doi.org/10.1177/0022343312469978>
- Elrefaey, O., Ahmed, S., Ahmad, I., et al. (2022). Impacts of COVID-19 on the Use of Digital Technology in Construction Projects in the UAE. *Buildings*, 12(4), 489. <https://doi.org/10.3390/buildings12040489>
- Esmacili, P., Rafei, M., Balsalobre-Lorente, D., et al. (2023). The role of economic policy uncertainty and social welfare in the view of ecological footprint: evidence from the traditional and novel platform in panel ARDL approaches. *Environmental Science and Pollution Research*, 30(5), 13048–13066. <https://doi.org/10.1007/s11356-022-23044-2>
- Faccia, A., Le Roux, C. L., & Pandey, V. (2023). Innovation and E-Commerce Models, the Technology Catalysts for Sustainable Development: The Emirate of Dubai Case Study. *Sustainability*, 15(4), 3419. <https://doi.org/10.3390/su15043419>
- Flavián, C., Pérez-Rueda, A., Belanche, D., et al. (2022). Intention to use analytical artificial intelligence (AI) in services—the effect of technology readiness and awareness. *Journal of Service Management*, 33(2), 293–320. <https://doi.org/10.1108/josm-10-2020-0378>
- Foroudi, P., Jin, Z., Gupta, S., et al. (2018). Perceptual components of brand equity: Configuring the Symmetrical and Asymmetrical Paths to brand loyalty and brand purchase intention. *Journal of Business Research*, 89, 462–474. <https://doi.org/10.1016/j.jbusres.2018.01.031>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate data analysis in pharmaceuticals: A tutorial review. *International Journal of Pharmaceutics*, 417(1–2), 280–290. <https://doi.org/10.1016/j.ijpharm.2011.02.019>
- Hair Jr, J. F., Hult, G. T. M., Ringle, C., et al. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications.
- Haleem, A., Javaid, M., Singh, R. P., et al. (2021). Telemedicine for healthcare: Capabilities, features, barriers, and applications. *Sensors International*, 2, 100117. <https://doi.org/10.1016/j.sintl.2021.100117>
- Hew, J.-J., Lee, V.-H., & Leong, L.-Y. (2024). Deciphering the resistance behaviours towards mobile commerce applications: A Mobile Commerce Applications Resistance Theory (MOCART). *Computers in Human Behavior*, 151, 108033. <https://doi.org/10.1016/j.chb.2023.108033>
- Kaatz, C. (2020). Retail in my pocket—replicating and extending the construct of service quality into the mobile commerce context. *Journal of Retailing and Consumer Services*, 53, 101983. <https://doi.org/10.1016/j.jretconser.2019.101983>
- Kauw, D., Koole, M. A. C., Winter, M. M., et al. (2019). Advantages of mobile health in the management of adult patients with congenital heart disease. *International Journal of Medical Informatics*, 132, 104011. <https://doi.org/10.1016/j.ijmedinf.2019.104011>
- Khrais, L. T., & Shidwan, O. S. (2020). Mobile commerce and its changing use in relevant applicable areas in the face of disruptive technologies. *International Journal of Applied Engineering Research*, 15(1), 12–23.
- Kumar, K., Kumar, P., Deb, D., et al. (2023). Artificial Intelligence and Machine Learning Based Intervention in Medical Infrastructure: A Review and Future Trends. *Healthcare*, 11(2), 207. <https://doi.org/10.3390/healthcare11020207>
- Lee, N. R., & Kotler, P. (2019). *Social marketing: behavior change for social good*. SAGE Publications.
- Liu, Y., Li, Q., Edu, T., et al. (2023). Mobile social commerce content, consumer emotions and behaviour. *International Journal of Consumer Studies*, 47(4), 1315–1334. <https://doi.org/10.1111/ijcs.12908>
- Lu, B., & Chen, Z. (2021). Live streaming commerce and consumers' purchase intention: An uncertainty reduction perspective. *Information & Management*, 58(7), 103509. <https://doi.org/10.1016/j.im.2021.103509>
- Almeida Lucas, G., Lunardi, G. L., & Bittencourt Dolci, D. (2023). From e-commerce to m-commerce: An analysis of the user's experience with different access platforms. *Electronic Commerce Research and Applications*, 58, 101240. <https://doi.org/10.1016/j.elelap.2023.101240>
- Makrides, A., Vrontis, D., & Christofi, M. (2020). The Gold Rush of Digital Marketing: Assessing Prospects of Building Brand Awareness Overseas. *Business Perspectives and Research*, 8(1), 4–20. <https://doi.org/10.1177/2278533719860016>
- Mappesona, H., Ikhsani, K., & Ali, H. (2020). Customer purchase decision model, supply chain management and customer

- satisfaction: Product quality and promotion analysis. *International Journal of Supply Chain Management*, 9(1), 592–600.
