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What's for Dinner? Factors Contributing to the Continuous Usage of Food Delivery Apps (FDAs)

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A B S T R A C T

This study proposed a novel model to investigate influential factors affecting the intention to continue using increasingly popular food delivery apps (FDAs). The proposed theoretical model is developed and validated to extend traditional technology acceptance and adoption theories by identifying several determinant factors that capture the unique context of FDAs continuous usage. Hypotheses were tested using a partial least square structural equation modeling approach (PLS-SEM) on data collected from 331 actual FDAs users during the COVID-19 pandemic. The results reveal that convenience, perceived compatibility, delivery experience, and online reviews significantly influence the continuous usage of FDAs. The findings also confirm the importance of continuous intention on the actual use of FDAs. The research model of this study explains 65% of variance in continuous intention and 47% in actual use. The insights provided by this study suggest fruitful directions for future research. They can also help FDAs companies, developers and marketers with strategies and tips for further development and growth by ensuring users' continuous usage of these platforms.

Keywords: Actual Use, Continuous Intention, COVID-19, Food Delivery Apps, FDAs.

Ⅰ. Introduction

Smartphones have brought radical changes to societies and human lives (e.g., Alalwan, 2020; Pigatto et al., 2017; Ray et al., 2019), including the way they shop. According to Global Association of Mobile Operators report, in 2020, there were more than 5 billion smartphone users (GSMA, 2020). Penetration of smartphones has fueled the growth of various mobile applications (hereafter: apps) (e.g., McLean et al., 2020) including mobile shopping apps (Chopdar and Balakrishnan, 2020). For instance, due to the limited functionality of online shopping websites, many businesses have launched apps for shopping on smartphone devices (e.g., Chopdar and Balakrishnan, 2020; Liu et al., 2019). A report by

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Statistia suggested that Food delivery apps (FDAs) are among the fastest growing sectors of mobile apps (Statistia, 2020). The report pointed out that in 2019, the online food delivery reached US$ 107.4 billion worldwide and is expected to grow to US$182.3 billion by 2024 (Statistia, 2020). Ubereats, Grubhub, Seamless, and Zomato are some of the major global service providers in the FDA sector (Kumar and Shah, 2021). Talabat, Carraige, and Deliveroo are the main FDAs platforms used in Kuwait, the context of this study.

Food delivery apps (FDAs) are considered as a subset of online-to-offline (O2O) food delivery services and can be defined as service-based mobile apps which enable customers to order food online and get it delivered to their doorsteps (Alalwan, 2020; Rabaa'i et al., 2022). Roh and Park (2019) classified FDAs into two categories: (1) restaurants or catering services such as Pizza Hut, Domino's, or KFC which have created their own apps for receiving online orders and facilitating the delivery, and (2) third-party intermediary services (platforms), which act as an interface between customers and restaurants or catering services. The second category is the main focus of this study, as these FDAs are not associated with a specific restaurant; rather, they can conveniently enable customers to browse listed subscribed restaurants, menus and ratings, finalize and confirm orders via online payment, and track order statuses with no physical or telephonic interaction with restaurants (Kaur et al., 2021, p. 1132).

The 2019 novel coronavirus (COVID-2019) erupted as a serious pandemic from the end of 2019 then progressively expanded worldwide (e.g., Kumar and Shah, 2021; Zhao and Bacao, 2020), and reached Kuwait in March 2020. As of December 16, 2021, in Kuwait, there were 413,790 confirmed COVID-19 cases and 2,466 deaths; however, globally, there were a total of 271,376,643 confirmed COVID-19 cases and 5,324,969 deaths (WHO, 2021). During the COVID-19 crisis, governments around the world imposed strict measures to minimize the spread of the virus and contain the associated infections, such as self-isolation, social distancing, wearing masks, and avoiding direct or indirect social contact (e.g., Kumar and Shah, 2021; Zhao and Bacao, 2020). In Kuwait, the government has enforced several gradual restrictive measures to contain this outbreak and minimize its impact on its population at large, including land boarders closing, airport shutdown, none-vital businesses lockdown, medical centers quarantines, home quarantines, and finally partial curfew for the whole country (Rabaa'i, in press b).

During the same period of COVID-19 crisis, the traditional catering industry has suffered dramatically and is estimated to have lost around US$ 240 billion by the end of 2020 (Kumar and Shah, 2021). Despite the negative impact of COVID-19 on the catering industry, notably, a number of traditional catering services, globally and in Kuwait, transitioned their services from traditional in-store service to O2O service satisfy customers' demands and to maintain the business through the pandemic (e.g., Zhao and Bacao, 2020). Additionally, during the COVID-19 pandemic, customers are more concerned about food safety and delivery hygiene (Duda-Chodak et al., 2020), as they might be infected with COVID-19 if they contact the contaminated food and infected delivery personnel (WHO, 2020). As such, FDAs service providers promoted their services by adhering to hygiene standards at restaurants for all steps including preparing, cooking, and packing of food, and followed the contactless delivery process to ensure minimal exposure to the virus (Al Amin et al., 2021).

While the FDAs sector is expected to grow at an annual growth rate of 11.4% during 2019-24 (IMARC, 2020), there are two issues associated with these

platforms. First, the increased competition among the growing number of FDA service providers (Ray et al., 2019). This will make retaining existing customers difficult, as they will always want to try out new technology, products, and services. Second, the steady growth in the industry also needs to be sustained in the future. Information systems (IS) scholars have used different theoretical models and frameworks and applied qualitative, quantitative, and mixed research methods to explore the initial usage and acceptance variables of FDAs (e.g., Elvandari et al., 2018; Gunden et al., 2020; Mehrolia et al., 2021; Roh and Park, 2019; Yeo et al., 2017), but they do not fully account for changes in use behaviors far into the future. Though, the long-term success and viability of a technology are determined by continued future use rather than initial adoption or usage (Bhattacherjee, 2001). Therefore, it is imperative that FDA service providers and restaurant ensure the continued usage of the FDAs during and after the pandemic (Kumar and Shah, 2021). However, studies investigating the influential factors of continued usage intentions of FDAs are scarce (e.g., Alalwan, 2020; Kaur et al., 2021). Only few studies have investigated the determinant factors that influence users' continuous usage of FDAs in general (Alalwan, 2020; Cho et al., 2019; Lee, 2019; Lee et al., 2019) and during the COVID-19 pandemic in particular (Al Amin et al., 2021; Kumar and Shah, 2021; Zhao and Bacao, 2020). Still, most FDAs' studies mainly focus on the technological benefits or limitations perspectives of these apps (Roh and Park, 2019), reported contradicting as well as mixed findings, did not account for all factors that capture the unique context of FDAs continuous usage, and none of the reviewed FDAs continuous usage studies examined the impact of continuous intention on the actual usage of FDAs. Hence, investigating influential factors of continued usage intentions of FDAs is crucial for all of the stakeholders of the FDAs ecosystem. Also, the current situation of pandemic, recurring waves and increased number of COVID cases, new virus variants in countries across the world, the risk of further lockdowns, curfews, quarantines, and mobility restrictions (Kumar and Shah, 2021) makes the study more relevant.

