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Intentions to Use Mobile Food Delivery Application: A Theory of Planned Behavior and Technology Acceptance Model Approaches

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ABSTRACT

This study investigates the factors influencing Algerian customers' intention to use food delivery applications. Drawing on the theory of planned behavior and the technology acceptance model, the research employs a quantitative approach using a sample of 213 participants with prior experience in ordering food via food delivery applications. The findings indicate that attitude, subjective norms, and perceived usefulness positively and significantly influence food delivery applications usage intention, while perceived ease of use does not have a significant effect. This study is, to the best of the authors' knowledge, the first to explore these factors in the Algerian context. The study contributes to the literature by providing insights into consumer behavior in emerging markets and offers practical recommendations for food delivery service providers to enhance user engagement, improve service offerings, and drive adoption. These findings are particularly relevant for companies looking to navigate the evolving landscape of digital commerce in Algeria and similar emerging markets.

Keywords: Mobile Apps, Consumer Behavior, Management Practices, Online Ordering, O2O, Algeria

INTRODUCTION

Nowadays, with the extreme proliferation of smartphones and the swishing to the digital mode of transaction, mobile applications have become an indispensable alternative to everyday tasks (Obeid, 2023; Teixeira & Nunes, 2024). With people's busy schedules and fast rhythm of lifestyles, cooking a meal or leaving the actual location (home, work) to have something to eat turns out to be a challenge. Ordering from food delivery applications (FDA) has become a lifestyle (Belanche et al., 2020), and the majority are willing to accept and adopt FDA just to achieve more convenience (Lee et al., 2023), especially among the young generation. FDA allows customers to choose their favorite food and order it from a wide range of restaurants, just with a click of a button, at their convenient times and places. FDA industry revenue has grown due to the pandemic and is expected to reach approximately 165 billion US by 2029 (Business of Apps, 2024); this growth volume is significant in both developed and developing countries. Many studies, to date, have offered an extended comprehensive in terms of intention to use/ continue to use in different culture and countries such as USA (Belanche et al., 2020), Italy (Troise et al., 2021), China (Cho et al., 2019), Thailand (Muangmee, 2021), Indonesia (Prabowo & Nugroho, 2019), Jordan (Alalwan, 2020), and South Africa (Madinga et al., 2023). However, to this date, no study has examined these factors within the Algerian scenario.

In Algeria, online food delivery and the FDA adoption rate have increased by 2022, with annual growth expected to reach 15.89% by 2028 (Statista, 2024a). Nevertheless, FDA is still considered a new technology in Algerian society, and its usage remains at a relatively low level compared to others Middle East and North African countries' markets, such

as Egypt (Bannor & Amponsah, 2024). For a few years, Jumia Foods was the primary leader of e-commerce companies and food delivery services in Algeria (Bannor & Amponsah, 2024). Even though, in December 2023, the company ended its food delivery services because the service did not fit the current economic conditions of the Algerian market (Jumia, 2023), creating a market environment free from competition.

The empirical study was chosen to be conducted in Algeria because, (a) online food delivery services (OFDs) have only recently been introduced in Algeria, creating a great market to launch a new OFDs start-up and FDA; (b) the OFDs is considered a promising sector since internet users reached 34.47 million by the end of 2023 (Statista, 2024b), representing 73.81% of the total population as most of them reside in urban cities, according to Kaur et al. (2021) are the most likely to use FDAs. By operating a FDA, restaurants and food aggregators can reach new customers at the lowest cost (Shankar et al., 2022a), and the advancement in digital technology and the growing trend will automatically increase the competition in the food service market. As such, FDA represents an opportunity for start-up app developers, restaurants, and food aggregators, but it also poses a challenge to gain market share. Therefore, delving into the factors that motivate customers' intentions to use the FDA will help create a more pertinent marketing strategy, which is the main question of the current study.

Previous literature has proven that among useful social-psychological models in predicting and analyzing the decision-making process in the context of new technologies are TPB and TAM (Shankar et al., 2022a). Few studies have confirmed the explanatory power of the integrated TPB and TAM approach regarding intentions to use or to continue using FDA (Wen et al., 2022; Troise et al., 2021) since the available literature in the context is predominantly conducted by the application of one theory such as UTAUT 2 (Alalwan, 2020), UTAUT (Muangmee et al., 2021), TPB (Shankar et al., 2020b), or TAM (Moon et al., 2023; Lee et al., 2023). Despite the importance of FDAs nowadays, comparatively, a few have discussed the context of FDAs (Alalwan, 2020; Arora et al., 2023) as the majority of studies tend to focus on OFDs (Shankar et al., 2022a).

