

Antecedents of Using the Online Food Delivery Subscription Services

by
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DEDICATION

This dissertation is dedicated to my biggest supporters, my husband, Anas, my daughter, Leyla Noor, and my beloved parents, who supported me during this journey.

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ABSTRACT

Consumers' interest in Online Food Delivery Systems (OFDS), especially in subscription services, has increased recently, leading hospitality scholars to strengthen their interest in understanding the use of subscription services. However, to date, little is known about consumers' intentions to use and loyalty toward OFDS subscription services. The current study addresses this lack of research and examines the antecedents of consumers' intentions to use OFDS services and consumers' loyalty toward OFDS based on benefit and risk.

Study 1 aimed to explicate consumers' intentions to use OFDS subscription services. The study reconstructed the UTAUT2 (Venkatesh et al., 2012). A Confirmatory Factor Analysis (CFA) was conducted to assess the proposed measurement model. Based on the CFA's results, it was concluded that the instrument is characterized by appropriate reliability, convergent, and discriminant validity. A Structural Equation Modeling analysis was used to test the hypotheses using a sample of 573 OFDS users from the U.S. Study 1 found that consumers' intentions to use OFDS subscription services are impacted most strongly by social influences, while effort expectancy and perceived security had relatively lower impacts. Study 1 also confirmed significant relationships between compatibility and performance expectancy and between convenience orientation and effort expectancy.

Study 2 investigated consumers' loyalty toward OFDS subscription services based on Social Exchange Theory (SET) (Blau, 1964). Study 2 elucidated the role of benefit and risk in shaping consumers' loyalty toward OFDS subscription services based on data from OFDS subscribers (262 respondents). Study 2 used CFA to assess the measurement model, and SEM was conducted to test the hypotheses. Study 2 found benefit to be the strongest antecedent of consumers' loyalty toward OFDS subscription services. Benefit was confirmed as a second-order

construct with two dimensions, perceived social benefit and economic benefit. Risk was also confirmed as a second-order construct with three dimensions: perceived privacy risk, perceived performance risk, and perceived overall risk. Specifically, while social benefit was considered the most important aspect of benefit, perceived privacy risk was evaluated as a fundamental concern for consumers while completing food ordering tasks.

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CHAPTER I

INTRODUCTION

Online food delivery systems (OFDS) can be defined as intermediaries between consumers and restaurants (Rivera, 2019). In general, OFDS enable consumers to manage online food ordering tasks from restaurants and handle delivery logistics (Cai & Leung, 2020). OFDS have grown rapidly in the past few years and became a significant restaurant industry segment (Muller, 2018). OFDS offer a channel that brings consumers and restaurants together into a single platform to complete food ordering tasks via websites or mobile applications (Ray & Bala, 2021). In line with the latest trends in consumer behavior, such systems feature a variety of options (e.g., finding a favorite restaurant, a specific food item, or a customized food item) to fulfill consumers' online ordering tasks (Hirschberg et al., 2016). While OFDS revenues totaled \$22 billion in 2019, they are expected to exceed \$42 billion by 2025 in the U.S. and \$230 billion globally (Curry, 2021). To date, consumers can choose among various OFDS such as DoorDash, Grubhub, and UberEATS, which allow consumers to fulfill online food orders by browsing an online menu (DoorDash, 2018a).

By design, OFDS provide special offers (e.g., discounts, complimentary delivery fees, lower service fees) depending on the consumers' location and time of order placement from the restaurants (Rayome, 2020), which persuade consumers to complete their food ordering tasks using such services (Klein, 2019). As the demand for OFDS increased, researchers have studied consumers' behavior toward OFDS in the hospitality literature, such as consumers' intentions to use OFDS (Gunden et al., 2020), moral obligations (Roh & Park, 2019), and time and price savings (Yeo et al., 2017). OFDS have continued to grow and introduced new ways of assisting consumers leading them to utilize more than one service (Perri, 2021). Recently, OFDS launched

subscription services to grow within cities (Rieck, 2020). The development of subscription services has allowed the restaurant industry to generate more revenue from the existing consumer base (McCarthy, 2020).

1.1. The Subscription Services

In the U.S. market, the annual growth of subscription services across various products (e.g., beauty, meal kits, apparel) has exceeded 100% over the last five years, with the revenue generated by subscription services totaling over \$2.6 billion in 2016 (Chen et al., 2018). In general, the popularity of subscription services has increased, thereby changing consumers' purchasing behaviors (Bischof et al., 2019). Along with the growth in IT, subscription services have shifted from being centered on product delivery to offering recommendations based on consumers' previous purchases (Chen & Shang, 2018). As the number of subscription services has increased online, consumers are likely to purchase subscription services available on such platforms to receive customized services (Kim & Kim, 2020). This is because generally, consumers prefer to use mobile platforms the usability and convenience of the service (Lee, 2019). Overall, digital platforms provide customized services, including product recommendations built on consumers' usage data (Rosenbaum, 2011). The subscription services differ based on the products (e.g., predefined, curated, or a surprise selection of products) offered to consumers (Rudolph et al., 2017). Consumers tend to sign up for multiple subscription services, which confirms that the demand for such services has increased as they provide tangible benefits (e.g., lower costs and increased personalization) (Chen et al., 2018). Because subscription services offer benefits to consumers (e.g., automated purchasing, saving time without leaving home, and quick shipping), a loyal consumer segment can eventually emerge as a result of providing a unique purchasing experience (Bischof et al., 2019). In subscription

services, quality is an important factor in the relationship between consumers and firms, affecting consumer retention (Lee, 2019). Accordingly, the benefits of such services help retailers increase their customers' overall lifetime value and profits (McCarthy et al., 2017). Subscription services have become an integral part of OFDS and have been launched by major OFDS (e.g., UberEATS, DoorDash, Postmates, etc.) (Rieck, 2020). Postmates launched its subscription service in 2016 (Lien, 2016), earlier than the other three OFDS. While DoorDash launched its subscription services in 2018 (DoorDash, 2018b), both Grubhub (Bandoim, 2020) and UberEATS (Johnson, 2020) launched their subscription services in 2020.

1.2. OFDS Subscription Services

While consumers navigate multiple platforms, OFDS offer subscription services to incentivize them to continue using their platform (Hanbury, 2019). With the ability to receive benefits from subscription services, consumers are likely to use such services in the OFDS context. Yet, OFDS subscription services are built on the same principles as retail websites, where consumers' primary focus is on placing orders. Consumers cannot ask for a refund from the restaurant once the food items are delivered. Meal kit services (e.g., Blue Apron, Hello Fresh, etc.) are available on the market and offer boxes filled with ingredients that allow consumers to cook at home (Chen et al., 2018). Consumers can also sign up for food subscription services depending on their consumption (e.g., weekly or monthly) (Bischof et al., 2019). Despite the listed meal subscription companies above, OFDS allows consumers to purchase from multiple restaurants from a menu of food items.

As consumers realize the benefits of using OFDS subscription services, they tend to capitalize on unique offers (e.g., discounts, promotions, and complimentary delivery) when they sign up for services (Barkho, 2019). For instance, DoorDash launched a subscription service

called DashPass, which provides free delivery for a membership fee of \$9.99 per month (Rieck, 2020). Subscribers can save an average of \$20 per month while paying low service fees compared to non-subscribers. In addition, subscribers can cancel the service at any time without paying a penalty fee (DoorDash, 2018b). Grubhub named its subscription service “Grubhub+”, which offers 10% cashback per \$1 from member restaurants (Grubhub, 2020). Uber introduced a subscription service called “Eats Pass” that allows consumers to collect points per \$1 from eligible UberEATS purchases (Uber, 2020). Postmates subscription services give consumers access to tickets for special events (Martucci, 2020). The growing interest in OFDS, specifically subscription services, is expected to provide significant implications that may enhance consumers’ online food purchasing experiences and the use of such services. Therefore, it is important to assess the antecedents of using subscription services and gain insight into consumers’ behavioral intentions to use such services.

1.3. Statement of Problem

While research on OFDS is emerging, there is currently a gap in the research on the adoption of OFDS subscription services. Relatedly, research conducted on OFDS (Gunden et al., 2020) validated the antecedents of consumers’ intentions to use OFDS. In the OFDS context, as consumers perceive food ordering interfaces as efficient, they are likely to use such services (Gunden et al., 2020). While no literature discusses intentions to use of subscription services in the hospitality industry, several studies discuss subscription services in the marketing literature, such as content of the platform (Ramkumar & Woo, 2018) and knowledge and cognition (Tao & Xu, 2018). In the marketing literature, the content, quality superiority, ease of use, and price were found to be important determinants of purchasing intentions for subscription services (Horng, 2012). Despite the ongoing research in general marketing literature, the antecedents of

using OFDS subscription services remain unknown. Additionally, consumers may utilize a particular OFDS depending on the benefits (e.g., limited deals on menu items, reduced delivery or service fees) derived from online food ordering tasks. Such benefits might lead consumers to use a particular OFDS. Yet, research has shown that when there are various available services, consumers may not be loyal to a single service (Rieck, 2020). While consumers' behaviors on OFDS have been explored in the literature (Roh & Park, 2019), to date, consumers' loyalty to OFDS subscription services remains unknown. For instance, consumers can sign up for subscription services anytime and unlock subscription benefits (Hunter, 2020). They can also save \$4 to \$6 per order and access discounted food items from restaurants (Stawski, 2021). Therefore, consumers could become loyal to OFDS subscription services to maximize the benefits of using such services. However, loyalty to such services has not been discussed in literature in the context of subscription to OFDS. It has been only considered from the perspective of purchasing and without being tied to a subscription model that could be canceled anytime without a penalty fee. Therefore, focusing on loyalty to such services becomes an important aspect of the overall examination of OFDS subscription services.

1.4. Purposes and Objectives

The goal of this research is to explicate consumers' intentions of using OFDS subscription services (Study 1) and examine the role of benefit and risk in influencing consumers' loyalty toward OFDS subscription services (Study 2). This study pursues six specific objectives: (1) to investigate the key antecedents influencing consumers' intentions to use OFDS subscription services; (2) to explain the role of compatibility and convenience orientation in influencing two core perceptions of OFDS subscription services, namely performance expectancy and effort expectancy; (3) to examine the role of perceived security in influencing

consumers' intentions to use of OFDS subscription services; (4) to validate benefit and risk as antecedents of loyalty toward OFDS subscription services; (5) to examine the dimensionality of benefit of using OFDS subscription services and (6) to examine the dimensionality of risk associated with the use of OFDS subscription services.

1.5. Justification of the Study

Study 1 provides meaningful theoretical implications for academia and practical implications for the restaurant industry and OFDS. The study provides the theoretical basis that explicates consumers' intentions to use such services, therefore occupying a unique position in the hospitality literature. Accordingly, the study advances the general literature in consumer behavior as it is incorporated Information System (IS)-related tasks. In terms of practical contributions, the results of Study 1 show both OFDS and restaurants how to develop better marketing strategies by understanding the antecedents of consumers' loyalty toward OFDS subscription services. OFDS can emphasize the important antecedents of using subscription services which could increase the efficiency of online food purchasing tasks.

In terms of theoretical contributions, Study 2 examines the role of specific benefit and risk that influence consumers' loyalty toward OFDS subscription services. As hospitality companies are expanding and learning to accommodate their consumers' needs through loyalty programs, this study provides important insights for academics that explain the underlying factors influencing loyalty to OFDS subscription services. Moreover, the study offers important implications for restaurants and OFDS, enabling them to emphasize certain benefits in order to stimulate the loyalty of their subscribers. Both OFDS and restaurants can build a strong loyal consumer base that will highlight a significant difference between loyalty to OFDS subscription services and others (e.g., fashion products, fashion).

In general, loyalty programs are built to reward consumers' loyalty and increase it through incentives (Brashear-Alejandro et al., 2016). Loyalty programs are unique and targeted toward specific consumer segments to build a perception that the consumer is important (Lacey et al., 2007). Loyalty programs aim to provide preferential treatment to consumers by recognizing and offering high-quality products or services (Ding et al., 2021). In general, companies employ such programs to increase their number of consumers, the average spend per consumer, and provide them with rewards or benefits, including social and financial, to maintain the relationship (Brashear-Alejandro et al., 2016).

In the hospitality literature, loyalty and loyalty programs have been studied extensively in the hotel context (Koo et al., 2020). In general, hotel firms develop loyalty programs to enhance consumers' experience and loyalty, resulting in increased revenue (Berezan et al., 2017). The hotel industry generally pays a high commission (up to 30%) to OTAs based on the room rates (Myung et al., 2009). When consumers purchase a hotel room through OTAs, the hotel firm does not reward consumers if the booking is not completed through their websites (Koo et al., 2020). Consumers tend to sign up for OTAs' loyalty programs as they appropriate the benefits of using them, which in turn, increases consumers' repurchasing intention to use such services (Feinstein, 2018). Hotel firms began campaigns to recapture the market share and increase consumers' direct bookings through their websites (Mackenzie, 2019). For instance, hotel firms differentiated their loyalty programs from OTAs' loyalty programs by allowing consumers to book a room with lower prices through their websites. In addition, the hotel firms allowed consumers to earn points when they share their experiences through social media, such as Facebook, Instagram, and Twitter (Feinstein, 2018). Similarly, the restaurant loyalty programs offer both non-economic and economic rewards to build a strong relationship with consumers,

which reduces the restaurant's financial burden and maximizes consumers' loyalty (Park et al., 2013). In general, consumers tend to receive immediate rewards compared to delayed rewards, which influences their loyalty to restaurants (Hanzaee & Esmaeilpour, 2017). More specifically, consumers' restaurant loyalty is enhanced further when more non-economic than economic rewards are provided (Hanzaee & Esmaeilpour, 2017), which is inconsistent with the previous results (Park et al., 2013). OFDS are defined as intermediaries between consumers and restaurants where the benefits are introduced to consumers influencing consumers' loyalty toward OFDS.