The objectives of this study are in twofold. First, since limited research has been done on FDAs and it has only recently begun to attract the attention of scholars (e.g., Alalwan, 2020; Kaur et al., 2021; Ray et al., 2019), this study attempts to develop and validate a theoretical model to investigate users' continuance intention to use FDAs during COVID-19 pandemic, by incorporating factors, which capture the unique context of FDAs continuous usage, such as convenience, perceived compatibility, delivery experience, and online reviews. Moreover, it is evident that there is a research gap exists in assessing users' continuous usage of these platforms (Alalwan, 2020), especially under pandemic conditions (Zhao and Bacao, 2020); hence, this study will enrich the FDAs literature. Second, even though the use of FDAs is growing and started to attract considerable interest in Kuwait, issues related to these platforms have not been studied and tested by scholars and researchers. Previous studies explored the adoption, use intentions, or continuous usage of FDAs in several countries such as China (Cho et al., 2019; He et al., 2019), Colombia (Correa et al., 2019), India (Kumar and Shah, 2021; Ray et al., 2019), Indonesia (Elvandari et al., 2018), Jordan (Alalwan, 2020), Malaysia (Yeo et al., 2017), South Korea (Roh and Park, 2019), USA (Gunden et al., 2020). However, successful scenarios of users' continuance intention to use FDAs cannot be directly used in different cultural contexts, due to the varying market constraints in terms of economic, infrastructure, and social as well as cultural aspects

(Slade et al., 2014, p. 861); then examining this topic in the context of Kuwait, where to date, and to the best of the researcher's knowledge, no similar research study has been conducted, is an important contribution. Thus, the research question of this study is: *What are the factors that influence users' continuous usage of FDAs in Kuwait?* To answer this question, this study proposes a novel model to uncover the factors that determine the continuous intention to use FDAs from the perspective of Kuwaiti customers. Therefore, this study will empirically test this model in the Kuwaiti context.

The selection of Kuwait as the context of this study was due to the following reasons. First, FDAs are a promising sector in Kuwait by comparison with other neighboring Gulf Council Countries (GCC). In fact, "Kuwait is one of the most interesting markets in the Middle East and North Africa region, as it influences purchases all across the GCC [⋯] Despite being a small market, Kuwait has amongst the highest adoption rates of new technology and highest revenue per user for tech companies." (Global Finance, 2020). Second, Kuwait population used FDAs more frequently for a number of reasons such as real risk of getting infected, paranoia of the situation, limited access time to physical stores, long waiting times at the cashier, long queue of people waiting to enter the stores, as only limited number of customers are allowed to enter at the same time. Third, as of September 2021, there are more than 4,000 restaurants in Kuwait, excluding multiple branches and cafes (Zawya, 2021), and approximately 3,600 of which already joined Talabat (Talabat, 2021). Finally, according to Kuwait Foundation for the Advancement of Sciences (KFAS), mobile penetration stands at 146.6% - it is relatively higher than most developed countries and the world average of 64.5%, ownership of smartphones is also high at 99.7% of households, mobile network infrastructure is well developed and 100% of land area and population is covered, while 4G LTE network has 97% coverage, 8 out of 10 households have access to the internet - the remaining non-internet households' access internet through their mobile phones, and the penetration of mobile broadband in Kuwait is healthy at 66.8% (KFAS, 2019).

The paper is organized as follows: the next section presents a literature review on online food delivery (OFD) and food delivery apps (FDAs), followed by the research model and hypotheses development. Next, the research methodology, data analysis and results will be addressed. Finally, the study findings will be discussed, and the implications of the study, limitations and future research directions will be provided.

Ⅱ. Literature Review

Information systems (IS) scholars have used different theoretical models and frameworks, in their FDAs studies, such as the technology acceptance model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT) model, task-technology fit (TTF), the theory of planned behavior (TPB), the theory of consumption values (TCV), uses and gratification (U&G) theory, and expectation-confirmation model (ECM), and apply qualitative, quantitative, and mixed research methods. For example, Alagoz and Hekimoglu (2012) found that usefulness, innovativeness, and trust shaped customers' attitudes towards online food delivery (OFD). Also, Nejati and Moghaddam (2013) concluded that OFD is driven by both utilitarian and hedonic motivations. Okumus and Bilgihan (2014) studied smartphone users' intention in ordering food. The authors found that perceived usefulness, ease of use, perceived enjoy-

ment, self-efficacy, and social norms are the main influential. In their qualitative studies Pigatto et al. (2017); Maimaiti et al. (2018), focused mainly on the opportunities and challenges of OFD in Brazil and China. Kapoor and Vij (2018) confirmed the impact of mobile apps features, such as visual design, information design, navigational design on customers intention to use OFD. Lee et al. (2017) extended the TAM and concluded that perceived usefulness and ease of use influence consumers' attitudes toward FDAs. Based on the contingency framework and extended model of IT continuance Yeo et al. (2017), found that convenience motivation, post-usage usefulness, hedonic motivation, price and time-saving orientation, previous purchase experience, and attitudes influence behavioral intention toward FDAs. The authors also emphasized the positive association between FDAs' ability to save customers' time and money and the customers' perception of usefulness and ease of use.

Elvandari et al. (2018) suggested that order conformity, cleanliness of food box, excellent condition of the received ordered food, politeness and friendliness of delivery staff, and affordable delivery costs influence customers' behavioral intention toward FDAs. The authors also confirmed that the training of delivery staff and periodic evaluations of service performance serve as significant predictors of effective delivery. Okumus et al. (2018) examined customers' intention to use mobile diet apps and found that users' performance expectancy, effort expectancy, social influence, facilitating conditions, and personal innovativeness affect users' behavioral intentions. Kang and Namkung (2019) illustrated that customers' attitudes and behavioral intentions to order food products are significantly impacted by information quality, perceived usefulness, perceived ease of use, source credibility, and customer trust. Besides, He et al. (2019) reported that food quality, preparation time, the takeaway time, and duration of online ordering are significant predictors of the agent-based food ordering model. However, Correa et al. (2019) stated that traffic conditions had no association with transaction volume and delivery time fulfillment, except for some mild association between early deliveries and customer reviews.