The discussion supra underscored three gaps in the existing literature and research on FDAs: (1) Limited focus on consumer intention toward using FDAs; (2) All studies in the context have addressed Asian and Western countries, neglecting the African countries, especially Algeria, which is the continent's biggest country; and (3).

The scarcity of theory-driven research within the context of FDAs. To fill this gap, the current study applies TPB and TAM to examine Algerian behavior intentions toward FDA by addressing the following objective: (1) Determine factors that influence the intention to use FDA by undertaking a comprehensive literature review in the context; (2) Assess whether the antecedents and determinants, which are identified in previous literature in the FDA context, could be applied to predict Algerian intentions to use FDA; and (3) Explore the performance and implication of merging TPB and TAM in the context of the FDA.

Following the introduction, the next part of the current study includes the literature review, hypotheses development, and theoretical framework. Next, it covers the research methodology to describe the process and layout for collecting data and presents statistics analyses to exam the hypotheses and the empirical results. Then, it elaborates on the discussion and the theoretical and practical implications. Finally, the study concludes with limitations and suggestions for further studies.

LITERATURE REVIEW, HYPOTHESES DEVELOPMENT, AND RESEARCH MODEL

Food Delivery Applications (FDAs)

The FDA is an online application downloaded and installed on a smartphone. After registration and creating a profile, the app allows users to position online food orders to be delivered to specific places for offline consumption. FDA is an intermediary platform between food providers (e.g., restaurants, convenience stores, and cafes) and the consumer; it is not involved in the food preparation or aggregation process. FDA is used to search nearby restaurants, check menu items, place online food delivery orders, and pay electronically or cash upon delivery. The entire process can be done without personal or physical interaction between the customer and the food provider. With the FDA, customers pick their favorite food from a variety choice of restaurants and meals, especially during their full-time schedule, without wasting time by eliminating the time of traffic congestion (Prabowo & Nugroho, 2019), overcrowding at the restaurant (Muangmee et al., 2021), and time to cook and prepare food (Alalwan, 2020). FDA offers great convenience to customers since they can receive their food at their convenient time and locations(Cho et al., 2019) with just a few digital clicks.

TPB and TAM

The study framework integrates TPB (Ajzen, 1991) and TAM (Davis, 1989) to explain and understand the determinants of Algerian customers' intentions towards FDA, as both are considered among prominent tools used to predict users' intentions to use FDA (Al Amin et al., 2021; Troiseet al., 2021). TPB and TAM have been both developed and grounded on the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980). The above three theories assume that behavioral intention is a strong antecedent of actual behavior, and attitude (ATT) towards certain behavior, in both TPB and TAM, has a significant influence on intention (Ajzen, 1991; Davis, 1989).

The TPB examines the determinants of individuals' behavioral intentions and, consequently, their actual behaviors, where ATT, subjective norms (SN), and perceived behavior control (PBC) are the critical predictors of individuals' intentions toward a specific behavior (Ajzen, 1991; Almokdad et al., 2023). Meanwhile, TAM investigates the antecedents in accepting or rejecting the adoption of new technology from users' perspectives, where the predictor of actual usage is the intention, and users' intentions to adopt or to use a specific technology are identified by two principal variables, i.e., perceived ease of use (PEOU) and perceived usefulness (PU) (Davis, 1989). In other words, TAM hypothesizes the positive effect of PEOU and PU on the intention to use a new technology.

According to TPB, PBC is a latent variable along with ATT and SN influencing behavior intention. PBC refers to "people's perceptions of the ease or difficulty of doing or engaging in certain activities, attitude relates to a person's positive or negative judgment of the conduct" (Almokdad et al., 2023, p. 5). According to Ajzen (2002), PBC not only derived from the ability to control a technology (controllability) but also found this technology easy to use (self-efficacy). In the context of food delivery services, the impact of PCB was found to be uncertain (Shankar et al., 2020b; Belanche et al., 2020; Hamid et al., 2022), and results of prior studies in food delivery systems have highlighted PEOU as a positive predictor of PBC (Troise et al., 2021; Wen et al., 2022); thus, PEOU could be an alternative approach to evaluate PBC. To capture the determinants of users' intentions toward using FDA, an adjustment was made to the original TPB model by removing PBC.