In general, OFDS allow consumers to view restaurants' menus and complete online food ordering tasks by providing a method of payment and address information. The restaurants prepare food items and OFDS handle the food delivery process. Similar to OTAs, OFDS offer unique benefits (unrelated to restaurants' benefits) directly to consumers, which might enhance consumers' repurchasing intentions. OFDS build a perception that makes consumers feel special by providing unique benefits, such as personalized recommendations, likely resulting in loyal consumers. OFDS subscription services provide various personalized offers to consumers, including complimentary food items and personalized discounts that might not be available on the restaurants' webpages. This may lead to consumers preferring to order food items through OFDS to maximize those benefits.

Consumers pay similar prices, i.e., \$9.99 per month, for OFDS subscription services. As consumers pay the fee upfront, OFDS provide special benefits to encourage them to keep the service. For instance, consumers should be able to combine the benefits with other methods, such as using a particular credit card or a ride-share option to earn points, which is a potential motivation for consumers to maintain the subscription service. In both the hotel and restaurant

contexts, consumers generally do not pay any fee to be a part of the loyalty programs. However, OFDS subscription services require a monthly fee which makes the loyalty model unique. As consumers sign up for OFDS subscription services, they have an option to order their favorite food items from various restaurants without paying the delivery and service fee. As consumers realize such benefits, they might consider utilizing OFDS subscription services for a longer time leading them to stay loyal to such services. While OFDS subscription services attempt to establish a long-term relationship with consumers, both OFDS and restaurants should understand the needs and preferences of their current and potential consumers. Based on the results of Study 2, OFDS and restaurants will be able to understand the antecedents of consumers' loyalty toward OFDS subscription services.

1.6. Hypotheses

To achieve the research objectives, the research model is shown in Figure I. It was developed based on general technology adoption theory – UTAUT2 (Venkatesh et al., 2012). Study 1 examines the structural relationships among the antecedents and intentions to use OFDS subscription services. Study 2 was developed based on SET (Homans, 1961) and examines how benefit and risk influence consumers' loyalty toward OFDS subscription services (Figure 2).

The objectives of Study 1 were achieved by testing the following hypotheses:

- H1. Consumers' performance expectancy is positively related to their intentions to use OFDS subscription services.
- H2. Consumers' effort expectancy is positively related to their intentions to use OFDS subscription services.

- H3. Consumers' effort expectancy is positively related to their performance expectancy of OFDS subscription services.
- H4. Consumers' social influence is positively related to their intentions to use OFDS subscription services.
- H5. Consumers' perceived security is positively related to their intentions to use OFDS subscription services.
- H6. Consumers' compatibility perceptions are positively related to their performance expectancy of using OFDS subscription services.
- H7. Consumers' convenience orientation is positively related to their effort expectancy of using OFDS subscription services.

The objectives of Study 2 were achieved by testing the following hypotheses:

- H1. Consumers' benefit of using OFDS subscription services is positively related to their loyalty toward OFDS subscription services.
 - H1a. Perceived social benefit is a dimension of consumers' benefit of using OFDS subscription services.
 - H1b. Perceived economic benefit is a dimension of consumers' benefit of using OFDS subscription services.
- H2. Consumers' risk of using OFDS subscription services is negatively related to their loyalty toward OFDS subscription services.
 - H2a. Perceived privacy risk is a dimension of consumers' risk of using OFDS subscription services.
 - H2b. Perceived performance risk is a dimension of consumers' risk of using OFDS subscription services.

- H2c. Consumers' perceived overall risk is a dimension of consumers' risk of using OFDS subscription services.

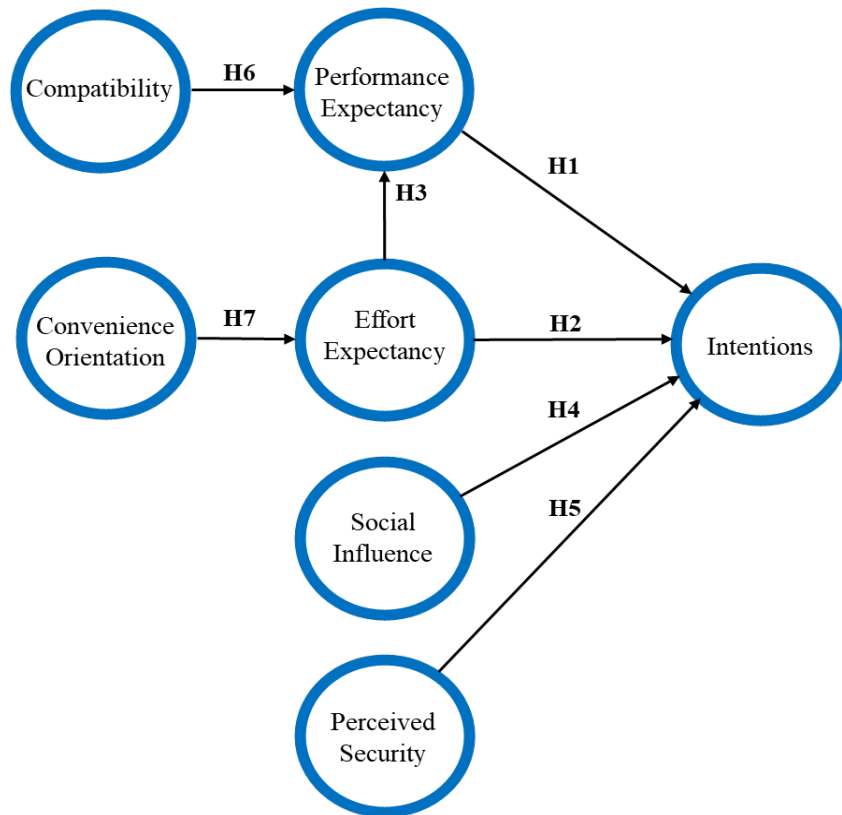


Figure 1. Conceptual Model of Study 1

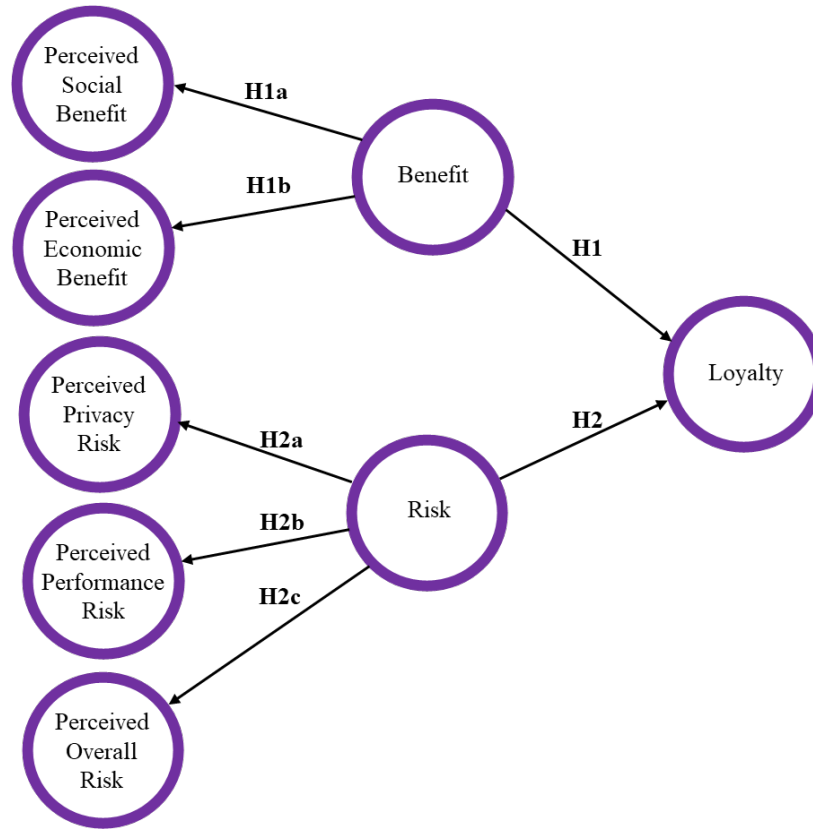


Figure 2. Conceptual Model of Study 2

1.7. Definition of Terms

The following section includes definitions of the terms used in both Study 1 and Study 2.

Performance Expectancy: Performance expectancy reflects the perception that IS facilitates users to complete a task better than rival systems (Davis, 1989).

Effort Expectancy: Effort expectancy reflects the perception that a particular system can be used with low effort by users (Venkatesh et al., 2003).

Social Influence: Social influence reflects the users' particular behaviors toward a particular IS based on others' influences (e.g., family and friends) (Karahanna et al., 1999).

Perceived Security: Perceived security reflects consumers' perception that sensitive information is stored by users when an online transaction is conducted (Cui et al., 2018).

Compatibility: Compatibility refers to the level of consistency between an IS and the users' existing values, beliefs, and experiences (Karahanna et al., 2006).

Convenience Orientation: Convenience orientation represents consumers' perceptions of saving time and effort while utilizing IS (Olsen & Mai, 2013).

Intentions: Intentions to use a particular IS represent users' behavioral responses (Fishbein & Ajzen, 1975).

Benefit: Benefit refers to the consumers' perception toward positive outcomes that are associated with products or services (Lee, 2020).

Perceived Social Benefit: Perceived social benefit refers to the perception that makes consumers feel like part of a specific group (Candi & Kahn, 2016).

Perceived Economic Benefit: Perceived economic benefit refers to the benefit obtained by engaging in relational exchanges with businesses (e.g., primarily in regard to monetary or time-saving benefits) (Gwinner et al., 1998).

Perceived Privacy Risk: Perceived privacy risk reflects the loss of consumers' control over their private information being exposed by third-party users (Martins et al., 2014).

Perceived Performance Risk: Perceived performance risk refers to consumers' perceptions about a product or service that does not perform as expected (Featherman & Pavlou, 2003).

Perceived Overall Risk: Consumers' overall perceived risk is aligned with uncertain outcomes that occur both before and after the completion of the purchasing process (Sun, 2014).

Loyalty: Loyalty reflects the strength of the relationship between consumers' attitudes toward a brand and their repeat purchasing behavior for that brand (Dick & Basu, 1994).

1.8. Limitations of the Study

Among the many possible conceptual models that could be developed using the UTAUT, the model used in this study is only one of the possible variants. Therefore, there could also be other possible conceptual models that could explicate consumers' intentions to use OFDS subscription services. The model is built by adding constructs from the literature. However, the conceptual model does not include all possible extension constructs.

The study is conducted in the U.S, and therefore, it reflects consumers' behavioral intentions toward OFDS subscription services only in the U.S. According to the trade literature (Martinko, 2020), due to lifestyle in the U.S., only 20% of Americans cook at home daily. In addition, the major OFDS started partnering with chain restaurants and became available outside the big cities (Popper, 2020). Thus, the generalizability of the results may be limited due to the data collected from the U.S. population.

The study uses a large sample of consumers. As a rule of thumb, it is recommended to have 10 observations per indicator variable to set an adequate sample size when using Structural Equation Modeling (SEM) (Muthèn & Muthèn, 2017). However, the study collects data from 573 respondents, which is more than what Muthèn and Muthèn (2017) recommended. According to Hair et al. (2009), a larger sample size causes large magnitude of the coefficients (Kyriazos, 2018), which could be a limitation of this study. Therefore, this study could require valid replication to minimize this limitation.

This study was conducted during the coronavirus pandemic. During the pandemic, many restaurants were forced to offer takeout and delivery options to consumers. Restaurants utilized OFDS to maintain sales which assisted the restaurant industry to compensate losses in sales

during the lockdown (Cai & Leung, 2020). Therefore, the results of the study reflect consumers' responses during a severe economic situation where restaurants were not fully opened.

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CHAPTER II

REVIEW OF LITERATURE

This chapter contains information about OFDS and OFDS subscription services. The chapter also provides a rationale for developing a conceptual model and hypotheses based on theory.