Roh and Park (2019) confirmed the positive influence of usefulness and compatibility on the intention to use FDAs. The authors also suggested that married South Korean people are more reluctant to convert their basic tendencies into actual adoption intention towards FDAs than single people. Using the U&G theory, Ray et al. (2019) reported key gratifications associated with FDAs, such as ease of use, delivery experience, customer experience, and convenience. The study findings demonstrated that customer experience, ease of use, and listing and searching for restaurants have significant influences on purchase intentions toward FDAs. Gunden et al. (2020) suggested that mindfulness along with impulse buying tendencies influence customers' intentions to use FDAs. Additionally, Troise et al. (2020) integrated TAM and TPB and found that personal attitude, subjective norms, trustworthiness, and the perception of risks are positively associated with the behavioral intentions to use FDAs during COVID-19 pandemic. In the same vein, Mehrolia et al. (2021) proposed that customers with high perceived threat during COVID-19, less product involvement, less perceived benefit on food delivery, and less frequency of online food orders are less likely to order food through FDAs. Kaur et al. (2021) applied the theory of consumption values (TCV) to investigate the values that drive food-delivery application (FDA) use. The authors found that that epistemic value ("visibility") is the main driver of purchase intentions toward FDAs, followed by conditional ("affordances"), price, and social value ("pres-

tige"). However, the findings show that food-safety concerns and health consciousness did not share any statistically significant association with purchase intentions toward FDAs.

Furthermore, few research studies have identified various factors that might influence users' behavioral intentions to continue using FDAs. For example, Lee et al. (2019) used the UTAUT2 and found that information quality, habit, and social influence play crucial role in continued usage intentions of FDAs. Cho et al. (2019) reported that convenience, trustworthiness, design, various food choices are essential FDAs' attributes that influence users' perceived value, attitudes and continuous usage. The authors also found that single-person households were more concerned about quality attributes represented by a variety of food choices, trustworthiness and price, while multi-person households were more concerned about convenience, trustworthiness and design. Lee (2019) found that satisfaction is positively correlated with FDAs repurchase intentions. However, in Korea, customers' satisfaction with FDA was predicted by reliability, responsiveness, promptness, and food quality, while in China, cost-effectiveness, promptness, responsiveness, and food quality were more important in predicting customers' satisfaction with FDA. Further, Alalwan (2020) confirmed the role of online review, online rating, online tracking, performance expectancy, hedonic motivation, and price value on e-satisfaction and continued intention to reuse FDAs.

Zhao and Bacao (2020) integrated the UTAUT, ECM, and TTF model and found that satisfaction, perceived task-technology fit, trust, performance expectancy, social influence, and confirmation are significant factors associated with the continuous usage intentions of FDAs during the COVID-19 pandemic. In the same vein, based on the TPB, Al Amin et al. (2021) examined the impact of social isolation, food safety, delivery hygiene, subjective norms, dining attitudes, and behavioral control on behavioral and continuous intention to use FDAs during COVID-19 pandemic. The study findings showed that delivery hygiene, subjective norms, attitudes, and behavioral control were related to both behavioral and continuance intention to use FDAs. However, perceived food safety was related to behavioral intention and social isolation was related to continuance intention. The results also showed that behavioral intention mediated the impact of perceived food safety, delivery hygiene, attitudes, and behavioral control on continuance intention. Further, Kumar and Shah (2021) used the theoretical lens of the pleasure arousal dominance (PAD) framework to investigate the role of app aesthetics in evoking emotions which predict continued usage intentions for FDAs. The results demonstrated that app aesthetics generate pleasure, arousal, and dominance emotions among customers during the pandemic where pleasure is the most significant predictor of continued usage intentions followed by dominance. The findings also confirmed the mediating effect of arousal on pleasure and pleasure on continued usage intentions.

While these studies yield interesting findings on FDAs, limited research has been done and it has only recently begun to attract the attention of scholars (Ray et al., 2019). Most FDAs' studies mainly focus on the technological benefits or limitations perspectives of these apps (Roh and Park, 2019). Further, the literature review clearly indicates a research gap that exists in assessing users' continuous usage of these platforms (Alalwan, 2020), especially during the COVID-19 pandemic (Zhao and Bacao, 2020). Apart from very few studies, the vast majority of FDAs' studies investigate the behavioral usage intention rather than the continuous usage. However, initial technology acceptance or usage has not naturally translated

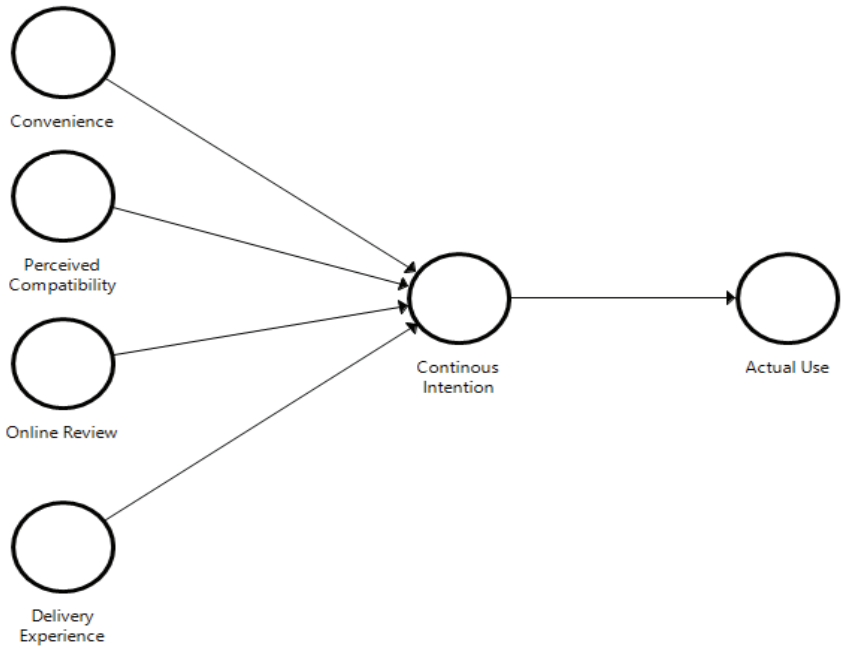
into the continued use of technology, evidenced by the phenomenon that some users accepted the technology initially but discontinued its use at a later stage (Dai et al., 2020; Rabaa'i et al., 2021; Rabaa'i and Abu ALMaati, 2021). For instance, it is argued that users' intention to use a technology suggests only their positive attitude toward the technology and their affiliated desire to use it (Huang, 2019), but does not necessarily guarantee their continued use of it (Wang et al., 2019). Therefore, users will continue to use the technology as long as it satisfies their expectations (Huang, 2019), and will stop using the technology when it neither matches their expectations nor fulfills their needs (Bhattacherjee, 2001). Besides, none of the FDAs continuous usage studies examined the impact of continuous intention on the actual usage of FDAs. Moreover, while there is a consensus in the prior literature on the impact of convenience, perceived compatibility, online reviews and delivery experience on users' behavioral intentions toward FDAs, only Alalwan (2020) examined the influence of online reviews on continuous intention to reuse these apps. As such, research is needed to investigate how these factors might predict users' continuous usage of FDAs. Finally, to the best of the researcher's knowledge, FDAs were studied in Arabic countries once by Alalwan (2020), who studied these apps in Jordan. Hence, it is worth studying the continuous usage intention of these apps in an Arabic country like Kuwait.