- Mastana, A. S. (2023). Factors Influencing Consumer Intentions to Purchase Groceries Over the Internet: An Exploratory Study During the Pandemic. *International Journal of Professional Business Review*, 8(2), e0859. <https://doi.org/10.26668/businessreview/2023.v8i2.859>
- Mauji, N. I., & Abu Shanab, E. A. (2023). Are millennials in Qatar making m-commerce the future of online shopping. *International Journal of Sustainable Society*, 15(3), 266–293. <https://doi.org/10.1504/ijssoc.2023.10058329>
- Mehta, P., Singla, H., Saha, R., et al. (2021). A Pathway to Technology Integration: Eliciting Consumer's Behavioural Intention to Use Paytm Services. *Paradigm*, 097189072110037. <https://doi.org/10.1177/09718907211003712>
- Meikle, G. (2016). *Social media: Communication, sharing and visibility*. Routledge.
- Mollick, J., Cutshall, R., Changchit, C., et al. (2023). Contemporary Mobile Commerce: Determinants of Its Adoption. *Journal of Theoretical and Applied Electronic Commerce Research*, 18(1), 501–523. <https://doi.org/10.3390/jtaer18010026>
- Nawi, N. C., Husin, H. S., Al-Jahwari, N. S., et al. (2024). The path to sustainability begins with going paperless: Antecedents of intention to use electronic wallet using serial mediation approach. *Heliyon*, 10(2), e24127. <https://doi.org/10.1016/j.heliyon.2024.e24127>
- Phong, N. D., Khoi, N. H., & Nhat-Hanh Le, A. (2018). Factors affecting mobile shopping: a Vietnamese perspective. *Journal of Asian Business and Economic Studies*, 25(2), 186–205. <https://doi.org/10.1108/jabes-05-2018-0012>
- Safieddine, F. (2017). M-commerce. In: *Innovations in E-systems for business and commerce*. Apple Academic Press.
- Sakas, D. P., Reklitis, D. P., Terzi, M. C., et al. (2023). Growth of digital brand name through customer satisfaction with big data analytics in the hospitality sector after the COVID-19 crisis. *International Journal of Information Management Data Insights*, 3(2), 100190. <https://doi.org/10.1016/j.jjime.2023.100190>
- Salameh, A. A. (2022). An intention to use mobile applications for medical supplies and equipment ordering in clinics. *Frontiers in Public Health*, 10. <https://doi.org/10.3389/fpubh.2022.1021291>
- Shakeel, S. R., Juntunen, J. K., & Rajala, A. (2024). Business models for enhanced solar photovoltaic (PV) adoption: Transforming customer interaction and engagement practices. *Solar Energy*, 268, 112324. <https://doi.org/10.1016/j.solener.2024.112324>
- Sharma, K., Khosla, R., & Kumar, Y. (2023, June). Perceived risks in online shopping in Rohtak: A case study of Haryana. In *AIP Conference Proceedings* (Vol. 2782, No. 1). AIP Publishing.
- Sharma, A., & Mandloi, U. (2018). M-commerce: A new way of Commerce in India. *International Research Journal of Management Science & Technology*, 9(4).
- Sinha, N., Paul, J., & Singh, N. (2024). Mobile payments for bottom of the pyramid: Towards a positive social change. *Technological Forecasting and Social Change*, 202, 123313. <https://doi.org/10.1016/j.techfore.2024.123313>
- Susanto, P., Hoque, M. E., Nisaa, V., et al. (2023). Predicting m-Commerce Continuance Intention and Price Sensitivity in Indonesia by Integrating of Expectation-Confirmation and Post-acceptance Model. *SAGE Open*, 13(3). <https://doi.org/10.1177/21582440231188019>
- Techinakarawin, T., & Sun, J. (2023). Does Impulsive Posting Hurt or Help? The Effects of Conflicting Online Information on Attitude Uncertainty and Behavioural Consequences: The Moderating Role of Peer Social Network Support. *Journal of Theoretical and Applied Electronic Commerce Research*, 18(1), 615–633. <https://doi.org/10.3390/jtaer18010031>
- Wendland, J., Lunardi, G. L., & Dolci, D. B. (2019). Adoption of health information technology in the mobile emergency care service. *RAUSP Management Journal*, 54(3), 287–304. <https://doi.org/10.1108/rausp-07-2018-0058>
- Wetzels, Odekerken-Schröder, & van Oppen. (2009). Using PLS Path Modeling for Assessing Hierarchical Construct Models: Guidelines and Empirical Illustration. *MIS Quarterly*, 33(1), 177. <https://doi.org/10.2307/20650284>
- Wirtz, B. W., & Wirtz. (2021). *Digital business and electronic commerce*. Springer.
- Xu, X., Zeng, S., & He, Y. (2017). The influence of e-services on customer online purchasing behavior toward remanufactured products. *International Journal of Production Economics*, 187, 113–125. <https://doi.org/10.1016/j.ijpe.2017.02.019>
- Zhu, B., Charoennan, W., & Embalzado, H. (2022). The influence of perceived risks on millennials' intention to use m-payment for mobile shopping in Bangkok. *International Journal of Retail & Distribution Management*, 50(4), 479–497. <https://doi.org/10.1108/ijrdm-05-2020-0174>