2.1. The Evolution of Online Food Delivery Services (OFDS)

Restaurant food delivery has a rich history in the U.S. and has continued to grow as the Internet has revolutionized the process of ordering food online. In the 1990s, restaurants had a chance to display their menus and provided consumers with options to customize and order food items from their websites (Historical Facts, 2021). In 1994, Pizza Hut launched a platform called Pizzanet, which allowed consumers to order pizza and have it delivered to their homes (Blumtritt, 2020). Upon its launch in 1995, www.waiter.com partnered with more than 60 local restaurants in the Silicon Valley area (Hitt, 2020). In the early 2000s, consumers started looking for both convenience and variety to complete online food orders. During this time, the following platforms were launched: Seamless, Just Eat, Grubhub, and Takeaway.com, allowing consumers to order through restaurants' websites (J.P. Morgan Research, 2020). Furthermore, the sustained growth of digital technology introduced a new concept called aggregators, which granted consumers access to multiple restaurants through a single platform (Norris, 2020). Aggregators are based on a traditional model in which consumers can access multiple restaurants' menus and compare prices. Although aggregators are in charge of online food ordering processes (McKinsey, 2016), restaurants themselves handle the food delivery.

Given the increased interest in online food delivery, OFDS (e.g., Grubhub, UberEATS, DoorDash) became a dominant trend in the restaurant industry (Gunden et al., 2020). In 2020,

the COVID-19 pandemic influenced the restaurant industry immensely, and consumers' eating behavior changed as the world started to implement lockdown protocols (Liddle, 2020).

Restaurants started accommodating their services through OFDS as consumers chose not to dine in restaurants due to pandemic (Goodway Group, n.d.). The restaurants that partnered with OFDS witnessed increased demand for online food orders (Chauhan, 2020).

Therefore, OFDS have become significant players in food service market and are responsible for both delivery and online food ordering processes (Perri, 2021). The restaurant industry has two food delivery business models: platform-to-consumer delivery (UberEATS) and restaurant-to-consumer delivery (Domino's Pizza), which differ based on the delivery method. While restaurants manage the food delivery process in the sub-segment of restaurant-to-consumer delivery, OFDS (also known as platform-to-consumer delivery) handle the picking up of food item(s) from the restaurants to deliver to the consumers' locations (e.g., residence, office) (Blumtritt, 2020). OFDS charge a commission fee (between 10-30% per order) to restaurants using their platform. Through this partnership, consumers can browse restaurants' menus through OFDS and complete an online food ordering task (Lucas, 2020), providing the required information to complete the order, such as payment information and delivery addresses. Some restaurants receive the order through their point-of-sale software integrated with OFDS (Grubhub Holdings Inc., n.d.). Overall, OFDS provide the delivery service in different time ranges and manage customer service to enhance the online ordering process (Rayome, 2020).

2.2. The Differences Among the Major OFDS

In the U.S. restaurant market, four leading players are competing for the market share: DoorDash, Grubhub, UberEATS, and Postmates (Perri, 2021). Although all four OFDS provide similar services, consumers choose one or more particular services based on distinct

factors/features (e.g., availability in certain locations, partnerships with favorite restaurants, alternative dietary options and discounted food items, lower delivery fees). For instance, UberEATS has a sub-section called “deals” on the main web page, while DoorDash has a similar section on the bottom of their interface called “offers”. When consumers click on the deals section in UberEATS, two deals categories are revealed. The first category includes free delivery and a variety of saving options, while the second category offers rewards, some of which are offered after the completion of multiple orders. DoorDash, on the other hand, customizes the offers based on consumers’ previous orders and allows them to sort options based on a distinct criterion (e.g., rating, cuisines, and offer type: delivery fee, discount). Similarly, Grubhub has a separate tab called “perks” that reveals the rewards, including complimentary delivery and discounts. Grubhub also allows consumers to sort benefits based on cuisines. While other OFDS provide a separate section for offers, Postmates does not provide any sub-sections for its offers at all (including rewards). Consumers can see the offers only on the main page. Unlike the other three major OFDS, Postmates does not only deliver food to consumers but also any product (e.g., beauty, personal care, electronics, flowers, food) from retailers.

OFDS charge service fees to consumers before completing the online order. For instance, UberEATS charges a 15% service fee and Postmates charges 20%. Consumers pay between \$1.99 and \$7.99 in service fees for each order from DoorDash, while Grubhub charges service fees depending on the restaurant (Restaurant Business, 2020). The OFDS pay their delivery employees hourly, and the delivery employees also receive gratuity from the consumers for each order. While Grubhub and DoorDash pay \$12 per hour to their employees, UberEATS pays an average of \$13, and Postmates pays an average of \$15. However, UberEATS sometimes pays

more due to their frequent referral sign-up, bonus promotions, and the opportunity to work during peak days/hours (Fang, 2020).

In terms of the number of employees, UberEATS has 10,000 employees, which is the largest group of employees among all OFDS, followed by Postmates with 5,341, DoorDash with 3,279, and Grubhub with 2,841 (Owler, 2021). The commission fee for the restaurant varies by OFDS. UberEATS charges restaurants with the highest commission fee (30% - 35%) (Masige, 2020), followed by DoorDash (10% - 35%) (Fantozzi, 2021), Postmates (up to 30%) (Myers, 2020), and Grubhub (range of 15% - 30%) (Machi, 2021). As of August 2021, DoorDash controlled 57% of the U.S. food delivery market share, with UberEATS controlled 23%, Grubhub 16%, and Postmates 3% (Perri, 2021). Overall, OFDS continue to grow and increase in revenue both nationwide and internationally.

The trade literature recognizes that the primary motivation for consumers' use of OFDS is the convenience of ordering food items from a single platform (McCarthy, 2020). In general, OFDS provide various benefits, such as processing online payments directly to the restaurant and tracking the delivery process until food items are delivered (Li et al., 2020). OFDS include a search function that facilitates queries to find a favorite restaurant or cuisine from various options (Chen et al., 2020). OFDS also include consumers' reviews, which could motivate other consumers to choose specific cuisines or restaurants. OFDS list the chosen food items in the cart before consumers check out from the platform, which reduces order errors (Rayome, 2020). OFDS provide consumers a variety of options for payment, such as Venmo, PayPal, etc. Such payment options reflect easy payment experiences and enable consumers to split the food orders while utilizing OFDS (Sawers, 2018).

2.3. The New Features of OFDS

OFDS have continuously developed new services, which resulted in increased use of OFDS in the last few years (Kats, 2020). For example, recently, DoorDash launched a new gifting feature, which can be used for sending personalized gifts during holiday seasons. Consumers can also include personalized messages and track the delivery of personalized cards (Campbell, 2020). In 2020, UberEATS, DoorDash, and Grubhub introduced a new delivery feature that provides consumers with a new level of convenience to fulfill their grocery needs (DoorDash, 2020a). The consumers' groceries are delivered by OFDS as needed during the COVID-19 pandemic (Ha, 2020).

In addition to the benefits to consumers, OFDS have played an essential role in the market as drivers for increasing restaurants' sales (Perri, 2021). OFDS give restaurants access to new markets to create brand awareness, which could be especially beneficial for independent restaurants (Littman, 2019). For example, Chipotle increased its sales by 100.7% after partnering with OFDS (Luna, 2019), and the top chain restaurants in the U.S. (e.g., Wendy's, Chick-fil-A, Little Caesar's Pizza) have formed partnerships with OFDS to push their revenues higher (Perri, 2021). In the U.S. market, approximately 75% of restaurants agree that OFDS assist in reaching out to new consumers, which generates additional revenue (DoorDash, 2020b).

2.4. The Features of OFDS Subscription Services

Recently, the major U.S. OFDS launched subscription services to enhance consumers' experiences by providing discounts, limited deals, and other benefits (e.g., reduced service fees, cashback, points depending on the purchase, complimentary delivery fees) (Bandoim, 2020). Such benefits differ among OFDS. For instance, UberEATS provides an estimated delivery time and the option to track the status of the orders after consumers have completed the online

ordering task (Conte, 2020). UberEATS also provides \$200 Uber Cash annually to consumers who are platinum American Express cardholders after signing up as subscribers. Consumers can use Uber Cash for Uber rides, including bikes and scooters. In addition, consumers can earn 1 point eligible per \$1 UberEATS purchase and can receive a giveaway if they are platinum American Express cardholders (Uber, 2020a). Uber subscribers can order groceries through the UberEATS app and receive free grocery delivery on orders over \$30 (Uber, 2020b). According to Uber, the number of subscribers (both for Uber Pass and EATS) exceeded 1 million during the third quarter of 2020 (Uber, 2020c). Globally, UberEATS controls 30% of the global food delivery market with Postmates (Curry, 2021).

The four main OFDS offer their subscription services at nearly the same cost to consumers (\$9.99 per month) and offer complimentary delivery. While OFDS subscription services provide similar services, consumers may choose one particular subscription service based on different factors, such as availability, economic benefits, having grocery delivery and cuisines. For instance, UberEATS and DoorDash have partnered with credit card companies and offer various benefits to consumers. DoorDash provides 5 points per \$1 for each purchase and 5% cashback on eligible orders if consumers are Chase credit card holders (Martucci, 2021). UberEATS offers \$200 Uber cash to consumers who are Platinum card members to use for both Uber rides and UberEATS. While Grubhub offers 10% cashback on \$1 spent from member restaurants, Postmates does not have any partnership with a credit card company yet. Among the four OFDS, Grubhub is the only one that provides free subscription services for enrolled college students in more than 150 campuses in the U.S. (Litman, 2020).

Initially, DoorDash, Grubhub, and UberEATS did not offer grocery delivery services. However, due to the global pandemic, they began offering both food and grocery delivery

services. In terms of the delivery fee, UberEATS provides free grocery delivery on orders above \$30 for subscribers.. DoorDash also provides free grocery delivery for all consumers who have signed up for the subscription service. While Grubhub's charges vary for the grocery delivery fee, Postmates still does not offer grocery delivery services. Uber bought Postmates in 2020 and will manage it as a separate entity (Isaac, 2020). Overall, OFDS are in position to recognize the substantial usage of food delivery services in the future. If both OFDS and restaurants can effectively manage such benefits, consumers can gain from reliable online food ordering experiences, which will result in an increase in consumers' purchasing intentions (Cai & Leung, 2020).

2.5. OFDS Subscription Services During COVID-19 Pandemic

The COVID-19 pandemic caused a significant decrease in restaurant sales and dramatically changed the restaurant industry (National Restaurant Association, 2020). As a result, the use of OFDS grew by 138% in the U.S, which compensated for losses in restaurant businesses during the lockdown (Cai & Leung, 2020). OFDS became the main food supplier for consumers during the COVID-19 pandemic, and 111 million U.S. consumers utilized such systems for online orders and delivery (Curry, 2021). For example, DoorDash added 50% of its restaurants after the start of the outbreak (Williams, 2020). In addition, consumer spending increased by 70% year-over-year on OFDS (Savitz, 2020), and the major OFDS increased their share of sales in 2020 nationwide (Perri, 2021). Specifically, DoorDash was placed first with 57% of U.S. consumers' meal delivery sales, followed by UberEATS with 23%, Grubhub with 16%, Postmates with 3%, and others (e.g., Amazon Restaurants, Caviar, etc.) with 1% in December 2020 (Perri, 2021).

OFDS started partnering with a variety of businesses to enhance their position on the market. In 2021, DoorDash decided to provide retail and grocery deliveries for consumers and partnered with Safeway, the second-largest grocery chain in the U.S., to provide grocery deliveries to boost revenue (DoorDash Inc., 2021). DoorDash further announced a partnership with Macy's Inc. to fulfill consumers' delivery needs (DoorDash, 2020c). Finally, DoorDash conducted a pilot study on removing human drivers and relying on autonomous vehicles to enhance the efficiency of the food delivery process (Porter, 2019). They partnered with Cruise Automation to provide contactless food delivery by using autonomous vehicles (Hawkins, 2019). With these prospects, DoorDash is expected to reach a revenue of \$230 billion in 2030 (DoorDash Inc., 2021).

2.6. New Trends in OFDS

There are a few trends in the food service market that are related to the development of OFDS. For instance, in the last few years, the concept of ghost kitchens was introduced into the restaurant market, and its popularity grew, especially during the COVID-19 pandemic (Row, 2020). Ghost kitchens are professional cooking facilities without front-of-house operations or dining rooms (Beckett, 2020). New restaurant businesses created online ghost kitchen brands to reduce rent and labor costs (Rowe, 2020). OFDS partnered with ghost kitchens to manage online orders, food delivery, as well as sharing of kitchen space (Hawley, 2020). Two ghost kitchen operations were launched by restaurants in the San Francisco area and prepared their food items in DoorDash kitchens (Luna, 2020). For example, Cloud Kitchens was started by Uber's founder and helped restaurants manage deliveries and host virtual brand operations at their kitchens (Hawley, 2020). Due to its popularity, a rise is expected in the number of ghost kitchens, and they are anticipated to reach \$1 trillion globally by 2030 (Beckett, 2020).