Ⅲ. Research Model and Hypotheses Development

This study proposes a new model to examine the underlying factors affecting the continuous intention to use as well as the actual use of food delivery apps (FDAs). The conceptual model is presented in <Figure 1>. Below, each construct is defined, and a theoretical rationale for the model's causal relationships is discussed.

3.1. Convenience (CON)

One the main benefits of mobile shopping apps are related to convenience, flexibility, ubiquity, personalized offers, and faster shopping experiences (e.g., Chopdar and Balakrishnan, 2020; McLean et al., 2020). In online grocery shopping, Morganosky and Cude (2000) and Hagberg and Holmberg (2017) reported that the primary reasons for consumers to buy grocery online are convenience and time saving. The author identified a number of factors for customers to buy groceries online instead of traditional grocery shopping including avoidance of product picking and delivery, time saving, and easiness to order groceries online. Ramus and Nielsen (2005) postulated that customers are willing to engage in online grocery shopping because of different reasons including: convenience of shopping, range of available products, time and energy savings by avoiding driving to the store and bargains and cost savings. Further, Huang and Oppewal (2006) reported that the travel time to a physical store was an important factors for customers to choose online grocery shopping over the traditional grocery shopping. In online food delivery, Yeo et al. (2017) suggested that the behavioral intention towards using online food delivery was strongly associated with their perceived convenience. The authors emphasized that "consumer perceptions become positive when they are able to avoid dealing with the physical burden of traveling" (Yeo et al., 2017, p. 157). In their study concerning why do people use FDAs, Ray et al. (2019, p. 225) argued that FDAs can provide customers with the convenience to compare food prices from different restaurants, avoid wait-



<Figure 1> The Research Model

ing time at restaurants, and also enable customers to avoid traffic-related situations. Prior studies confirmed the significant positive association between convenience and behavioral intentions in food delivery services (e.g., Cho et al., 2019; Correa et al., 2019; He et al., 2019; Ray et al., 2019; Roh and Park, 2019; Yeo et al., 2017). Similarly, studies in contexts other than FDAs also suggest that convenience influences behavioral intentions in mobile payments (e.g., Singh et al., 2020; Zhao et al., 2019), mobile apps adoption (Mehra et al., 2020), mobile shopping (e.g., Chopdar et al., 2018; Chopdar and Sivakumar, 2019), mobile tourism (Ozturk et al., 2016), and mobile grocery delivery apps (Rabaa'i, in press b). Thus, it is rationale to argue that if FDAs enable customers to order food more effectively and efficiently, by reducing the waiting time and avoiding traffic as well as comparing meal prices from different restaurants, potential users will perceive such technology to be useful and convenient; this, in turn, will motivate their continuous usage intention. Accordingly, the study proposed the following hypothesis:

H1: Convenience would predict the continuous intention of using FDAs.

3.2. Perceived Compatibility (PC)

PC refers to the degree to which a technology is perceived consistent with the values, needs or lifestyle of users (Ozturk et al., 2016; Rogers, 2003). Karahanna et al. (2006) suggested that the PC of one's lifestyle with a technology, that is related to prior experience and values, has a direct influence on behavioral intentions towards that technology. Su et al. (2018) argued that PC is an important factor for behavioral intentions towards a technology, as it can reduce the potential doubt of using it; by ensur-

ing that the innovation is not distant from users' current value systems. This study defines PC as the extent to which FDAs are consistent with users' lifestyle and the way (s)he likes to shop. Previous studies support the significant relationship between PC and behavioral intentions towards different technologies, such as: mobile banking (Hanafizadeh et al., 2014), mobile payments (e.g., Oliveira et al., 2016; Ramos De Luna et al., 2016), mobile TV (Leung and Chen, 2017), mobile wallets (Chatterjee and Bolar, 2019; Chawla and Joshi, 2019), mobile commerce (Marinković et al., 2020), and Online-to-offline (O2O) food delivery services (Roh and Park, 2019). As such, the current study argues that if FDAs users perceived such apps to be consistent with their lifestyles, they will be motivated to continue using them in the future. Therefore, the study hypothesizes that:

H2: Perceived compatibility would predict the continuous intention of using FDAs.

3.3. Online Review (OR)

FDAs enable customers to create and share their reviews and feedback about the restaurants they ordered food from; this can then be used by other customers when ordering food through FDAs (Alalwan, 2020). Qahri-Saremi and Montazemi (2022); Hong et al. (2018) argued that these online reviews are considered as a form of electronic word-of-mouth (eWOM) communication. Online reviews are short textual comments expressing customers' experience with a company (König et al., 2022). They are defined as "peer-generated evaluations about products or services posted on retailer or third-party websites." (Hong et al., 2018, p. 1). That is, online review can be functional (reporting on service efficiency) or emotional (express feelings about the service experience in the restaurant through effective words (Aureliano-Silva et al., 2021, p. 1758). Customers consider these reviews as an important factor when purchasing a product (Alalwan, 2020), or evaluating alternatives on the same online platform (Aureliano-Silva et al., 2021). Online reviews were associated with product sales (Wang et al., 2022), formulate customers' opinion (Cheung et al., 2008), and facilitate customers' decision making (Hu et al., 2008). Prior studies confirmed the significant positive association between online reviews and behavioral intentions in various contexts, such as in online shopping (Elwalda et al., 2016), travel intentions (Hong et al., 2018), hotel choice (Yen and Tang, 2019), FDAs (Alalwan, 2020), and restaurant visit intention (Aureliano-Silva et al., 2021). Thus, it is rationale to argue that the credibility, relevance, and usefulness of the online reviews, posted on FDAs, will promote the continuous usage of these platforms in the future. Accordingly, the study hypothesizes that:

H3: Online reviews would predict the continuous intention of using FDAs.