Intention to use

The dependent variable in this study is the intention to use FDA. Intention involves the planning and commitment to act in a certain way and is often associated with motivation, desires, or aims (Njoku et al., 2024). It stands to the degree to which a user considers choosing a specific technology to complete a certain task (Davis, 1989). In this study, intention to use FDA is defined as the customers' desire to adopt and to use FDA as a system to order food in next transactions. The intention towards a behavior is motivated by a person's belief and awareness about the level of value obtained after acting a certain behavior. For instance, Gupta and Duggal (2021) found that consumers' behavior towards using OFDAs is positively affected by their attitudes and perceptions of benefits, while it is negatively impacted by the perception of risk. Intention is often seen as a precursor to action, influencing decision-making and the choices individuals make (Njoku et al., 2024).

Attitude

Both TPB and TAM assume that users' positive ATT significantly impact their behavioral intentions toward a certain behavior (Ajzen, 1991; Davis, 1989). ATT is defined as "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991, p. 188). ATT reflects the user's perspective towards a new technology (Davis, 1989). In the context of FDA, ATT is an overall assessment that could be positive or negative toward using a certain application to order food, which means that users' inclination to use FDA to order their meals varies according to their level of assessment toward this technology. Previous studies have highlighted the significant impact of a positive ATT in enhancing users' intentions toward FDAs (Al Amin et al., 2021; Arora et al., 2023; Belanche et al., 2020; Gupta & Duggal, 2021; Hamid et al., 2022; Madinga et al., 2023; Moon et al., 2023; Troise et al., 2021; Wen et al., 2022;)

Subjective Norms

According to Ajzen (1991, p. 188), SN is "the perceived social pressure to perform or not to perform the behavior". This means that individuals are willing to use a given technology to respond to the influence of others. This social pressure could be perceived by from family member, friends, collogues,and peers. In the context of the study, SN refers to the degree to which a user feels pressure from significant others in his/her community about getting food by using

FDAs. The significant effect of SN on the intention to use FDA has been proved by previous research (Al Amin et al., 2021; Belanche et al., 2020; Hamid et al., 2022 Troise et al., 2021; Shankar et al., 2020b; Wen et al., 2022)

Perceived Ease of Use

PEOU reflects the individual's belief that using a particular system would be effortless (Davis, 1989, p. 320), which means that the adoption and acceptance of a certain system are related to how easy users perceive it to be (Obeid, 2023). In the current study, PEOU refers to the ease of controlling the whole process, from the app installation to intel order placement. A perception of FDAs' ease of use is related to their simplicity, which is influenced by the energy and time required for learning (Lee et al., 2023). It is also related to the system's options and features, which are positively correlated with using intention toward FDAs such as easy registration and payment (Lee et al., 2023), simplifying the navigation and order placement process (Madingra et al., 2023). Previous studies have confirmed the positive impact of PEOU (Lee et al., 2023; Ray et al., 2019).

Perceived Usefulness

PU is "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320). PU of a given technology is assessed by its capability to improve user productivity (Lee et al., 2023). According to Moon et al. (2023), PU is the utility perception derived from using a food delivery system. Previous research has confirmed that users are likely willing to use FDA when they perceive its advantages and benefits, such as the variety of food choices and convenience (Arora et al., 2023), information quality (Moon et al., 2023), saving time (Lee et al., 2023), and money (Cho et al., 2019).

Hypotheses Development and Research Model

In order to explain the intention to use FDA, hypotheses were proposed, in which independents variables adopted from TPB (i.e., attitude and subjective norms) and TAM (perceived usefulness and ease of use).

H1 Attitude has a positive effect on intention to use FDA

H2 Subjective norms has a positive effect on intention to use FDA

H3 Perceived ease of use has a positive effect on intention to use FDA

H4 Perceived usefulness has a positive effect on intention to use FDA

Based on literature above and the proposed hypotheses, the summary of the hypothetical paths is illustrated in **Figure 1**.