OFDS will adapt to new technology trends to enhance online food purchasing experiences by including drones and delivery robots in their operations to enhance the efficiency of the delivery process. For instance, DoorDash has deployed Chowbotic's technology to help restaurants reach more consumers at different locations (e.g., airports) without the need for restaurant employees (Crowe, 2021). Chowbotics technology helps consumers to complete food ordering tasks conveniently (Wilmer, 2021). Such services also will reduce delivery time and the labor cost of OFDS. OFDS will take advantage of big data to analyze consumers' activities while utilizing OFDS, such as preferences, complaints, offers, and trends. By doing this, both OFDS and restaurants will have an opportunity to adjust their operations according to consumers' needs and preferences. As a result, both OFDS and restaurants will fulfill consumers' expectations efficiently. With-AI-based technology, consumers can order food items online by using multiple channels easily. In the future, OFDS can be available on these devices and provide new ways of ordering food online. Such trends could change the dynamics of the food delivery market in the future and provide new opportunities for consumers, restaurants, and OFDS.

2.7. Theoretical Justification – Study 1

There is extensive research on technology adoption in a variety of fields. In general, technology adoption theories examine an individual's choice to utilize a particular innovation (Straub, 2009). Some adoption theories, such as the Diffusion of Innovation theory (DOI) (Rogers, 1962), Model of PC Utilization (MPCU) (Thompson et al., 1991), and Motivational Model (MM) (Davis et al., 1992), have been studied in a wide range of fields. For instance, the DOI theory has been widely used to examine the antecedents of individuals' choices of innovations (Rogers, 1962). More specifically, four primary components of DOI were discussed in Rogers's study (1962): (1) innovation, (2) social systems, (3) time, and (4) communication

channels. In DOI theory, the characteristics of innovation, including relative advantage, compatibility, observability, and trialability, were proposed to examine an individual's innovation adoption process (Chou et al., 2012). According to Rogers (1962), five stages explain an individual's adoption process, where an individual has an idea of how innovation functions to form a favorable attitude toward the innovation, to decide whether to adopt or reject the innovation, its actual use, and eventually to verify the adoption decision. MPCU discussed an individual's technology acceptance determinants in the organizational context (Thompson et al., 1991). Specifically, social factors including complexity, job fit, and long-term consequences were found to be effective on an individual's PC utilization in the workplace. MM was built by Davis et al. (1992) to explain an individual's behavior based on psychological aspects of technology acceptance. MM included two motivations (i.e., extrinsic and intrinsic) as determinants of technology adoption (Davis et al., 1992). However, within the theoretical landscape of technology adoption, one popular technologies adoption theory - Technology Acceptance Model (TAM) (Davis, 1989) – stands out. There is extensive research on TAM (Davis, 1989) in a variety of contexts and industries, including hospitality (Sun et al., 2020).

TAM was developed by Davis (1989) to explain a user's acceptance of Information Systems (IS). Davis (1989) reviewed the fundamental theories (e.g., Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), Theory of Planned Behavior (TPB) (Ajzen, 1985), and Social Cognitive Theory (SCT) (Bandura, 1986)) to develop a theory specifically explaining users' technology acceptance. TAM is based on TRA and was developed to identify antecedents that resulted in users' acceptance or rejection of technology (Davis, 1989). Similar to the TRA, TAM determined the relationship between external factors (e.g., design of technology, risk factors, security), internal beliefs, attitudes, and intentions of users (Davis, 1989). TRA is one of the

earliest theories that explain an individual's behavior based on behavioral intention, which is affected by attitudes toward the behavior and perceptions of subjective norms regarding that behavior (Fishbein & Ajzen, 1975). Attitudes refer to an individual's evaluations of the target behavior (Fishbein & Ajzen, 1975). Subjective norms refer to social pressure exerted by peers to perform or not perform the behavior of interest (Untaru et al., 2016). TPB is an extended version of TRA and was developed by adding the construct of perceived behavioral control, which refers to an individual's perception toward the ability to perform the given behavior (Ajzen 1985).

Davis (1989) identified two primary constructs: perceived ease of use and perceived usefulness, predicting users' technology acceptance in early adoption. The previous theories, (e.g., Self-Efficacy (Bandura, 1982), Adoption of Innovation (Tornatzky & Klein, 1982), and Cost-Benefit paradigm (Beach & Mitchell, 1978)), were used as a foundation for the constructs. Self-efficacy theory includes a theoretical perspective that suggests that perceived ease of use and usefulness are considered basic determinants of an individual's behavior (Bandura, 1982). Adoption of innovation research indicates that the characteristics of innovation (e.g., compatibility, relative advantage, complexity) impact the individual's adoption of the innovation types (Tornatzky & Klein, 1982). More specifically, perceived ease of use is marked as a prominent indicator in the research on innovation adoption (Tornatzky & Klein, 1982). The cost-benefit theory discusses the individual's choices depending on the task's complexity. The cost-benefit theory is found to be relevant to the perceived usefulness and ease of use (Beach & Mitchell, 1978). Such concepts are considered to be two fundamental antecedents of an individual's behavior (Davis, 1989). Overall, TAM states that adoption of innovation is primarily based on the perspective that a particular technology would enhance the user's job performance and secondarily depends on the difficulty of utilizing a particular technology (Davis, 1989).

TAM was developed by partnering with IBM Canada Inc. to assess users' adoption of new computing systems (e.g., PROFS electronic mail and XEDIT file editor). Initially, Davis (1989) formulated a 14-item scale for each construct based on the prior literature. Interviews were collected from employees who were asked to rate IS usefulness and ease of use in the workplace. Ten items for each construct remained on the scale after the interviews. Davis (1989) collected data from 112 users of the interactive computer system in Study 1. In Study 2, data were collected in the lab, and the participants evaluated the predefined six items of usefulness and ease of use scales from Study 1. Based on the results of the two studies, Davis (1989) identified two primary constructs: perceived usefulness, which refers to the extent to which IS enhances potential users' performance, and perceived ease of use, which refers to the amount of effort required to use IS effectively. Although various theories have been used to predict users' acceptance behavior toward technology, TAM remained the most influential theoretical base in literature, including in the hospitality literature (Morosan, 2014). TAM is illustrated in Figure 3 below.

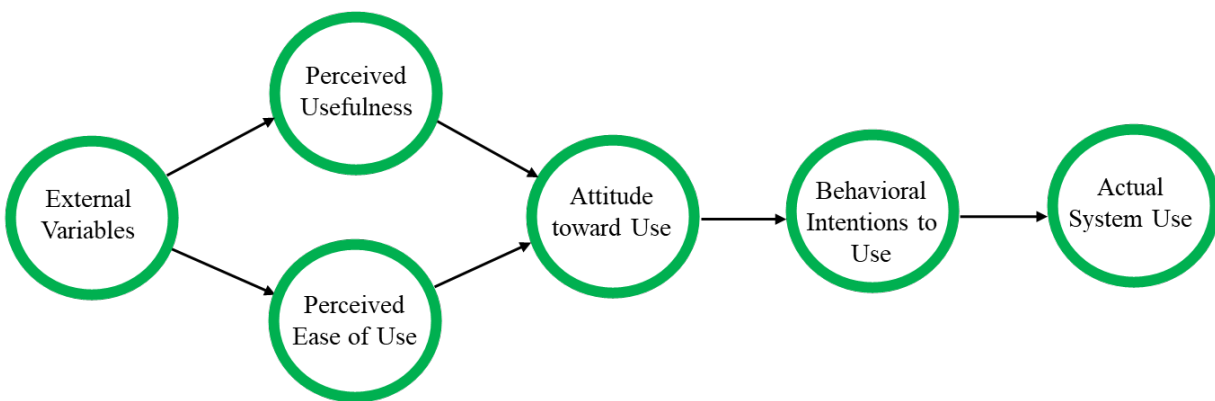


Figure 3. Technology Acceptance Model (Davis, 1989)

Although various theories have predicted users' technology adoption, TAM serves as a core theoretical foundation that enabled scholars to explicitly examine users' technology

acceptance in hospitality (Morosan, 2014). The primary technology beliefs – perceived ease of use and usefulness, were found to be important antecedents leading to users’ behavioral intentions (Kang & Namkung, 2019). As specific technologies were introduced, TAM was extended by additional constructs (e.g., personalization, perceived benefits, perceived risk, perceived security) (Kang & Namkung, 2019).

The reconceptualized TAM was applied to reflect the user’s behavioral intentions in IS contexts, such as ancillary services (Morosan, 2014), mobile applications (Morosan & DeFranco, 2016a), online booking (Wang & Jeong, 2018), and food service mobile applications (Kang & Namkung, 2019). For instance, Morosan (2014) extended TAM by adding constructs such as trust, perceived security and privacy, consumers’ innovativeness to examine users’ intentions to use mobile phones for purchasing ancillary air travel services. The results indicated that perceived ease of use is associated with users’ attitudes and intentions to use mobile phones for such services (Morosan, 2014). Wang & Jung (2018) combined the key constructs of TAM with IDT to examine consumers’ attitudes and intentions to use booking websites. Perceived usefulness has a significant impact on consumers’ attitudes leading to consumers’ intentions to choose those websites (Wang & Jung, 2018). Although extensive research on the user’s technology acceptance exists in IS literature, the main theoretical foundation inevitably evolved to include multiple constructs that together better describe the complex mechanisms of IS adoption. Venkatesh et al. (2003) formulated a unified model called the Unified Theory of Acceptance and Use of Technology (UTAUT).

Venkatesh et al. (2003) proposed the original UTAUT, which explained 70% of the variance in users’ intentions. They reviewed eight behavioral intention models that examined users’ acceptance of new IT in an organizational context, which included the following models:

(1) TRA (Fishbein & Ajzen, 1975); (2) TAM (Davis, 1989); (3) TPB (Ajzen, 1985); (4) combined TAM-TPB (Taylor & Todd, 1995); (5) MPCU (Thompson et al., 1991); (6) MM (Davis et al., 1992); (7) SCT (Bandura, 1986); and (8) IDT (Rogers, 2003). Venkatesh et al. (2003) identified the limitations of previous theories and provided a comparison of how they addressed the limitations in the UTAUT model.

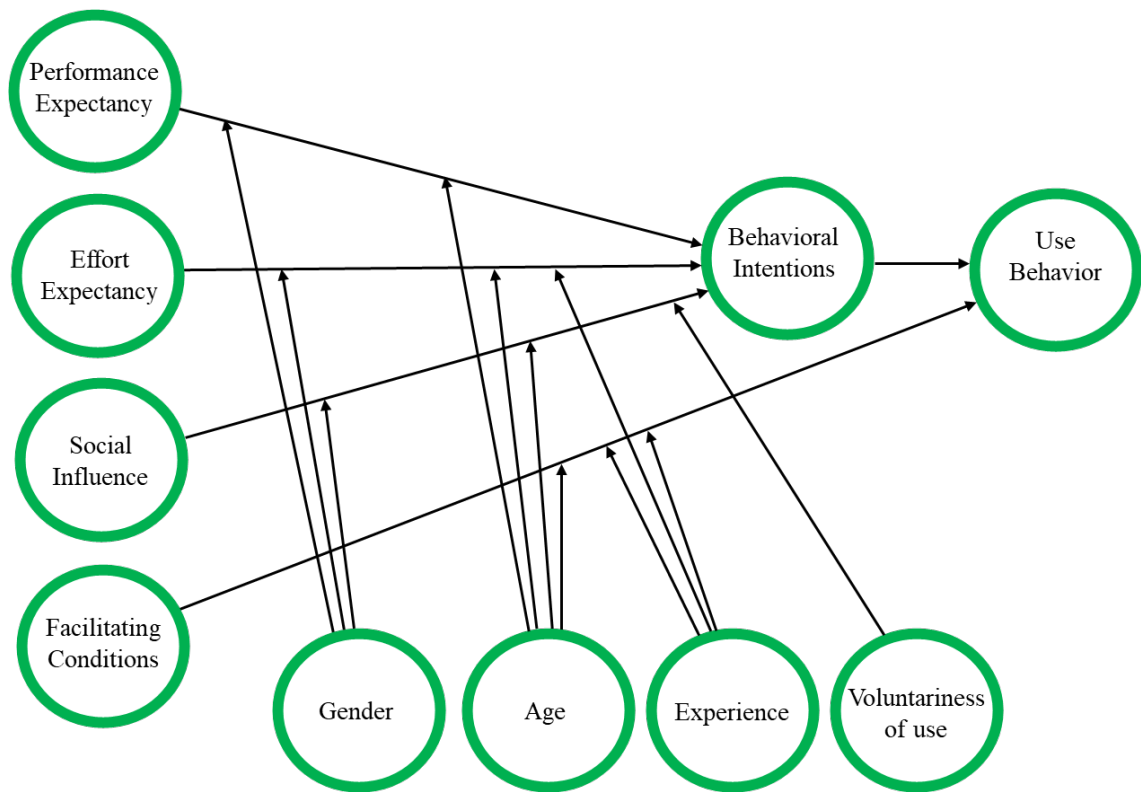


Figure 4. UTAUT Model (Venkatesh et al., 2003)

The study further collected data from employees in organizations who were familiar with the technology, as well as from users at the time who were not familiar with the IS. Venkatesh et al. (2003) tracked employees through stages of experiences with IS and compared all models among the employees. The researchers collected data from three different points in time: (1) post-training, (2) one month after implementation, and (3) three months after implementation.

After multiple studies were conducted, Venkatesh et al. (2003) developed the core constructs of the UTAUT model. UTAUT is illustrated in Figure 4.