3.4. Delivery Experience (DE)

Delivery experience refers to the experience of food delivery when ordered using FDAs. The feature of global positioning system (GPS) functionality to provide location-based services is one of the main features of mobile apps (McLean et al., 2020). Location-based services offered by mobile devices and smartphones encompass a number of features, such as route guidance, location-aware directory services, tracking map, and tracking order status (Gutierrez et al., 2019). Integrating GPS with location-based services can enable the "precise location and, when linked to communication and computational components, they can transmit

locations and do location-based computations." (Shugan, 2004, p. 473). This will enable customers to locate the delivery address on a map. Further, these services provide customers with the ability to track the delivery in real time as well as the provision to view the estimated delivery time (Ray et al., 2019) and eliminating phone calls to service providers to ask about the order status time (Alalwan, 2020). Previous studies found that customers' delivery experience motivate their behavioral intentions to use online food ordering platforms (e.g., Alalwan, 2020; Kim and Tanford, 2019; Maimaiti et al., 2018; Ray et al., 2019; Suhartanto et al., 2019; Yeo et al., 2017). Delivery experience was also found to be significant in motivating users' purchase intentions in performing arts (Hume, 2008) and internet shopping (Kim et al., 2012). As such, in line with Ray et al. (2019, p. 225), customers' delivery experience includes the ability to track the delivery in real time, view estimated delivery time, locate the delivery address on a map, and get free delivery for some items. This study argues that these features will motivate FDAs users to continue using them in the future. Consequently, the study posited the following hypothesis:

H4: Delivery experience would predict the continuous intention of using FDAs.

3.5. Continuous Intention (CI)

Continuous intention (CI) is defined as "users' intention to continue using the information system" (Bhattacherjee, 2001, p. 354). Further, Dehghani et al. (2018, p. 484) defined continuous usage intention as "a user's intention to continuously use the instant product or service currently being used." Dehghani and Tumer (2015) argued that that the behavioral intention represents a significant action that leads to actual behaviors. Earlier studies showed that CI has a significant influence on the actual use of different technologies (e.g., Al-Emran et al., 2020; Alshurideh et al., 2020; Dehghani et al., 2018; Joo et al., 2016). Therefore, the study hypothesizes that:

H5: Continuous intention would predict the actual use of FDAs.

Ⅳ. Methodology

To test the hypotheses presented in the conceptual model (<Figure 1>), a survey-based instrument, that includes items for all constructs in the model, was employed to collect the needed empirical data. This section describes the measurement items, the study sample and the data collection procedure.

4.1. Measurement Instrument

The measurement instrument consisted of 20 items and measured 6 research constructs: convenience, perceived compatibility, online review, delivery experience, continuous intention, and actual use. To measure the proposed constructs in the research model, questionnaire items were adapted from relevant previous studies with minor modifications in the wording of the items to suit the FDAs context. The scales were all rated on 7-point Likert scales (1 = strongly disagree, 7 = strongly agree), unless otherwise specified.

Convenience (CON) was measured using three items derived from Ray et al. (2019). For measuring perceived compatibility (PC), all three items were adapted from Roh and Park (2019). The online review (OR) construct, having four items, was adapted from Alalwan (2020). Delivery Experience (DE) was measured using four items derived from Ray et al. (2019).

To measure continuous intention, this study referred to Bhattacherjee (2001). Finally, the three items used to measure actual use (use frequency) were inspired by Venkatesh et al. (2012). The complete list of measurement items used in this study is reported in <Table 1>.

4.2. Pilot Test

To further check the quality of the measures and the questionnaire's reliability and validity, a pilot survey we conducted with 26 participants through convenience sampling. The participants confirmed that the questionnaire was easy, clear and did not require much time to be filled. Cronbach's alpha was used to check the reliability of the constructs' scale used. Values for all constructs were higher than 0.70 as suggested by Nunnally and Bernstein (1994). Therefore, the questionnaire was then employed for data collection. Data from the pilot survey were not included in the final data analysis.

<Table 1> The Constructs, Measurement Items and Sources

Constructs	Items		Sources
Convenience (CON)	CON1	During the COVID-19 pandemic, FDAs provide me with the convenience to compare meal prices from different restaurants.	Ray et al. (2019).
	CON2	During the COVID-19 pandemic, FDAs help me to avoid traffic.	
	CON3	During the COVID-19 pandemic, FDAs help me to avoid waiting time at restaurants.	
Perceived Compatibility (PC)	PC1	Using FDAs fits well with my lifestyle during the COVID-19 pandemic.	Roh and Park (2019).
	PC2	Using FDAs is compatible with my current situation during the COVID-19 pandemic.	
	PC3	Ordering food using FDAs fits well with the way I live my daily life during the COVID-19 pandemic.	
Online Review (OR)	OR1	The information from online reviews provided in FDAs was credible.	Alalwan (2020).
	OR2	The information from online reviews provided in FDAs was relevant to my needs.	
	OR3	The quantity of information provided in FDAs was sufficient to satisfy my needs.	
	OR4	The information provided in online reviews of FDAs was helpful for me to evaluate the food.	
Delivery Experience (DE)	DE1	I like the FDAs' provision for locating the delivery address on the map	Ray et al. (2019).
	DE2	I like the FDAs' provision of free delivery for specific orders	
	DE3	I like the FDAs' provision to know about the estimated time of delivery	
	DE4	I like the FDAs' provision for tracking the delivery on real-time	
Continuous Intention (CI)	CI1	I plan to continue using FDAs during the COVID-19 pandemic.	Bhattacherjee (2001).
	CI2	I will keep using FDAs during the COVID-19 pandemic.	
	CI3	I will always try to use FDAs in my daily life during the COVID-19 pandemic.	
Actual Use (AU)	*During the COVID-19 pandemic, how often do you use FDAs for each of the following activities?* (a 7-point use frequency scale was used to measure (AU) items).		Venkatesh et al. (2012).
	AU1	Search for restaurants	
	AU2	Compare food/restaurants	
	AU3	Order food	

4.3. Sample and Data Collection

The data was collected in the State of Kuwait during the COVID-19 pandemic. The data have been collected through an online questionnaire distributed to the participants via Google Forms. Due to government restrictions and the imposed curfew paper-based (offline) data collection was not possible during the pandemic. The survey questionnaire was written in English language. Data for this research study were collected by sending an email invitation with a link to the online questionnaire to students, alumni, faculty members, staff, at a private American university, and they were also asked to forward the invitation to their friends and relatives. Also, random people, outside university and academic context, were also invited to take part of this study. Finally, to reach as many respondents as possible, the online questionnaire was distributed via different social media channels (e.g., WhatsApp, Instagram, LinkedIn, Facebook) to the researcher's contacts who reside in Kuwait.

Since the population size of this study is unknown, a convenient sampling method was adopted (e.g., Liébana-Cabanillas et al., 2018; Rabaa'i et al., 2021; Sharma et al., 2019). In order to ensure the credibility of this study, all the participants, who were selected for the survey, were actual FDAs users. The screening question: "Do you use FDAs when ordering food?" was used in order to minimize the hypothetical response biases from respondents who do not use FDAs. Respondents who answered 'no' were filtered out and excluded from this study. A total of 387 questionnaires were collected. Of the submitted questionnaires, 76 were excluded through the screening question, leaving 331 usable survey responses. SPSS 20 was used to perform the descriptive statistical analysis.