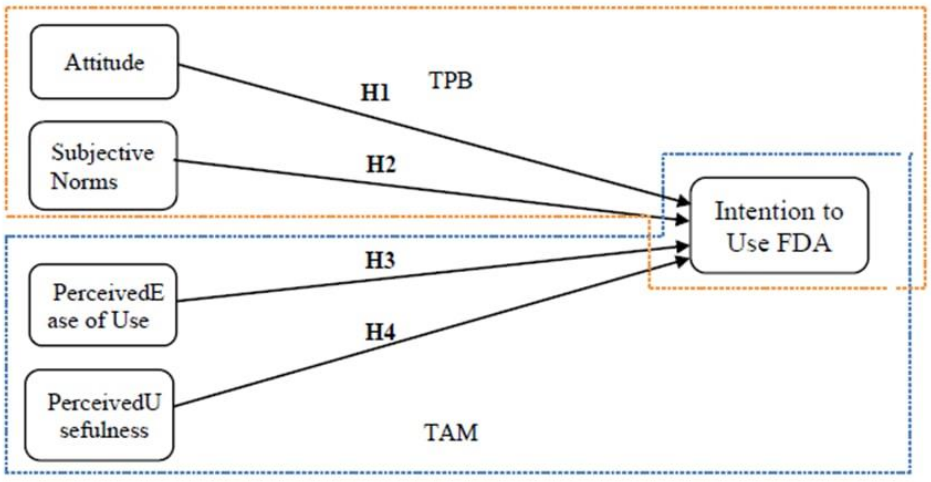

Figure 1. The proposed conceptual model emerging TPB and TAM

RESEARCH METHODOLOGY

Data collection

According to Ebert et al. (2018), there is no differentiation between paper-based and web-based questionnaires. Thus, a self-administered questionnaire was developed using Google's questionnaire program and distributed online via Facebook to Algerian customers aged 18 years and above who have used any FDA providers to place at least one food order within the past six months. The data was collected for one month starting from March 24, 2024. A total of 213 responses were obtained and used for the final study's hypotheses test, with no excluded form.

Measures and questionnaire development

The study questionnaire was developed based on TPB and TAM constructs to test the hypothetical relationship. After pretesting the questionnaire on a few participants (25 FDA users) to ensure its readability and adequacy, as suggested by Kothari (2004), a minor change were made. The questionnaire consists of two parts; the first part includes close-end questions about respondents' background (i.e., gender, age, level of education, marital status, and income per month). The second part of the other 15 questions is about variables referred from the previous literature review. Questionnaire items were measured on a 5-point Likert scale, with (5) representing "strongly agree" and (1) representing "strongly disagree". The three items for each variable were adapted from Cho et al. (2019), Njoku et al. (2024), Troise et al. (2021), and Venkatesh et al. (2003); the 15 questions items and adapted sources are listed in **Table 1**. To avoid language and culture differences impact, the questionnaire, initially written in English, was translated into Arabic, the native language of the sample. A bilingual professor from Medea University has checked and confirmed items translations. The statistical procedures were conducted using IBM SPSS version 23.0 for Mac.

Table 1. Measurement of Constructs

Constructs	Questionnaire Items		Reference
Attitude	ATT1	For me, using FDA is good idea	Troise et al. (2021); Cho et al. (2019)
	ATT2	For me, using FDA is wise	
	ATT3	For me, using FDA is rewarding	
Subjective Norm	SN1	People who are important to me (e.g., family members, close friends, and colleagues) recommend I should use FDA	Venkatesh et al. (2003); Ajzen (1991)
	SN2	People who influence my behaviour think that I should use FDA	
	SN3	People who are important to me support me to use FDA	
Perceived Ease of Use	PEOU1	Interaction with FDA is clear and comprehensible.	Troise et al. (2021)
	PEOU2	Using FDA requires minimum effort	
	PEOU3	Learning how to use FDA is easy	
Perceived Usefulness	PU1	I think the FDA is beneficial	Troise et al. (2021); Cho et al. (2019)
	PU2	For me, this FDA is useful in terms of supporting my needs.	
	PU3	Using this FDA helps me purchase food more conveniently	
Intention to use FDA	IN1	I intend to use the FDA	Cho et al. (2019) ; Njoku et al. (2024)
	IN2	I have decided to use FDA the next time	
	IN3	If I have an opportunity, I will order food through the delivery app	