The UTAUT model included the primary constructs from TAM: performance expectancy and effort expectancy. UTAUT also added two new additional determinants of users' technology acceptance, namely, social influence and facilitating conditions. Social influence refers to the users' IS-related behaviors based on others' influence (e.g., family and friends) (Karahanna et al., 1999). Venkatesh et al. (2003) included social influence to examine the effect of others' thoughts on users' technology acceptance in an organizational context. Social influence has been included in previous theories (DOI, TRA, TPB, etc.) and was also a determinant of behavioral intentions (Venkatesh et al., 2003). In the hospitality literature, social influence has been discussed as an antecedent of consumers' intentions to use technology, such as mobile payments (Morosan & DeFranco, 2016) and online food delivery systems (Gunden et al., 2020). Venkatesh et al. (2003) also added facilitating conditions to the UTAUT model, which refers to a user's perception that IS users' behaviors are associated with a certain infrastructure that supports the task completion. Although not all studies in the hospitality IS literature included the facilitating condition construct, some researchers (e.g., Morosan & DeFranco, 2016) examined its impact on IS behavioral intentions. Four moderators, namely, age, gender, voluntariness of the use and experience were added to UTAUT2 to examine the impact on technology acceptance (Venkatesh et al., 2012).

Not surprisingly, Venkatesh et al. (2003) found that performance expectancy was the strongest antecedent of users' intentions. Recent research in hospitality confirmed that performance expectancy was the most effective influence on users' IS adoption (Gunden et al., 2020). In addition, the strength of the relationship between performance expectancy and

intentions varies based on gender and age (Venkatesh et al., 2003). Venkatesh also confirmed the impact of effort expectancy on the intention, which also varies based on gender and age. The UTAUT model focuses primarily on the impact on technology adoption in organizational contexts. While the original UTAUT has been studied in different contexts, Venkatesh et al. (2012) discussed the necessity of having a theory that provides a rich understanding of technology acceptance in the consumer context. The original UTAUT and its core constructs did not explicitly examine consumer technology acceptance in consumer-related tasks. Therefore, the UTAUT model was further modified with the addition of several constructs, such as hedonic motivation, price value, and habit and formulated as UTAUT2 model to explore IS adoption in the consumer context. The UTAUT2 model is illustrated in Figure 5.

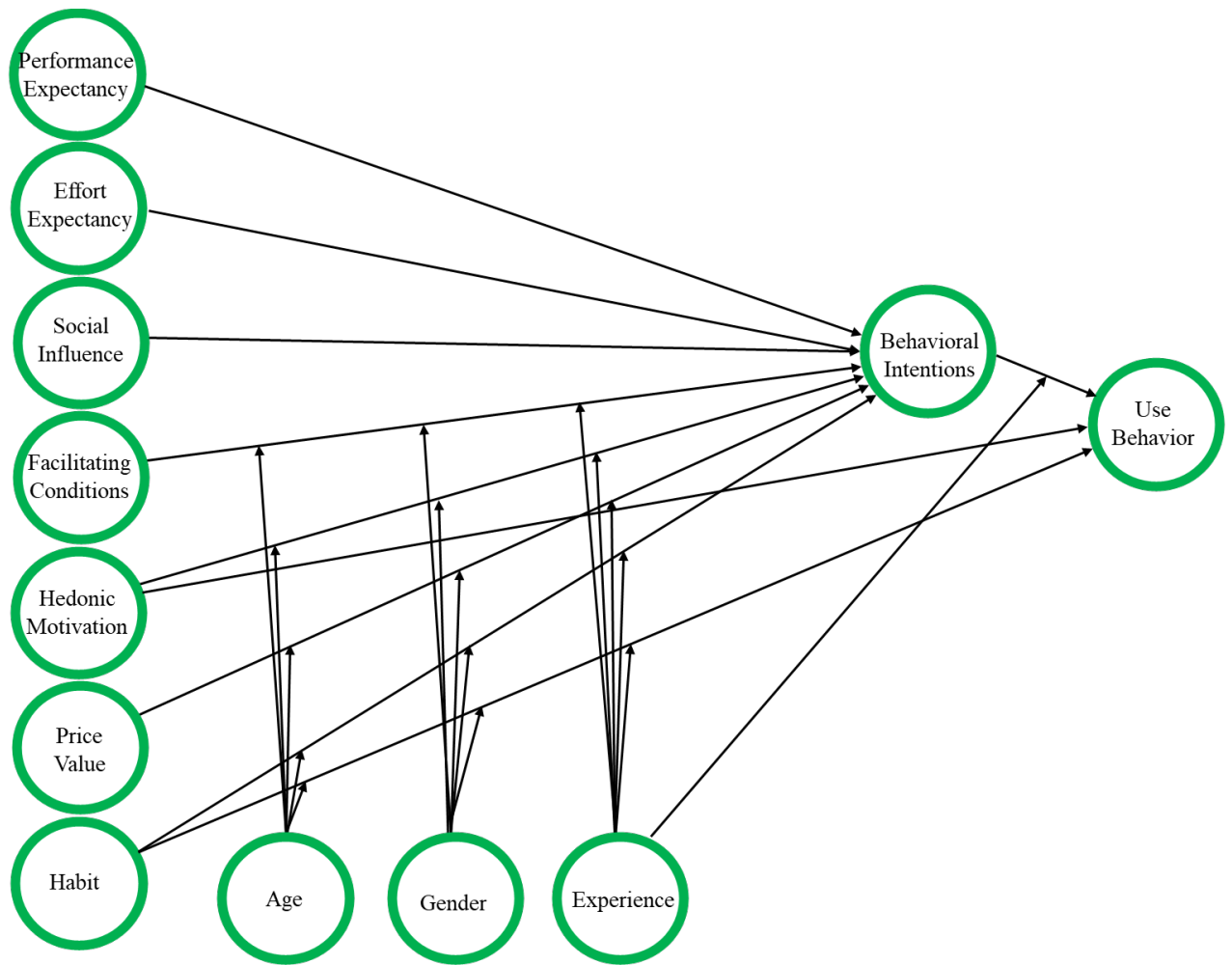


Figure 5. UTAUT2 Model (Venkatesh et al., 2012)

The UTAUT2 was developed to determine the antecedents of consumers' behavioral intentions toward IS. UTAUT2 was formulated based on the previous IS adoption models, such as the original UTAUT (Venkatesh et al., 2003) and TAM (Davis, 1989). UTAUT2 retained the fundamental constructs from the original UTAUT, namely, performance expectancy, effort expectancy, social influence, and facilitating conditions while adding new constructs (i.e., hedonic motivation, price value, habit) (Venkatesh et al., 2012).

In this research, UTAUT2 was chosen as a primary theoretical framework to examine consumers' intentions to use OFDS subscription services for two reasons: (1) it provides a

comprehensive theoretical basis to explain behavioral intentions (Venkatesh et al., 2003), (2) it captures the unique context of food ordering tasks in the consumer context (Gunden et al., 2020).

Given the ability of the UTAUT2 to explain technology adoption in a variety of industries, especially due to its versatility in accepting extensions that can comprehensively and parsimoniously explain specific tasks in technology contexts, it was utilized as the main theoretical foundation of Study 1. Three variables from the original UTAUT2 included in the study's model were performance expectancy, effort expectancy, and social influence. Facilitating conditions was not retained as consumers do not need a technical infrastructure to complete online food ordering tasks in the OFDS context. Price value was also not included as OFDS offer relatively standardized pricing and occasional discounts (e.g., reduced services fees, personalized offers, complimentary delivery fees, etc.). The hedonic motivation was not retained in the current model as OFDS generally have interfaces designed to primarily support utilitarian aspects of task completion. In addition, habit was not included as the concept of compatibility reflects consumers' characteristics that explain a more detailed level of use of OFDS subscription services.

The hospitality literature offers a variety of constructs that influence consumers' intentions to use such services. For instance, Gunden et al. (2020) reconstructed UTAUT2 by adding three concepts (e.g., impulse buying tendency, congruity with self-image, mindfulness) to capture consumers' adoption of OFDS. According to Gunden et al. (2020), performance expectancy is the main antecedent of using OFDS, and consumers' perceive self-image to be associated with their intentions to use such services. UTAUT2 was modified by incorporating new constructs such as confirmation, perceived task-technology fit, and satisfaction to validate the antecedents of consumers' continuance intentions of using OFDS during the COVID-19

pandemic (Zhao & Bacao, 2020). While the researchers reconstructed UTAUT2 to depict the unique task – ordering food items through OFDS - the nature of subscription services could be different in the context of OFDS. In accordance with the goal of the study, UTAUT2 is reconstructed by adding three constructs (i.e., perceived security, compatibility, and convenience orientation) to examine consumers' intentions to use OFDS subscription services.

2.8. Hypotheses Development for Study 1

2.8.1 Performance Expectancy

Performance expectancy originates in TAM (Davis, 1989) and reflects the perception that information systems (IS) facilitate users' task completion better than rival systems. Performance expectancy has been confirmed as a strong antecedent of consumers' intentions to use IS in numerous contexts, including hospitality (Okumus et al., 2018). Performance expectancy (or usefulness) has been mostly conceptualized as an antecedent of the main concept reflecting IS adoption (e.g., attitudes, intentions to use, actual use behavior), establishing a fundamental conceptual link that reflects the main motivation behind IS adoption. Specifically, the adoption of various IS predicated upon the ability of the system to guide the consumer to task completion, even in the absence of other factors influencing the system use. As a core construct in most adoption theories, performance expectancy was found to influence a variety of factors that lead to IS adoption. For example, Kim et al. (2016) showed that consumers' attachment to IS was influenced by performance expectancy. Specifically, when consumers encounter systems characterized by usefulness, they become attached to the IS, which influences their behavioral intentions to use such systems.

The research on IS adoption in hospitality confirmed several antecedents of performance expectancy. For example, information quality was found to be an antecedent of the performance

expectancy of travel review websites, leading to an impact on consumers' purchasing intentions (Wang & Li, 2019). In addition, Kaushik and Rahman (2017) confirmed that optimism and innovativeness were antecedents of performance expectancy, which further influence consumers' intentions to use self-service technologies in hospitality. Moreover, consumers' perceptions of the usefulness of travel websites are enhanced by relevant and accurate information provided on websites (Wang & Li, 2019). In addition, Morosan (2014) confirmed the impact of personalization on performance expectancy, which further influences consumers' intentions to purchase ancillary air travel services.

As a core construct in IS adoption theory, performance expectancy was found to be an antecedent of consumers' intentions to use IS in hospitality (Morosan & DeFranco, 2016), as well as OFDS (Roh & Park, 2019). Consumers' intentions to use such services could be stimulated by developing effective interfaces for food ordering (Gunden et al., 2020). Indirect relationships between performance expectancy and intentions to use IS were also validated. For example, the functionality of OFDS impact consumers' satisfaction, which leads to consumers' continuance intentions of using OFDS during the COVID-19 pandemic (Zhao & Bacao, 2020).

In general, rich information relative to products or services aids consumers to complete online purchases while saving time, which results in enhanced consumers' intentions to use OFDS (Yeo et al., 2017). OFDS offer a large amount of information provided by a variety of restaurants to help consumers complete online ordering tasks from a single platform. Moreover, consumers can optimize their ordering tasks by using subscription services with unlimited access to restaurants from the local area (DoorDash, 2018). Hence, such services allow consumers to have an efficient experience and save time by eliminating the need to look for a restaurant that specifically offers a complimentary delivery service. Similar to the subscription services, OFDS

subscriptions allow consumers to save the information pertaining to ordering from their online profile, facilitating efficient task completion. In addition, OFDS subscription services offer seasonal promotions that include complimentary entrees and desserts (DoorDash, 2020). Based on the discussion above, the following hypothesis was developed.

Hypothesis 1. Consumers' performance expectancy is positively related to their intentions to use OFDS subscription services.

2.8.2 Effort Expectancy

Effort expectancy reflects the perception that a particular system can be used with a low effort by users (Venkatesh et al., 2003). The original TAM (Davis, 1989) confirmed the relationship between performance expectancy and effort expectancy. This relationship has also been validated quite extensively in the hospitality literature (Ayeh, 2015). Effort expectancy was found to be an antecedent of consumers' intentions to use a particular system in a variety of contexts, including hospitality (Ozturk, 2016). When users perceive that a particular IS requires minimum effort, they are likely to utilize such systems to complete their tasks (Kwon et al., 2013). While recent research (Roh & Park, 2019) validated the impact of effort expectancy on the intentions to use OFDS, effort expectancy was not always validated as a significant antecedent of intentions to use IS (Kim, 2016). For example, it was found that effort expectancy was not a significant antecedent of consumers' intentions to use hotel tablet applications (Kim, 2016).