In the current study, 52% of the respondents were females, and most of the respondents were married (62%). 52% of respondents were bachelor's degree holders. Only (7%) of the respondents were aged between 17-20, while maximum respondents (40%) were in the age group of 21-30. The sample included students and working professionals with approximately (18%) student and (68%) working. Finally, in total, (80%) in the current study had experience using FDAs for more than one year. Detailed descriptive statistics on the respondents' characteristics are shown in <Table 2>.

<Table 2> Demographic Characteristics of Respondents

Demographic Variables		Frequency	Percentage
Gender	Male	159	48%
	Female	172	52%
	Total	331	100%
Age	17 - 20 years	24	7%
	21 - 30 years	133	40%
	31 - 39 years	98	30%
	> 40 years	76	23%
	Total	331	100%
Marital Status	Married	204	62%
	Single	127	38%
	Total	331	100%
Education Level	High school	9	3%
	University student	52	16%
	Bachelor	149	45%
	Postgraduate	67	20%
	Others	54	16%
	Total	331	100%
Employment	Student	61	18%
	Working professionals	225	68%
	Unemployed	45	14%
	Total	331	100%
FDAs Experience	< 1 year	67	20%
	1 - 2 years	46	14%
	2 - 3 years	124	38%
	> 3 years	94	28%
	Total	331	100%

4.4. Controlling Common Method Bias

A common latent factor (CLF), with all indicators of the constructs included in the model, was employed. The CLF produced a value of 0.5208. To calculate the common method variance, 0.5208 was squared, which yields a value of 0.271 (2701%). A value which falls below the recommended 50% (McLean et al., 2020), suggesting the unlikelihood of CMB in this study.

Ⅴ. Data Analysis and Results

The research model of this study was analyzed using Partial Least Squares of Structure Equation Modeling (PLS-SEM) using SmartPLS 3.2.9 software (Ringle et al., 2015). PLS-SEM can test complex cause-effect relationships (Hair et al., 2019; Henseler et al., 2016). Hence, PLS-SEM was used in this study to assess and validate the proposed model and the hypothesized relationships among the constructs (e.g., Alam et al., 2020; Hair et al., 2014; Hair et al., 2017a; Hammouri et al., 2022; Rabaa'i et al., 2015; Rabaa'i, 2017b; Rabaa'i et al., 2015, 2018, 2021; Rabaa'i and Zhu, 2021; Rabaai and Gable, 2012; Zogheib et al., 2015). This study followed the recommendation of Hair et al. (2017a) to analyze the data in two steps: the measurement model and the structural model.

5.1. Measurement Model

In order to validate the measurement model, this study investigated multi-collinearity, internal reliability, convergent validity and discriminant validity criteria (Hair et al., 2017a). In this study, to test for multi-collinearity, Variance Inflation Factors (VIF) scores were derived. As shown in <Table 3>, all VIFs were less than 10, the recommended heuristics (Gefen et al., 2011), indicating that multi-collinearity was not an issue with this data set. Internal reliability is assessed using Cronbach's alpha (CA), and composite reliability (CR) (Hair et al., 2017a). <Table 3> shows that the CA values for all constructs are above the threshold measurement of 0.7; CR values were also above the recommended threshold of 0.85 (Hair et al., 2019; Henseler et al., 2016), indicating strong internal consistency reliability. Factor loadings (FL) and the average variance extracted (AVE) were used to assess the convergent validity. Hair et al. (2017b) suggested that FL and AVE values of each construct should be greater than 0.7 and 0.5, respectively. As shown in <Table 3>, in this study, FL ranging from 0.750 to 0.967, exceeded the expected threshold of 0.7. The AVE of all constructs in this study, ranging from 0.727 to 0.916, fulfilled the rule of thumb of Hair et al. (2017a), meaning that the constructs in this research explain more than 50% of the variance of their indicators (Henseler et al., 2009).

Discriminant validity is "the extent to which a construct is empirically distinct from other constructs in the path model" (Sarstedt et al., 2014, p. 108), and can be assessed by the Heterotrait-Monotrait (HTMT) criterion as recommended by Henseler et al. (2015). HTMT refers to "the mean value of the item correlations across constructs relative to the (geometric) mean of the average correlations for the items measuring the same construct" (Hair et al., 2019, p. 9). The results shown in <Table 4> demonstrated that all the HTMT values were lower than the recommended threshold 0.90, thus confirming the discriminant validity of all constructs in this study (e.g., Alam et al., 2020; Hair et al., 2017a; Rabaa'i et al., 2021; Rabaa'i and Abu ALMaati, 2021; Rabaa'i and Zhu, 2021).

5.2. Structural Model

After assessing the reliability and validity of the

<Table 3> Items Loading, p-Value, Cronbach's Alpha, VIF, Composite Reliability, and AVE

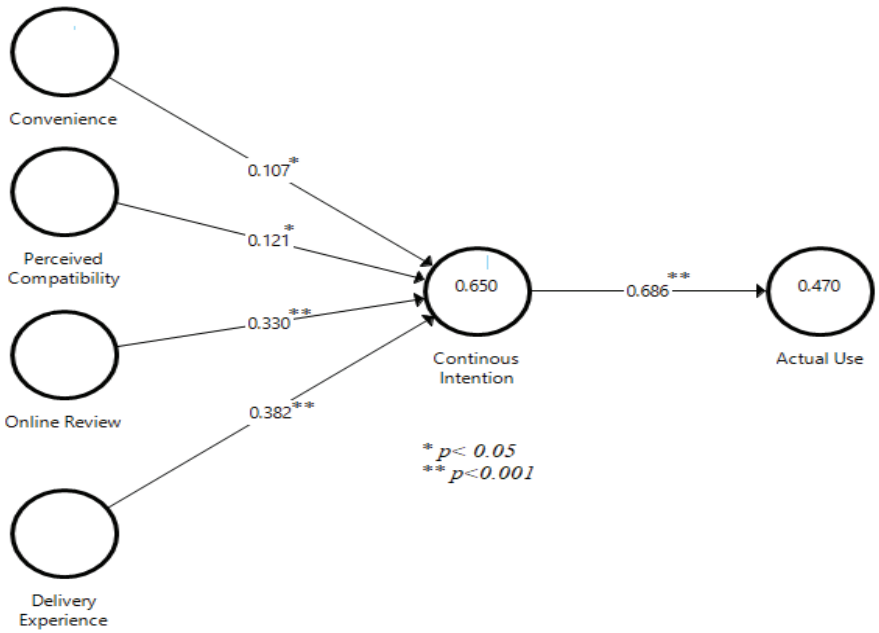
Items	Loading	p-Value	Cronbach's Alpha	VIFs	Composite Reliability	AVE
Convenience (CON)			0.954		0.970	0.916
CON1	0.967	0.000		8.245		
CON2	0.956	0.000		8.218		
CON3	0.936	0.000		3.842		
Perceived Compatibility (PC)			0.875		0.923	0.800
PC1	0.889	0.000		2.242		
PC2	0.904	0.000		2.516		
PC3	0.891	0.000		2.381		
Online Review (OR)			0.874		0.914	0.727
OR1	0.826	0.000		1.920		
OR2	0.824	0.000		1.987		
OR3	0.901	0.000		1.969		
OR4	0.858	0.000		2.470		
Delivery Experience (DE)			0.917		0.942	0.801
DE1	0.857	0.000		2.261		
DE2	0.885	0.000		2.758		
DE3	0.930	0.000		4.274		
DE4	0.908	0.000		3.763		
Continuous Intention (CI)			0.841		0.906	0.764
CI1	0.750	0.000		1.415		
CI2	0.929	0.000		4.178		
CI3	0.931	0.000		4.203		
Actual Use (AU)			0.912		0.944	0.850
AU1	0.911	0.000		2.501		
AU2	0.915	0.000		3.696		
AU3	0.938	0.000		4.238		