RESULTS

Demographic profil

Table 2 represents the demographic characteristics of the sample. Most of the respondents were female at 74.20%, while males accounted for only 25.80%. In addition, the age of respondents ranges between 18 and over 45 years old, where over half (52.10%) of respondents were between the ages of 18 and 25 years old, and more than one-third (33.30%) were between the ages of 26 and 35 years old, followed by 14.10% between the ages of 36 and 45 years old, with only one respondent over 45 years old. As for the educational level, the majority of respondents were university graduates accounting for 93.90% of the sample. In terms of monthly personal income, the majority of respondents have less monthly personal income (<20.000 DZD) which accounts for 45.50% of the sample, the income of the rest of the sample ranges between different levels of monthly income as follows, 13.10 % without income, 14.40 % have income between 20.000 – 40.000 DZD, 09.40% the income was between 40.000 – 60.000 DZD, and 17.40% represent those who have an income more than 60.000 DZD.

Table 2. Demographic Characteristics of sample (*N*=213)

Characteristics	Types	Frequency	(%)
Gender	Female	158	**74.20**
	Male	55	25.80
Age	18 – 25	111	**52.10**
	26 – 35	71	33.30
	36 – 45	30	14.10
	> 45	1	00.50
Level of education	Secondary	5	02.30
	College graduates	200	**93.90**
	High graduate-degrees	8	03.80
Marital status	Single (including widowed or divorced without children)	84	**76.40**
	Married (having spouse and /or having children)	26	23.60
Personal Income per month (DZD)	Without income	28	13.10
	<20.000	79	**45.50**
	20000– 40000	31	14.60
	40000 – 60000	20	09.40
	>60.000	37	17.40

Structural model

As shown in **Table 3**, Cronbach's alpha coefficients for all variables are larger than the threshold of 0.75, ranging from 0.781 to 0.932, indicating fairly high values and good reliability of the study instrument (Njoku et al., 2024). Items loadings, ranging from 0.632 to 0.928, are greater than the recommended benchmark of 0.6 (Hair et al., 2006), indicating that each item is reliable and deemed to be instructive to measure that respective construct. Each variable composite reliability (CR) is greater than 0.7 (Hair et al., 2011), ranging from 0.796 to 0.890, proving their internal consistency. Furthermore, all variables have average variance extracted (AVE) above the benchmark of 0.5 (Hair et al., 2011), ranging from 0.566 to 0.730, indicating their validity and reliability. Based on the normality test results presented in **Table 3**, it can be inferred that the data was normally distributed, and the measurement validity was adequate. The skewness value and kurtosis value were both within the acceptable range, which, as Tabashnik and Fidel (2019) suggested, should be below +1.5 and above -1.5 for both tests. The average mean values range between 2.739 and 3.887, indicating the positive role of all variables.

Table 3. Measurement Statistics of Constructs

Constructs	Item	Loading	Cronbachs Alphas	CR	AVE	Skewness	Kurtosis	Mean	SD
Attitude			**.870**	**.796**	**.566**	**-.596**	**-.540**	**3.804**	**1.014**
	ATT1	.725						3.950	1.102
	ATT2	.728						3.800	1.132
	ATT3	.801						3.660	1.182
Subjective Norm			**.837**	**.890**	**.730**	**.009**	**-.921**	**2.739**	**1.175**
	SN1	.930						2.770	1.384
	SN2	.879						2.860	1.383
	SN3	.744						2.580	1.291
Perceived Ease of Use			**.763**	**.853**	**.660**	**-.771**	**-.080**	**3.887**	**.963**
	PEOU1	.780						3.880	1.218
	PEOU2	.862						3.960	1.138
	PEOU3	.792						3.830	1.151
Perceived Usefulness			**.810**	**.852**	**.658**	**-.611**	**.279**	**3.680**	**.956**
	PU1	.767						3.770	1.107
	PU2	.865						3.560	1.138
	PU3	.798						3.710	1.125
Intention to use FDA			**.929**	**.846**	**.648**	**-.814**	**.014**	**3.815**	**1.104**
	IN1	.830						4.000	1.183
	IN2	.773						3.680	1.214
	IN3	.810						3.760	1.143