Over time, effort expectancy has been considered an antecedent of a variety of constructs leading to IS adoption (Kang & Namkung, 2019). For instance, Fillieri et al. (2020) indicated that effort expectancy impacts consumers' satisfaction leading to continuous intentions toward user-generated-content (UGC) platforms. Consumers' continuous intentions could be enhanced

as UGC platforms reduce overload issues in their content (Filieri et al., 2020). In addition, effort expectancy was found to be an antecedent of personalization, which eventually influences consumers' intentions to use mobile applications (Kang & Namkung, 2019). Consumers are prone to trust mobile applications that require low effort to navigate (Kang & Namkung, 2019). Morosan (2012) found that consumers are likely to develop positive attitudes toward biometric systems when such systems are easy to utilize, ultimately enhancing consumers' intentions to use them. The hospitality literature on IS adoption also revealed several antecedents of effort expectancy (Ozturk, 2016). For example, consumers with a high level of self-efficacy are likely to utilize cashless payment systems efficiently, which further influences their intentions to use such systems (Ozturk, 2016).

OFDS involve various procedures (e.g., entering payment, delivery information, etc.) to complete online food ordering tasks by requiring minimal effort. OFDS enable consumers to pay with PayPal or Venmo to add more options for online payment. Most importantly, OFDS are designed with intuitive interfaces providing effortless completion of online food ordering tasks, which also applies to subscription services. By doing this, consumers could gain enough experience from the initial stage of utilizing such services. Additionally, OFDS interfaces are user-friendly and prevent confusion in the process of ordering. With OFDS subscription services, consumers navigate the process easily and are less likely to get confused about various aspects of ordering before checking out from the system. OFDS subscriptions waive such fees and reduce the service fee eliminating any confusion while using such systems. Based on the discussion above, the following hypothesis was developed.

Hypothesis 2. Consumers' effort expectancy is positively related to their intention to use OFDS subscription services.

2.8.3 The Relationship Between Effort Expectancy and Performance Expectancy

The original TAM (Davis, 1989) confirmed a significant relationship between effort expectancy and performance expectancy. While the later versions of the theory (e.g., UTAUT2) do not conceptualize this relationship, over time, it has been validated in IS literature, including in the hospitality literature (Morosan, 2012). To date, the research presents inconclusive findings regarding this relationship, most likely due to contextual factors. For example, several studies have conceptualized and validated this relationship in hospitality. Accordingly, consumers have been found to strengthen their perceptions that biometrics are useful once upon perceiving that such systems are easy to use (Morosan, 2012). Similarly, when consumers perceive near field-communication mobile payments as easy to use, they tend to develop perceptions that such systems enhance their food ordering tasks, eventually influencing their intentions to use such services (Ozturk et al., 2017). This relationship recognizes performance expectancy as the primordial antecedent of IS adoption and aligns with recent research on hotel facial recognition systems, where consumers are influenced by the level of effort, which leads to optimizing their authentication task completion in hotels (Morosan, 2020). However, in other contexts, such a relationship was conceptualized but not validated as significant. Specifically, consumers' perceptions of the usefulness of OFDS are not influenced by the level of effort to utilize such services (Zhao & Bacao, 2020).

Today's OFDS subscription services facilitate consumers' food ordering tasks (e.g., enabling customized orders, providing multiple payment options, eliminating delivery fees, etc.). Generally, like all the other contemporary web-based services, OFDS subscription services' user interfaces are designed based on the same principles, carrying consumers toward task completion by guiding them through a set of sequential steps that mimic any typical web purchasing

sequence (e.g., search, evaluation of alternatives, selection, purchase, etc.) (Kotler et al., 2018). Accordingly, consumers may automatically think that the effort necessary for task completion is not different from any other online purchasing task. The subscription service simplifies this sequence by automating some of these steps. As a result, consumers' perceptions of effort are likely to impact consumers' evaluation of the performance of OFDS subscription services, as they are more likely to complete a task efficiently. Thus, the following hypothesis was developed.

Hypothesis 3. Consumers' effort expectancy is positively related to their performance expectancy of OFDS subscription services.

2.8.4 Social Influence

Social influence reflects users' particular behaviors toward a particular IS based on the influences of important referents (e.g., family, friends, coworkers) (Karahanna et al., 1999). Social influence originated in the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975) and was validated as an antecedent of users' intentions to use IS in UTAUT (Venkatesh et al., 2003). Social influence reflects the alignment of consumers' beliefs with the beliefs of the referents, resulting in a tendency of consumers to change their behaviors. As such, social influence has been considered a critical factor that influences consumers' behaviors (Kotler et al., 2018). While the exact role in influencing IS utilization has been debated in general IS literature (Premkumar et al., 2008). Generally, scholars agree that social influence may eventually be a significant factor that will influence IS adoption. In hospitality, the relationship between social influence and behavioral intentions has been validated in various settings, such as hotels (Morosan & DeFranco, 2016), hotel tablet applications (Kim, 2016) and OFDS (Roh & Park, 2019).

Social influence was also found to be an antecedent of a variety of factors that further influence consumers' IS adoption (Sun et al., 2020). For example, social influence impacts on consumer satisfaction, which further affects consumers' intentions to use mobile payments for hotel reservations (Sun et al., 2020). Social influence was also validated as a salient factor in determining consumers' attitudes, affecting consumers' intentions to use restaurant review websites (Salehi-Esfahani & Kang, 2019). Given its role in influencing IS adoption, several studies determined the antecedents of social influence. Thus, several antecedents of social influence have been validated (Bilgihan et al., 2016). As some consumers may perceive that online social networking websites easy to utilize, others may feel social pressure, which further influences their intentions to share their knowledge (Bilgihan et al., 2016).

Today, the rapid growth and availability of OFDS have changed consumers' online ordering experience, and such services have become common practice in the food industry. The number of OFDS users increased in 2020 due to the COVID-19 pandemic and is likely to increase in the following years (Curry, 2021). The number of consumers that order through OFDS has increased due to ease of access and convenience (Sumagaysay, 2020). Moreover, given the broad awareness of such services and the overall scarcity of regular restaurant services during the pandemic, it is likely that a large number of consumers are now aware of such services and recognize the value that they bring. Additionally, the utilization of multi-channel marketing campaigns, especially social media channels, may result in increased awareness and possibly enhanced attitudes of consumers toward OFDS services. Specifically, based on online reviews, consumers' recommendations may influence other consumers to sign up for OFDS subscription services (Chen et al., 2018). Therefore, consumers who are subjected to the influence of close referents (who have high positive attitudes toward OFDS subscription

services) are likely to strengthen their intentions to use OFDS subscription services. Based on the discussion above, the following hypothesis was developed.

Hypothesis 4. Consumers' social influence is positively related to their intentions to use OFDS subscription services.

2.8.5 Perceived Security

Perceived security reflects consumers' perceptions associated with the security of their personal information stored by other entities due to online transactions (Cui et al., 2018).

Perceived security – rather than more objective measures of IS security – has been conceptualized in IS literature as users are generally not capable of fully assessing the security of IS (Morosan & DeFranco, 2016). Generally, given the non-zero risk associated with networked commercial IS and the attractiveness of such systems for cybercriminals, perceived security has emerged as an important aspect of IS adoption. Thus, it was important to determine the role of perceived security in influencing IS adoption. Perceived security was found to be an antecedent of consumers' intentions to use IS (Kim et al., 2010). Specifically, in electronic commerce, consumers tend to use a particular IS when they perceive that IS secures their information during the online payment process (Kim et al., 2010). Similarly, perceived security strengthens the intentions to continue using mobile applications (Wu et al., 2020).

Moreover, perceived security was validated as an antecedent of other factors that lead to IS adoption (Cui et al., 2018). Specifically, perceived security influences consumers' trust, leading to enhanced intentions to use online reservations (Agag & El-Masry, 2016). When consumers encounter a transaction environment that is perceived to be secure, they treat the IS without suspicion, strengthening their intentions to use IS (Cui et al., 2018). In addition, in hospitality, perceived security is considered an antecedent of perceived privacy (Morosan, 2014).

By design, consumers follow typical electronic commerce purchasing sequences when using OFDS. While not all steps are relevant to IS security, some are critical, such as saving payment information or setting up a profile that requires consumers' names and delivery addresses. For example, payment information is required to maintain membership for the subscription services. OFDS allow consumers to add multiple credit cards as well as other methods of payment, such as PayPal, Google Pay, and Venmo. Moreover, consumers may add additional information from various payment methods to obtain benefits (e.g., rewards, cashback, free membership, etc.) offered by OFDS subscription services. The benefits vary depending on the credit card companies and the nature of the partnership with OFDS. OFDS subscription services may be characterized by the same perceptions of IS security as other web-based services. While it is difficult for consumers to ascertain that a certain system is secure or not, consumers may believe that the security of their personal information depends on the ability of the system to maintain its integrity. However, when a breach occurs, consumers may lose control over the personal information they had disclosed and may also lose the potential benefits from the credit card companies that provided the accounts used in partnership with OFDS. Based on the discussion above, the following hypothesis was developed.

Hypothesis 5. Consumers' perceived security is positively related to their intentions to use OFDS subscription services.

2.8.6 Compatibility

Compatibility, originating in Diffusion of Innovation Theory (Rogers, 1962), refers to the level of consistency between an IS and the users' existing values, beliefs, and experiences, which eventually leads to IS adoption (Karahanna et al., 2006). Compatibility was often added to the IS adoption models, as scholars held that the alignment between users' beliefs and how an IS

viewed by potential users is important for adoption. Compatibility was validated as an antecedent of intentions to use IS in hospitality, such as in restaurants (Ozturk et al., 2017), OFDS (Roh & Park, 2019), and airlines (Morosan, 2016). For example, when consumers perceive that NFC-payment technologies fit into their lifestyles, they are likely to use such systems to complete restaurant-related tasks (Ozturk et al., 2017). In addition, Ozturk et al. (2016) confirmed that consumers who perceive mobile hotel booking technologies to be compatible with their lifestyle are likely to engage with such technologies to optimize task completion. Despite the broad support for a relationship between compatibility and intentions to use IS, such a relationship was not always validated in the literature (Belanche et al., 2020).

In other situations, compatibility was used as an antecedent of other factors, which on their own could be instrumental in explaining some other variables that reflect adoption. For example, compatibility was found to be an antecedent of attitudes toward e-commerce platforms (Crespo et al., 2013) and hotel self-service kiosks (Kim & Qu, 2014), which eventually can be impactful in influencing IS adoption. Compatibility was also found to be important in research on travel communities where consumers are prone to develop intentions to participate in online travel communities as they perceive that being a part of online travel communities fulfills their needs, values, and lifestyles (Agag & El-Masry, 2016). Finally, Roh and Park (2019) found that compatibility is relevant to consumers' perceptions of the usefulness of OFDS. For example, if the use of OFDS fits into consumers' lifestyles, consumers are likely to perceive such systems as useful in completing their food ordering tasks (Roh & Park, 2019).

OFDS subscription services have changed how consumers complete their legacy food ordering tasks. For instance, OFDS subscription services may offer personalized offers according to consumer preferences and align with consumers' changing lifestyles. The user interfaces are

designed intuitively but also in line with the design of other commercial and intermediary websites. In addition, the marketing material for OFDS seems to be designed for people who are relatively younger, more engaged with the technology, and able to navigate around multiple offers in a sequence. In addition, as consumers are offered various benefits (e.g., reduced services fees, seasonal promotions, cashback options, etc.), they are likely to perceive that using OFDS subscription services may add value, which would eventually match with their lifestyle. Thus, the higher consumers view that using OFDS subscription services fits into their lifestyles, the more likely they to perceive that such services are characterized by performance. Based on the discussion above, the following hypothesis was developed.

Hypothesis 6. Consumers' compatibility perceptions are positively related to their performance expectancy of using OFDS subscription services.

2.8.7 Convenience Orientation

Convenience orientation represents consumers' perceptions of saving time and effort while utilizing IS (Olsen & Mai, 2013). Specifically, when consumers are convenience-oriented, they tend to utilize the products that offer convenience and save their time and effort (e.g., in-home meals) (Olsen & Mai, 2013). Convenience orientation has been studied in general marketing (Olsen & Mai, 2013) and hospitality (DeFranco & Morosan, 2017). Convenience orientation was recognized as an antecedent of the habit of utilizing hotel networks through consumers' mobile devices (DeFranco & Morosan, 2017). The higher the consumers' convenience orientation, the more they are likely to develop a habit of connecting their mobile devices to hotel wi-fi networks when traveling internationally (DeFranco & Morosan, 2017).

Research on food delivery systems highlighted the impact of convenience orientation on effort expectancy, which in turn was found to influence the intentions to use such systems (Roh

& Park, 2019). This logic applies to situations in which consumers subscribe to OFDS subscription services. In such scenarios, consumers' perceptions of effort may be influenced by the level of convenience orientation; as such, consumers generally seek to optimize the effort necessary for their tasks. In addition, the subscription services may consolidate this relationship, as consumers repeatedly use OFDS services as part of their subscription, enhancing their perceptions that such systems are usable with low effort. In other words, consumers may not be concerned about the effort to utilize such services once they are familiar with the systems. Ultimately, convenience-oriented consumers may evaluate the amount of effort needed to complete their food ordering tasks in the OFDS subscription services context. Thus, the following hypothesis was developed.

Hypothesis 7. Consumers' convenience orientation is positively related to their effort expectancy of using OFDS subscription services.