<Table 4> Hetrotrait-Monotrait Ratio (HTMT) Test

	AU	CI	CON	DE	OR	PC
CI	0.775					
CON	0.701	0.658				
DE	0.682	0.807	0.559			
OR	0.832	0.834	0.671	0.701		
PC	0.741	0.739	0.678	0.633	0.805	

measurement model, the study then assessed the hypotheses using the structural model (e.g., Hair et al., 2017a; Hair et al., 2019; Hollingsworth, et al., 2017; Henseler et al., 2009; Henseler et al., 2016; Rabaa'i, 2017a; Rabaa'i et al., 2015). The assessment of the structural model entails: determination of coefficient (R^2), predictive relevance (Q^2), effect size estimates (f^2) and estimates for path coefficients (β) (e.g., Chin, 2010; Hair et al., 2019; Hair et al., 2017a; Henseler et al., 2016). The structural model is depicted in <Figure 2>.

The research model of this study explained 0.650 of the variance in continuous intention, and 0.470 in actual use, indicating the ability of the model to explain 65% and 47% of the variance (R^2) in con-



<Figure 2> The Structural Model

tinuous intention and actual use respectively. Predictive relevance (Q^2) values were also evaluated by running the blindfolding procedure and calculated using the cross-validated redundancy approach. The findings show that the predictive relevance (Q^2) values, for continuous intention to use FDAs (0.474), and actual use (0.377), are all bigger than zero as suggested by Chin (2010). This indicates that the model has a significant predictive relevance. Additionally, effect size estimates (f^2) were calculated to test whether a specific independent variable has a substantive impact on a dependent variable. <Table 5> shows the effect sizes' results. Based upon Kenny (2018) guideline, standard effect size are 0.005, 0.01, and 0.025 for small, medium, and large respectively, the results show that the f^2 for the supported hypotheses were acceptable.

A nonparametric bootstrapping procedure with 5,000 samples was employed to examine the significance levels of path coefficients (Hair et al., 2019; Hair et al., 2017a). <Table 5> presents the path coefficient, t-statistics and p-values for the proposed

<Table 5> Hypotheses' Path Coefficients, t-Statistics, and p-Values

Relationship	Hypothesis No.	β	Mean	STD	t-Statistics	p-Values	f^2	Remark
CON → CI	H1	0.107	0.109	0.055	1.974	0.025*	0.018	Supported
PC → CI	H2	0.121	0.113	0.057	2.112	0.018*	0.018	Supported
OR → CI	H3	0.330	0.338	0.073	4.516	0.000**	0.125	Supported
DE → CI	H4	0.382	0.380	0.066	5.755	0.000**	0.233	Supported
CI → AU	H5	0.686	0.691	0.039	17.466	0.000**	0.887	Supported

Note: *p < 0.05, **p < 0.001.

hypotheses. The results indicate that convenience (β = 0.107; p < 0.05), perceived compatibility (β = 0.121; p < 0.05), online review (β = 0.330; p < 0.001), delivery experience (β = 0.382; p < 0.001) all have significant relationships with continuous intention to use FDAs; hence, confirming H1, H2, H3 and H4. The results also indicate that continuous intention (β = 0.686; p < 0.001) is a significant predictor of actual use; thus, confirming H5.

The study extends the standard reporting of PLS-SEM by running the Importance-Performance Map Analysis (IPMA). The PLS-IPMA tests the total effect of an exogenous variable on a specific target endogenous variable (i.e., importance) with the averaged latent variable score of the exogenous construct (i.e., performance) (Hair et al., 2017b). This test aims at detecting an exogenous variable that more effectively improved the value of the target endogenous variable (i.e., actual use in this case) with its relatively high importance and low performance (Hock et al., 2010; Rabaa'i et al., 2021; Rabaa'i and Abu ALMaati, 2021; Rabaa'i and Zhu, 2021). As noted in <Table 6>, to predict users' actual use of FDAs, continuous intention has the highest importance (0.796), followed by delivery experience (0.335), and online review (0.281). Yet, in terms of the performance of these constructs to predict users' actual use of FDAs, delivery experience tops the list (85.366), followed by continuous intention (84.106), Perceived compatibility (80.480), and online review (79.340). These results imply that though continuous intention is the most important predictor of users' actual use of FDAs, delivery experience should be the highest priority.

<Table 6> PLS-IPMA Analysis for FDAs Actual Use

	Actual Use	
	Total Effect (Importance)	Index Value (Performance)
Convenience	0.065	74.051
Perceived Compatibility	0.091	80.480
Online Review	0.281	79.340
Delivery Experience	0.335	85.366
Continuous Intention	0.796	84.106

Ⅵ. Discussions, Theoretical and Practical Contributions

6.1. Discussions of Results

This study aimed at investigating the main factors that could influence the continuous usage intention of the of actual FDAs users in the post-adoption phase. This study proposed a novel model to investigate influential factors, that capture the unique context of FDAs continuous usage, such as convenience, perceived compatibility, delivery experience, and online reviews. As discussed in the previous section, constructs' reliability and validity as well as model fit indices and predictive relevance were all achieved. Additionally, the statistical results supported the predictive power of the research model in explaining substantial variance in continuous intention (R^2 = 0.650) and actual use (R^2 = 0.470). Such values of R^2 were within a highly acceptable level, which exceeded all the recommended values in this regard, such as: 40% (Straub and Gefen, 2004) and 30% (Kline, 2016). All study hypotheses were supported with the results. <Table 5> summarizes the results of hypotheses tests.