Based on the linearity test, the independent variables have a moderate to strong positive correlation with each other (Meghanathan, 2016). All independent variables show a positive and significant linear correlation for r> 0.4 at p< 0.01, except for the correlation among SN and PEOU, which is considered very weak (r = 0.242). The intention to use FDAs has a positive and strong correlation with PU, ATT, and SN, with correlation coefficients of r = 0.751, r = 0.730, and r = 0.615, respectively, at p< 0.01. Conversely, the intention to use FDAs has a weak correlation with PEOU (r = 0.390, p< 0.01). **Table 4** presents the variance inflated factor (VIF) for all independent variables less than 3, ranging from 1.284 to 2.208, and their tolerance value is above 0.1. According to Hair et al (2011), VIF and tolerance values are within the acceptable required range, indicating that the study has no multicollinearity concern.

Table 4. Pearson Correlation and regression analysis

Constructs	Correlations					VIF	Tolerance
	IN	ATT	SN	PEOU	PU		
IN	1						
ATT	.730*	1				2.208	.453
SN	.615*	.569	1			1.552	.645
PEOU	.390*	.406	.242	1		1.284	.779
PU	.751*	.689	.518	.449	1	2.136	.468

To examine the explanatory power of the structural model and its predictive accuracy, the R-square (R2) was calculated. R2 value determines the proportion of the dependent variable's variance that can be explained by independent variables. According to **Table 5**, the explained variance of intention to use FDAs is R2 = 0.681, indicating that 68.10% of the dependent variable's variation is explained by the structural model, while the remaining 31.90% is unexplained. Even though there is no consensus in the social sciences on how to evaluate the quality of R2, the level of explained variance obtained is greater than the suggested R2 for a good model (Hair et al., 2011).

Table 5. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.825[a]	.681	.675	.630

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

Hypotheses testing

The hypotheses' testing presented in **Table 6** shows that ATT had a positive impact on consumers' intentions toward using FDAs (β= 0.341, p< 0.001); thus H1 is supported. SN was positively related to consumers' intentions to use FDAs (β= 0.205, p< 0.001); therefore, H2 is supported. Unexpectedly, PEOU toward using FDA has no significant influence on consumers' intentions to order food using those apps (β= 0.029, p= 0.569); hence, H3 is not supported. PU was found to be positively influencing customers' intentions to use FDA (β= 0.474, p< 0.001), therefore, H4 is supported.

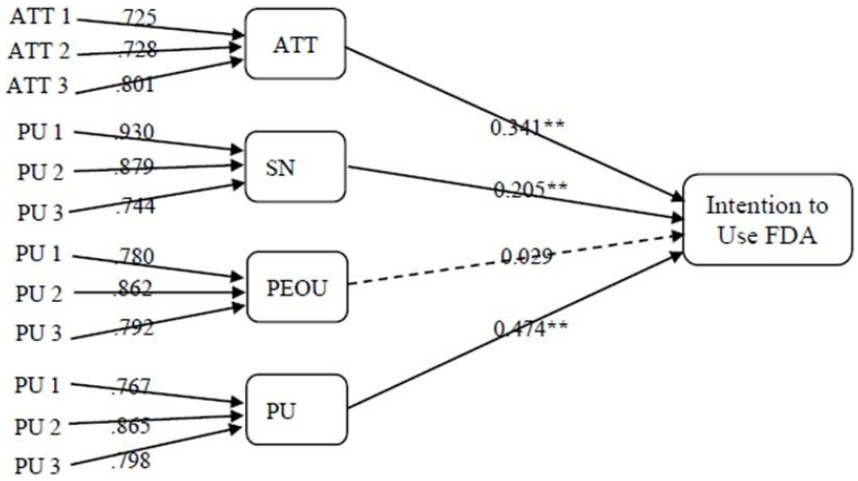

Figure 2. Structural equation model with parameter estimates. Notes: ***p<0.001; ** p<0.05. Non-significant paths are shown in dotted lines

Table 6. Summary of hypotheses testing

	Hypotheses path	Path coefficient (β)	(t) statistics	Sig.	Decision
H1	attitude ⟶ intention to use FDA	0.341	5.379	<0.001***	**S**
H2	subjective norms ⟶ intention to use FDA	0.205	4.471	<0.001***	**S**
H3	perceived ease of use ⟶ intention to use FDA	0.029	0.571	0.569	**NS**
H4	perceived usefulness ⟶ intention to use FDA	0.474	7.168	<0.001***	**S**

Notes: *** p<**0.001**; ** p<**0.05**; **S**=supported, **NS**=not supported.