2.8.8 Intentions to Use OFDS Subscription Services

Intentions to use a particular IS represent users' behavioral responses (Fishbein & Ajzen, 1975) which have been studied in various IS contexts, including hospitality (Morosan & DeFranco 2016). Intentions have been validated as a construct that reflects the most accurate prediction of behavior (Chang, 1998). Intentions have been used in the contexts where the actual behavior is not feasible to measure (Morosan & DeFranco, 2016). Certain IS are not fully utilized by users, such as NFC mobile payments systems (Morosan & DeFranco, 2016). This could be similar to situations when users utilize OFDS subscription services. Therefore, this study utilizes the intentions to use OFDS subscription services as a construct that reflects consumers' actual behaviors in the OFDS context.

The conceptual model for Study 1 is illustrated in Figure 1 below.

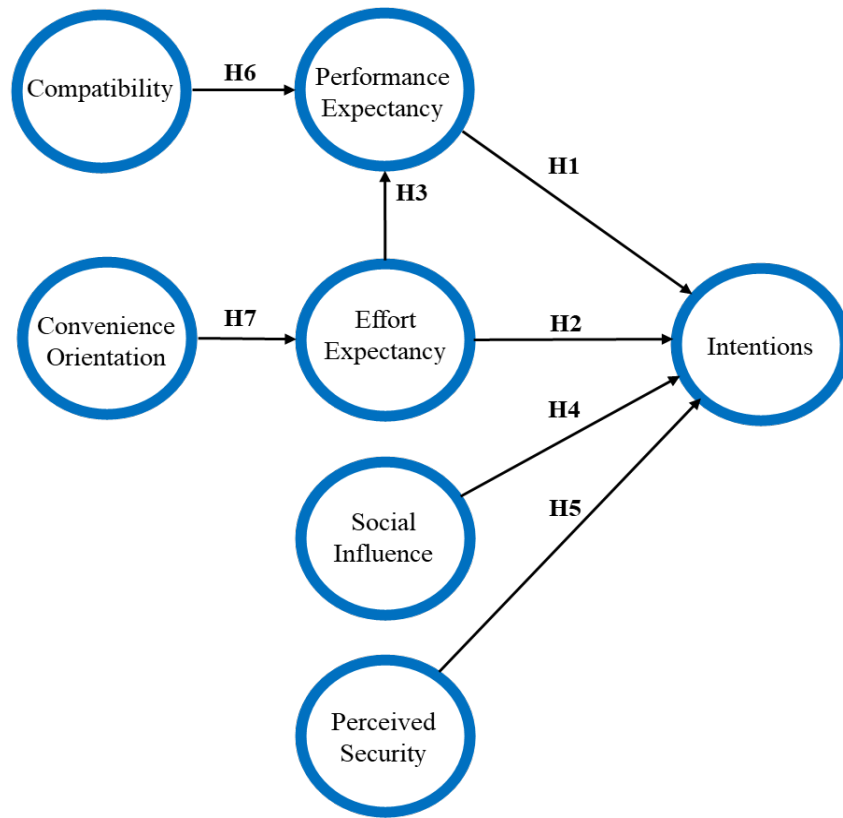


Figure 1. Conceptual Model of Study 1

2.9. Theoretical Justification – Study 2

The theoretical foundation of Study 2 is derived from SET (Blau, 1964). SET was developed in the 1960s and has been used to explain individuals' relationships based on a mutually beneficial exchange (Blau, 1964). SET originates in social psychology and sociology (Lee et al., 2014) and has been used in a variety of fields, including IS (Zhao et al., 2017), management (Sungu et al., 2019), psychology (Chernyak-Hai & Rabenu, 2018) and hospitality (Ray & Bala, 2021).

SET posits that individuals evaluate social exchange based on the costs and benefits incurred because of an interpersonal exchange (Blau, 1964). Such interpersonal exchanges include any human interactions individuals maintain or terminate based on the obtained benefits,

such as costs and rewards (Yan et al., 2016). More specifically, individuals continue to interact if they receive more benefits than the cost due to the interaction (Organ & Konovsky, 1989).

SET has been used as a theoretical foundation to explain underlying processes of users' behaviors toward IS (Yan et al., 2016). For instance, SET has been applied to develop a cost-benefit analysis framework to analyze its impact on users' knowledge sharing behavior (Yan et al., 2016). While perceived benefits (e.g., sense of self-worth, reputation, and social support) motivated users to share their knowledge on online health communities, perceived cost/risk led users to share less knowledge on such online communities (Yan et al., 2016). Similarly, users' behaviors toward disclosing personal information were explained in the context of social networking sites (Liu et al., 2016). Specifically, users opt to disclose personal information as they perceive benefits (e.g., enjoyment, self-presentation, relationship building) but are less likely to disclose personal information when they are concerned about the cost/risk of their action (Liu et al., 2016).

SET was used as a theoretical base to validate the antecedents of loyalty in a variety of fields, including IS (Zheng et al., 2015), management (Colwell et al., 2009), business (Lee et al., 2014), and hospitality (Chen & Hu, 2010). Based on SET, Zheng et al. (2015) concluded that perceived benefits and costs were antecedents of using online brand communities, further influencing consumers' brand loyalty. More specifically, consumers are likely to participate in online brand communities when they receive economic incentives, including gifts or coupons, eventually enhancing their loyalty toward a particular brand (Zheng et al., 2015). Colwell et al. (2009) indicated that the service employees' behaviors could influence consumers' loyalty by maximizing consumers' benefits and minimizing the costs depending on the customer orientation. The employee's customer orientation can enhance consumers' loyalty by focusing on

their needs during the exchange relationship. More specifically, when the service employees meet consumers' needs, they are more likely to minimize the consumers' cost by focusing on their expectations, resulting in loyal consumers. In addition, SET was used to validate the antecedents of consumers' loyalty in the hospitality context. Chen and Hu (2010) indicated that the relational benefits (e.g., social benefits, special treatment benefits, etc.) impacted on consumers' value perceptions, which further influenced consumers' loyalty. SET was not the only theory that was adapted to explain consumers' loyalty.

2.10. Justification for Using SET

Extensive research has examined consumers' loyalty by applying a variety of theories in the hospitality literature, such as Cognitive Evaluation Theory (CET) (Deci & Ryan, 1985), Social Identity Theory (SIT) (Ashfort & Mael, 1989), Stimulus-Organism-Response (SOR) model (Thang & Tan, 2003), and Mehrabian-Russell (MR) model (Mehrabian & Russell, 1974). However, the current study focuses on SET as a theoretical foundation to explain consumers' loyalty due to the following reasons: First, SET will give insights into consumers' perceptions of the risk of using OFDS subscription services. Even though the benefits were found to be antecedents of consumers' loyalty (Chen & Hu, 2010), consumers' loyalty could be influenced by any unexpected consequences, such as risk, that occur during online food ordering tasks. Therefore, SET is an appropriate theory that will reveal the dynamic relationship between perceived benefits and risks (as costs) on consumers' loyalty toward OFDS subscription services. Second, SET provides a theoretical base that comprehensively captures the unique context of consumers' loyalty (Lee et al., 2014), more specifically, loyalty toward OFDS subscription services. Consumers' loyalty to OFDS subscription services might be different from consumers' loyalty toward restaurants. Since consumers place an order from a restaurant through OFDS

subscription services, the consumers may not be necessarily loyal to a specific restaurant. In general, consumers are loyal to a particular restaurant based on the food quality, service quality, and atmosphere (Jang & Namkung, 2009). With the extended MR model, the stimuli (e.g., atmosphere, chef's image, other consumers) were found to be antecedents of consumers' emotions, which influenced consumers' loyalty toward restaurants (Peng et al., 2017). MR model has been used to validate the impact of the physical environment on consumers' emotions and loyalty (Peng et al., 2017). Though OFDS subscription services allow consumers to complete food ordering tasks online, the MR model may not be an appropriate theoretical base for the current study. Since OFDS subscription services offer benefit, including social and economic, consumers' loyalty can be influenced by the types of risk (e.g., psychological, privacy, financial, etc.) due to the characteristics of the systems. Consumers tend to increase their loyalty toward OFDS subscription services while maximizing the benefits (e.g., complimentary delivery fees and reduced service fees, etc.) and minimizing the risk while utilizing such services. Therefore, SET was chosen as a theoretical foundation to investigate the underlying factors of consumers' loyalty toward OFDS subscription services by focusing on consumers' perceptions toward the benefit and risk of using such services.

Benefits are based on the positive consequences of the exchange and are usually considered as services, information, status, etc. (Foa & Foa, 1980). Costs are based on unpleasant events that may be encountered in social exchange (Homans, 1974). More specifically, costs are considered a form of reward foregone, such as time and effort spent without valued return (Emerson, 1976). In the literature, the cost was not always associated with economic outcomes but considered a risk (e.g., social risk and psychological risk) in a social exchange relationship

(Wang et al., 2019). In general, individuals maintain a beneficial exchange to maximize the benefits and minimize the costs (Cropanzano & Mitchell, 2005).

2.11. Perceived Benefits and Risks

Perceived benefits and costs/risks were validated as antecedents of users' behaviors based on SET (Yan et al., 2016). For example, in the context of crowdfunding, perceived benefits (e.g., gaining product-related knowledge, socializing, and enjoying projects) enhance an organization's commitment, resulting in a higher possibility of funding (Zhao et al., 2017). Perceived benefits predict consumers' adoption in IS (Jung et al., 2018), including hospitality (Ray & Bala, 2021). For instance, perceived benefits (e.g., price and service benefits) explain consumers' motives for IS adoption, such as online travel websites and food delivery services (Ray & Bala, 2021). Consumers are likely to prefer good services with low prices and multiple options while utilizing such services (Ray & Bala, 2021). In general, OFDS subscription services offer specific benefits that lead consumers to develop positive attitudes toward such systems. In general, when consumers recognize the benefits, they opt to be loyal to particular services (Dagger & O'Brien, 2010).

Perceived social benefits are the other category of perceived benefits. Social benefits when consumers desire to be a part of specific groups (Candi & Kahn, 2016). Perceived social benefits are considered as an antecedent of intentions to use IS (Tussyadiah, 2016). As OFDS subscription services are becoming popular, consumers may want to utilize such services to be part of specific groups, which could impact consumers' loyalty to such services.

Perceived risk refers to uncertain outcomes occurring before and after completing the purchasing process (Sun, 2014). Perceived risk was found to be an antecedent of IS adoption (Yan et al., 2016), including hospitality (Ozturk et al., 2017). The perceived costs/risks refer to

negative outcomes from exchange relationships, which results in diminishing the sharing of knowledge (Yan et al., 2016). More specifically, perceived costs/risks (e.g., cognitive cost and execution cost) have a negative impact on users' knowledge sharing behavior on online platforms (Yan et al., 2016). More specifically, consumers' perceived risk has an impact on intentions to utilize mobile payment systems (Ozturk et al., 2017) since OFDS subscription services require the use of personal information (e.g., addresses, mobile payments, etc.) that third-party users could use. Such negative consequences can be associated with risk, which may affect consumers' loyalty toward OFDS subscription services

2.12. OFDS Subscription Services in Study 2

OFDS subscription services are expected to grow in big cities and reach large groups of consumers by offering bundles of benefits (e.g., reduced service fees, complimentary delivery fees, cashback, etc.). In general, OFDS subscription services facilitate consumers to order their food items via a single platform by offering benefits (e.g., social and economic benefits). For instance, being part of OFDS subscription services might enhance consumers' self-image among other consumers, leading them to develop social relationships. The need to maintain such social relationships may eventually influence their loyalty toward OFDS subscription services.

Therefore, perceived social benefits are considered as antecedents of loyalty toward OFDS subscriptions in Study 2.

In general, OFDS subscription services allow consumers to take advantage of distinctive offers. It can be argued that unique offers can be relevant to the economic benefits of using OFDS subscription services. More specifically, the economic benefits of subscription services might reduce the overall cost of an order. This could lead consumers to be loyal to OFDS subscription services. Because of this, the concept of perceived economic benefits was added to

Study 2. Overall, perceived benefits (e.g., social benefits and economic benefits) are considered as antecedents of consumers' loyalty toward OFDS subscription services.

Although OFDS subscription services provide unique offers, there might be negative outcomes that could occur due to the characteristics of the system. In general, OFDS interfaces are rooted in the same principles of retail as other websites. Consumers face with uncertainty (e.g., private information could be exposed to others, unexpected charges, etc.) while maintaining valid information to use the subscription services. Such negative consequences can be related to the risk of using OFDS subscription services, which may influence consumers' loyalty toward OFDS subscription services. Therefore, perceived risks were considered an antecedent of consumers' loyalty toward OFDS subscription services, and types of risk (e.g., performance risk, financial risk, time risk, psychological risk, privacy risk, and overall risk) were added to the conceptual model. Overall, Study 2 developed a conceptual model based on SET by considering the cost/benefit analysis to explain the antecedents of loyalty to OFDS subscription services.