The study results suggest the following five significant findings. First, it was confirmed that convenience has a strong influence on the continuous usage of FDAs, supporting H1. This result is consistent with the findings of previous studies on food delivery services (e.g., Cho et al., 2019; Correa et al., 2019;

He et al., 2019; Ray et al., 2019; Roh and Park, 2019; Yeo et al., 2017). This finding implies that users who find FDAs to be convenient in reducing the waiting time, avoiding traffic, and comparing food prices from different restaurants will be driven to use these platforms in the future. Second, the study results demonstrated that perceived compatibility is a strong predictor of users' continuous usage of FDAs, affirming H2. This result is similar to what was reported by Roh and Park (2019) in their study concerning Online-to-offline (O2O) food delivery services. This result can be interpreted as FDAs users who perceived the use of such platforms to be consistent with their lifestyles and the way they like to shop will be more motivated to continue using these apps.

Third, similar to the findings reported by Alalwan (2020) and Aureliano-Silva et al. (2021), online reviews were found to have a significant positive influence on continuous intention to use FDAs, supporting H3. Thus, the credibility, relevance, and usefulness of the online reviews, posted on FDAs, will promote users' continuous usage of these platforms in the future. Fourth, the results of this study reveal that FDAs provisions to track the delivery in real time, view estimated delivery time, locate the delivery address on a map, and get free delivery for some items positively influences the continuous usage intentions; hence, confirms H4. These results are supported by prior food delivery services studies (e.g., Alalwan, 2020; Kim and Tanford, 2019; Maimaiti et al., 2018; Ray et al., 2019; Suhartanto et al., 2019; Yeo et al., 2017) and imply that users who have positive delivery experience, when ordered food through FDAs, will be more motivated to continue using these apps in the future. Finally, it was demonstrated that continuous intention to use FDAs is positively associated with the actual use of such platforms. This finding is in line with prior studies (e.g., Al-Emran et al., 2020; Alshurideh et al., 2020; Dehghani et al., 2018; Joo et al., 2016), and it implies that the continuous intention to use FDAs will lead to the actual use of these platforms.

6.2. Theoretical Implications

This study makes several theoretical contributions. First, this study presented a novel model that significantly contribute to the emerging literature on FDAs by investigating the influence of convenience, perceived compatibility, delivery experience, and online reviews on the continuous usage intention of actual users. Second, the validated model's constructs of this study demonstrated that these determining factors need to be examined when investigating the behavioral intention of FDAs actual users. Third, the proposed theoretical model is developed and validated to extend traditional technology acceptance and adoption theories, which have investigated users' adoption of FDAs mainly from technological benefits or limitations perspectives (e.g., effort expectancy and facilitating conditions) (Roh and Park, 2019). Fourth, this study contributes to Kuwaiti literature context by focusing on FDAs, which is, to the best of the researcher's knowledge, the first study that empirically validated the continuous usage of such platforms in a developing country- Kuwait. Finally, with the high predictive relevance of (Q^2 = 47.7%) and variance explained (R^2 = 65%) in the continuous intention to use FDAs, the empirical results of this study provide evidence that the proposed model can be adapted to different types of delivery services such as grocery delivery apps.

6.3. Practical Implications

This study has three practical implications. First,

given the important roles of convenience and perceived compatibility in predicting continuous intention to use FDAs, service providers and restaurant owners should pay a great attention to advertising and marketing campaigns to spread the awareness of such apps and to highlight the usefulness and convenience of such platforms in ordering food. Additionally, promotional campaigns, through television, newspapers, social media platforms (e.g., Facebook, Instagram, YouTube) (Alalwan, 2020), should highlight the compatibility of these apps with users' lifestyles. Second, due to the importance of online reviews in predicting the continuous usage of FDAs, service providers and restaurant owners should motivate users to review their experience when ordering food through the platform, as these reviews are valuable for customers and essential for restaurants to improve their performance (e.g., Alalwan, 2020; Aureliano-Silva et al., 2021; Hong et al., 2018). There are various strategies FDAs service providers and developers could use to improve and facilitate the online review process, such as following up with the reviews to ensure the credibility, relevance and usefulness of these comments, asking customers to rate how valuable each review is, and allowing customers to easily find the most highly rated restaurants (Filieri, 2015). Additionally, as with a number of other mobile applications (e.g., Amazon shopping), FDAs developers could show that a specific review, posted on the platform, came from a confirmed customer who ordered food before from that restaurant. These strategies will ensure the credibility and trustworthiness of FDAs online reviews (Alalwan, 2020). Finally, given the important role played by delivery experience in influencing users' continuous intention of FDAs, service providers and restaurant owners should promote free delivery for some items. Additionally, FDAs developers should improve the features of the apps that allow users to track the delivery in real time, view estimated delivery time, and locate the delivery address on a map. FDAs developers should also ensure that users have accurate and necessary information related to their orders, such as restaurants' location, distance between restaurant and user's location, and name of the delivery driver (Shareef et al., 2016), as customers could lose trust in the FDAs online tracking ability if these information are inaccurate or unreliable (Alalwan, 2020).

Ⅶ. Limitations and Future Research

This study has a number of limitations that suggest insightful directions for future research. First, this study was conducted in Kuwait, a Middle Eastern rich country, with well-advanced technology infrastructure and a technology savvy citizenry compared to the citizens in many other developing countries (Rabaa'i et al., 2015; Rabaa'i in press a, c; Statista, 2019). Thus, future studies should investigate the proposed model in a cross-country and cross-cultural perspective with additional economic, environmental, and technological factors. Second, the sample for this study was not selected randomly; hence, the results cannot be generalized to a broader population, and are limited to this study sample. Therefore, future studies could be conducted using random sampling technique. Third, this study investigated some factors affected the continuous usage of FDAs but did not consider all determinant factors. Therefore, future research may incorporate additional predictors, such as quality attributes, food safety and hygiene, and perceived mobility, to further extend the scope of the current study. Finally, this study did not investigate the role of moderating factors such as age, gender, marital status, and employment status. As such, future

research should investigate the moderating effect of these variables on the continuous intention and actual use of FDAs.

Ⅷ. Conclusion

This study examined different factors predicting Kuwaiti users' continuous intention as well as actual use of FDAs, where this theme has not been studied in the Kuwaiti context. To fill this gap, this study proposed a novel model that capture the unique context of FDAs continuous usage. To assess the proposed research model, a quantitative survey was employed to collect the needed data. The data was then analyzed using the PLS-SEM approach. The empirical results of this study confirm the significant influence of all factors, namely: convenience, perceived compatibility, delivery experience, and online reviews, on continuous usage. The findings also reaffirm the importance of continuous intention on the actual use of FDAs. The main statistical results of this study supported the predictive validity of the proposed model by accounting for 65% of variance in continuous intention and 47% in actual use of FDAs.

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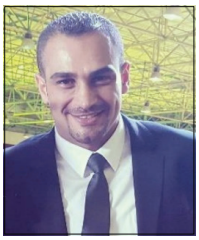

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