DISCUSSION AND IMPLICATION

The findings support H1, H2, and H4, clarifying that the intention to use FDA is related directedly and positively to customers' ATT, SN, and PU toward those apps, explaining 67.50 % of the variance in their behavioral intentions. However, H3, which suggested the positive impact of PEOU on customers' intentions to use FDA, has no support.

The PU has appeared as the most significant determinant influencing customers' intentions to use FDA (β = 0.474), which is consistent with previous studies (Troise et al., 2021). Previous research has emphasized that saving time is seen as a major benefit of using FDA (Lee et al., 2023; Moon et al., 2023). The desire to save time by reducing traffic congestion and waiting at restaurants motivates customers to use the FDA. In this matter, reducing the delivery time is an opportunity to gain a positive appraisal and enhance the customer's experience; FDAs managers and food providers should prevent customers from waiting for their orders longer than the estimated time. Usually, FDAs show the prices of each item and the cost and fees of the delivery service. The items' prices are fixed and cannot be increased after delivery; meanwhile the cost of the delivery service is predetermined according to distance between provider of the food and the final delivery address (Troise et al., 2021). From customer perspective, essential benefit of using FDA, along with saving time and energy, is saving money (Tandon et al., 2021), by comparing prices and to benefit from offers and discounts (Ray et al., 2019). In this regard, Chmaitilly (2023) found that perceived price mediates the relationship between service output quality and customer satisfaction. The finding reports that users with the last personal monthly income category represent nearly half of the sample (45.50%). This category consists of highly price-sensitive customers, which could be interpreted as they perceived that the FDA offers food items at affordable prices. Therefore, FDA managers and stakeholders should always display items' prices, delivery service fees, and all associated expenses. Besides, maintaining a marketing strategy includes discounts, deals, giveaway orders, free delivery, and loyalty programs. According to previous studies, information quality has a significant impact on increasing the user's perception of FDAs' usefulness (Belanche et al., 2020) and presents a suitable reference that helps users in their decision-making (Moon et al., 2023). Given the inability to check the order during an online purchasing and noncontact interaction, FDA providers and managers should incorporate all the pertinent details about the items on sale, including ingredients, nutritious values, calories, restaurant evaluation, and estimated delivery time.

The findings show that ATT positively impacts the customers' intentions to use FDA, which validates previous research (Gupta & Duggal, 2021; Moon et al., 2023; Madinga et al., 2023), which means that customers with positive ATT toward a mobile application will have an intention to use it more often. Similar to the study conducted by Hamid et al. (2022), ATT appeared as the second strongest determinant impacting customer behavioral intention toward using FDA. According to previous study, in order to generate a favorable ATT towards using mobile apps, as managers, it is critical to make sure that user having a positive experience during using the app (Shankar et al., 2022a; Teixeira & Nunes, 2024). Mangers should pay attention to deliver customers' orders with accuracy, by providing an interactive feature such as direct calling and chat, in order to avoid offering inefficient service and incorrect orders. Recently, the Algerian eating habits is based on a wide variety of traditional food as well by fast food and junk food. It is important as a restaurant or food aggregator to understand Algerian customers' need, preferences and their prevalent food patterns; and customize the app in accordance with their requirements and fleeting needs. FDA manager and companies should offer a wide-ranging food menus option and provide a variety of cuisines to choose from in order to captive new users and preserve actual ones.

SN was found to be significantly and positively related to customers' intentions to use FDA, highlighting that the suggestions and the opinions deemed by others, such as family members, friends, and colleagues, play a significant role in shaping customers' intentions in terms of using FDA. The results support earlier research in the context (Troise et al., 2021; Hamid et al., 2022). According to data, female tend to use FDA more often compared to male representing 74.20 % of the study sample. Advertising and sale promotion positively impact customers' intentions to use FDA (Ray et al., 2019). As such, manager and stockholder should using promotional materials targeting female audience and working

mothers, such as ads and social media platforms, to highlight the benefits of using FDA in term of saving time, effort, and convenience. Customers' intentions could be enhanced not only by the suggestions of family members or friends but also by influences, role models, and suggestions of actual users. FDA owners should collaborate with influencers and food vloggers in order to promote the app during specific events and times, and attract new users.

However, the impact of PEOU on intention to use FDA was insignificant, which contradicts the findings of previous studies (Lee et al., 2023) and is consistent with others (Alalwan, 2020; Moon et al., 2023). The impact of PEOU on the usage intention of new technology was confirmed to be positively significant only in the early stage of technology usage (Venkatesh et al., 2003), which means that as users gain experience from using the app, they automatically ignore its ease of use. Additionally, since FDAs provide the same service through the same process, it can be inferred that users could take the ease of use of those apps for granted. In the current study, the insignificant impact of PEOU could be explained by the sample's demographic characteristics. More than half of respondents were young adults aged from 18 to 25 years old accounting (52%), and the large majority were highly educated (93,90%). Thus, the majority of the sample is likely tech-savvy and familiar with mobile apps, and undoubtedly, they were able to use any FDA without facing any struggle, as indicated by the higher mean value of PEOU compared to other constructs (see **Table 3**).

CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

Even though the COVID-19 pandemic has accelerated the use of the FDA among Algerians, this trend is still nascent. Considering the geographical zone where there are few operating FDAs in the market and the fact that 38.64% of the Algerian population consists of young adults aged between 15 and 39 by the end of 2022 (United Nations, 2023), these two factors indicate a sign of the promising future of potential online food delivery service market.

In this matter, the study aimed to define and examine the factors influencing the adoption behavior of such an app. The study is theoretically contributing to the existing literature related to the adoption of FDA among smartphones users, which is still considered as a trend and new lifestyle especially among Algeria market. The findings support earlier research on the behavioral intention toward using FDA (Troise et al., 2021; Belanche et al., 2020; Lee et al., 2023; Moon et al., 2023; Arora et al., 2023). Based on two variables from the TPB model (i.e., ATT and SN) and TMA model variables (i.e., PU and PEOU), the current study is arguably the first, both locally and internationally, that offers insights into the cognitive and technical aspects that may enhance Algerian customers' intentions to use smartphones' applications to order food. As mentioned in the discussion, managerial implications were provided for restaurants, managers, app developers, and stakeholders on how to develop a valuable and effective strategy to enhance customers' intentions to use FDA. The findings illustrate the positive impact of utilitarian value, psychological, and interpersonal factors (PU, ATT and SN, respectively) on customers' intentions. The customer's intention to use the FDA is influenced by the benefits and convenience provided by the app, such as saving time and money, reducing the effort of traveling, and doing household chores related to preparation and cooking. FDA managers and stakeholders should focus on providing high-quality services to FDA users, such as quick delivery, discounts, promotional incentives, several options for payment, and various food choices and providers to order from. Customers prefer to enjoy their food orders at their convenient times and locations, with the expected quantity, at the right temperature, and in good condition in different price ranges. Developers should offer special attention to the app-related factors to improve customers' experiences in ordering and receiving their food, such as providing a personalized experience, clear information and instructions.

Even though the current study offers a starting point for future research on FDA adoption in the Algerian market, it is not without limitations that need to be considered. Initially, the study was conducted in Algeria, which narrowed the generalization of the findings to different countries due to cultural differences. As a suggestion, future research should apply the same framework to other nations and cultures. Next, the data was collected using an online survey, which might affect the statistical outcomes; thus, future researchers should consider using other methods to collect data, such as offline surveys (face-to-face mode). Further, the current study only examines the sociological and technological factors that could enhance users' intentions to use FDA and ignores the impact of other factors that could be significant barriers to adopting such technology. From it, future research might examine the impact of the inhibitory factors on users' intentions to use FDA, such as privacy concerns, security risks, and food hygiene. This could be conducted by applying innovation resistance theory (IRT). Additionally, 52% of a survey participants belonged to Generation Z, while 33% were from Generation Y, representing over 85% aged between 18 and 34. It is suggested that future studies examine the impact of age as a moderator construct on the intention and concentrate on exploring the behavioral intention among elderly users, as the control capabilities of the technology can vary depending on the user's age. Future research should also consider other sociodemographic factors, such as gender and previous experience. Finally, the study focuses on predicting customers' intention toward using FDA rather than exploring their actual utilization. Future research could expand the study by examining the actual usage of those apps.

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