2.13. Hypotheses Development for Study 2

2.13.1. Benefit

2.13.1.1. Perceived Social Benefit

Perceived social benefit reflects the perception that makes the consumers feel part of a specific group (Candi & Kahn, 2016). Social benefit involves consumers' improvement in social status among members of social reference groups (Prior, 2013). Consumers receive such benefit when they feel included within a community (Bruhn et al., 2014). Social benefit has been validated as an antecedent of consumers' satisfaction in the consumer behavior literature (Candi & Kahn, 2016), including in hospitality and tourism (Tussyadiah, 2016). In peer-to-peer

accommodation research, consumers were found to become involved in social interactions with the host during their stays (Tussyadiah, 2016). In tourism, consumers interact with each other through virtual online communities to exchange ideas regarding their travel preferences (Wang & Fesenmaier, 2004). In addition, social benefit was validated as a dimension of relational benefit, which was found to impact consumers' loyalty (Chen & Hu, 2010). In this case, social benefit refers to consumers' perceptions of being recognized by employees and having long-term relationships with service firms (Chen & Hu, 2010).

Consumers can utilize previous consumers' evaluations about their experiences which may contribute to developing a sense of online community among the consumers through OFDS. Moreover, consumers may exchange information regarding the subscription services that include consumers' preferences and needs through online communities. As generally businesses tend to observe consumers' chatter on social media, consumers may perceive that their needs are recognized by OFDS through the online community, enhancing their relationship with the subscription services. Therefore, it can be expected that consumers maintain their subscription services as they have a chance to talk about the service and appropriate social benefit from sharing online information. Moreover, consumers may feel like they belong to a special group of people - those who are likely to obtain the benefits of meals delivered to them, to obtain cost incentives, or just to experience the feeling that they on a part of a relationship with the company that could be long lasting. Thus, the benefit that anchors the consumer into the social environment as a result of being a subscriber could be influential in informing the overall benefit of being a subscriber. Therefore, the following hypothesis was developed.

Hypothesis 1a. Perceived social benefit is a dimension of consumers' benefit of using OFDS subscription services.

2.13.1.2. Perceived Economic Benefit

Perceived economic benefit refers to the benefit obtained by engaging in relational exchanges with businesses (e.g., primarily regarding monetary or time-saving benefit) (Gwinner et al., 1998). Consumers who have an ongoing relationship with businesses may be in position to appropriate economic benefit (e.g., discounts) as they repeat their purchasing processes over time (Sheth & Parvatiyar, 1995). Economic benefit has been conceptualized as monetary benefit in the consumer behavior literature, including in hospitality and tourism (De Canio et al., 2020). Specifically, in tourism, the economic benefit has been validated as an antecedent of consumers' bargaining behavior (Tsang et al., 2011) and tourists' preferences for particular hotels (Dedeoğlu et al., 2015). The concept of economic benefit (in the form of cost savings) is applicable to sharing economy in hospitality and is likely to affect consumers' intentions to participate in collaborative consumption (Tussyadiah, 2016). In hospitality, economic benefit was validated as an antecedent of consumers' intentions to use online travel websites and food delivery services (Ray & Bala, 2021). That is, when consumers receive offers and discounts, they are likely to use such services more (Ray & Bala, 2021). Similarly, price benefit is highly relevant to OFDS where consumers utilize such platforms to save costs during online food purchasing (Yeo et al., 2017).

OFDS subscription services provide various offers that eventually result in incentives, which can be represented as monetary benefits (e.g., time and money savings) by consumers. For example, consumers pay reduced service fees for each order as they utilize subscription services, which can translate into savings. In addition, consumers may take advantage of using credit card companies that have a partnership with OFDS. Specifically, consumers can earn points, receive discounts and cash back as they utilize OFDS subscriptions. Consumers may also have access to

personalized promotions based on preferences or previous orders, which may affect their perceptions of OFDS the benefit of subscription services. In line with SET, economic benefit stays at the foundation of the overall benefit resulting from engaging with a commercial entity, as consumers try to maximize the value obtained from such interactions. Therefore, economic benefit is viewed as an important dimension of the perceived benefit of using OFDS subscription services, according to the following hypothesis:

Hypothesis 1b. Perceived economic benefit is a dimension of consumers' benefit of using OFDS subscription services.

2.13.2. Risk

2.13.2.1. Perceived Risk

Consumers' perceived risk reflects the uncertain outcomes that occur both before and after the completion of a purchasing process (Sun, 2014). In the IS literature, various dimensions of risk have been identified, namely (1) perceived performance risk, (2) perceived financial risk, (3) perceived time risk, (4) perceived psychological risk, and (5) perceived privacy risk (Featherman & Pavlou, 2003, Martins et al., 2014, DeFranco & Morosan, 2017). Likely due to contextual factors, not all dimensions of risk were relevant in all the contexts where they were conceptualized. While Kim, Qu and Kim (2009) recognized seven dimensions of risk associated with purchasing airline tickets, DeFranco and Morosan (2017) confirmed only performance, financial, and privacy risks as dimensions of the overall risk regarding consumers' connectivity of mobile devices to hotel wi-fi networks. The literature recommends aligning the conceptual structure of risk with the context and the task-technology environment in which it is examined (DeFranco & Morosan, 2017). In this study, three dimensions of risk were conceptualized as

relevant to the overall concept of risk associated with OFDS subscription, namely perceived privacy risk, perceived performance risk, and perceived overall risk.

2.13.2.2. Perceived Privacy Risk

Perceived privacy risk reflects the loss of consumers' control over their private information upon being exposed to third-party users (Martins et al., 2014). Privacy risk has been considered a serious concern, which inhibits consumers from using mobile payment systems for online purchases (Yang et al., 2015). Privacy risk can be related to the use of OFDS subscription services. For instance, consumers are required to register with OFDS subscription services by providing personal information, such as home or office addresses, payment information, and personal preferences. Similar to other electronic commerce transactions, consumers' personal information might, in theory, be exposed to others in case of a data breach, which may result in becoming hesitant about using such services. This shows that privacy risk is likely to represent an important dimension of risk associated with OFDS subscription services.

Hypothesis 2a. Perceived privacy risk is a dimension of consumers' risk of using OFDS subscription services.

2.13.2.3. Perceived Performance Risk

Perceived performance risk refers to consumers' perceptions about a product or service that does not perform as expected (Featherman & Pavlou, 2003). Performance risk is related to the consumers' use of I.S., which is aligned with consumers' intentions of using mobile payments in online purchasing (Yang et al., 2015). Consumers may try to find a way to utilize the systems even though they face some limitations (e.g., incomplete transactions, being unable to obtain benefits) while utilizing OFDS subscription services. As consumers utilize OFDS subscription services, the delivery fee is waived by the system and shown before consumers

check out from the system. Yet, consumers may have issues such as not receiving complimentary delivery fees before completion of online food ordering tasks. This could cause a negative impact on consumers' experiences with subscription services. Therefore, it can be argued that performance risk could be a critical dimension of risk of using OFDS subscription services, according to the following hypothesis:

Hypothesis 2b. Perceived performance risk is a dimension of consumers' risk of using OFDS subscription services.

2.13.2.4. Perceived Overall Risk

Despite the general of view that risk is a multi-dimensional construct, there have been multiple conceptualizations of risk as an overarching measure (Martins et al., 2014). Such conceptualizations provide a general sense of the risk involved in a commercial activity (Featherman & Pavlou, 2003). More specifically, in the hospitality literature, perceived risk was validated as an antecedent of I.S. adoption (Ray & Bala, 2021) illustrating that consumers are less likely to use online travel websites and food delivery systems if they perceive a threat of using such systems. Such approaches are not necessarily uncommon. For example, specific items or dimensions of constructs are specifically designed to reflect the overall construct, rather than a specific dimension. This is important in contexts such as OFDS subscription services, where the overall evaluation of the risk associated with the utilization of such systems is difficult to attribute to a very specific dimension. For this reason, this study used perceived overall risk as an overarching dimension of risk of using OFDS subscription services, according to the following hypothesis.

Hypothesis 2c. Consumers' perceived overall risk is a dimension of consumers' risk of using OFDS subscription services.

2.13.3. Loyalty toward OFDS Subscription Services

Loyalty is defined as a consumer's commitment to repurchase a particular product or service repetitively without being influenced by marketing efforts (Oliver, 1999). Loyal consumers are more likely to develop a strong relationship with a company or brand versus non-loyal consumers (Kumar et al., 2011). There are two main approaches to conceptualize loyalty in the literature: behavioral and attitudinal loyalty. Behavioral loyalty can be captured by consumers' repurchasing intentions toward a brand of interest (Bowen & Chen, 2001). However, consumers' behaviors alone (i.e., repeat purchasing) do not explain the underlying motivation for consumers' loyalty toward a brand (Chen & Hu, 2010). Therefore, attitudinal measures of loyalty provide insight into consumers' favorable attitudes toward a brand (Rundle-Thiele & Bennett, 2001). Attitudinal measures of loyalty reflect consumers' emotional and psychological commitment to a brand (Bowen & Chen, 2001).

In the hospitality literature, a variety of antecedents of consumer loyalty have been validated, such as satisfaction (Carneiroa et al., 2019), commitment (Yao et al., 2019), and benefit (Garbarino & Johnson, 1999). Consumers opt to repurchase a product or service and spread positive word-of-mouth about the benefit (Garbarino & Johnson, 1999). In addition, service quality has been validated as an antecedent of consumer loyalty, which eventually results in consumers' satisfaction with the service offerings (Orel & Kara, 2014). Several other constructs, such as hedonic and utilitarian features and brand equity, have also been validated as antecedents of loyalty in the context of online booking (Bilgihan et al., 2015). Therefore, it is important for hospitality firms to develop services to meet consumers' needs, which may eventually influence consumers' loyalty (Kandampully et al., 2015).

Loyal consumers could be described as consumers who are likely to pay more and have higher purchasing intentions without considering other products and services (Gracia et al., 2011). In general, consumers' repeated behavior is connected to brand loyalty, which explains the underlying motivation of consumers' repeat their purchases of certain products or services (Rahi et al., 2017). Consumers are likely to refuse to purchase another brand when they develop brand loyalty, even though the competitors' offerings may be tempting (Keller, 2009). However, consumers may give up the brand, including its loyalty programs, which could reflect switching cost (Tanford, 2013). Switching cost is associated with both non-economic cost (e.g., loss of relationship with the brand) and economic cost (e.g., loss of financial benefit) (Han et al., 2011). Consumers switch the brand based on the benefit associated with the loyalty programs (Tanford, 2013). In general, OFDS subscription services offer benefit (e.g., reduced service fees, complimentary delivery fees) and they are still distinct from each other based on the following factors: being available in different locations, having partnerships with different credit card companies, and having different reward systems.

The literature has also recognized the concept of e-loyalty. E-loyalty is referred to as consumers' favorable attitudes toward websites where consumers repurchase a product or service (Bilgihan et al., 2015). The utilitarian features of websites (appealing website designs) have been validated as an antecedent of trust, which influences consumers' e-loyalty of websites. Consumers are more likely to revisit or make an actual purchase from websites when trust has been established in the exchange relationship (Bilgihan et al., 2015). Similarly, trust has been confirmed as an antecedent of consumers' loyalty in the mobile commerce context (Ozturk et al., 2017). Consumers are less likely to utilize mobile hotel booking sites when there is a lack of trust (Ozturk et al., 2017). Consumers could become loyal to OFDS subscription services as they rely

on the service without experiencing any issues while OFDS manage the delivery process. Consumers' evaluation of OFDS subscription services can be enhanced while consumers experience effective delivery service. In addition, the concept of identification has been rooted in social identity theory (Ashforth & Mael, 1989) and has been considered an antecedent of loyalty in the hospitality literature (So et al., 2013). Specifically, when consumers feel part of a brand, specifically a hotel brand, they tend to build a strong relationship with that brand (So et al., 2013). Similarly, consumers can identify themselves with particular OFDS subscription services, which could further influence their relationship with such systems.

Within the broad loyalty literature, there is extensive research on consumers' loyalty in foodservice. For instance, Peng et al. (2017) validated the antecedents of consumers' loyalty toward luxury restaurants. Specifically, stimuli such as food quality, service quality, atmospherics, and other consumers impact consumers' emotions, which further influence their loyalty (Peng et al., 2017). Consumers' perceptions of value and food safety were also validated as antecedents of consumers' loyalty (Cha & Borchgrevink, 2019). In addition, the concept of experiential loyalty has been studied in the hospitality literature to assess the underlying factors of loyalty toward the smart restaurants. Experiential loyalty refers to loyalty developed when consumers commit to repurchase the same product or service in the long term and offer positive WOM (Wu & Cheng, 2018).

Eventually, the literature converges toward the notion that consumers' loyalty is enhanced by loyalty programs through achieving consumer satisfaction and providing benefits (Hua et al., 2018). Generally, when consumers perceive that they receive sufficient benefit for being part of a program that stimulates loyalty, they generally tend to stay within that program and accumulate increasing benefit. Conversely, when consumers perceive a threat to the benefit

provided for being a part of a loyalty program or subscription, they could diminish their intentions to remain loyal or to continue their subscription. This logic has been applied throughout multiple areas of the hospitality industry, but especially in areas that are innately prone to using loyalty programs, such as hotels, airlines, etc. Thus, in line with the calculative processes described by the SET, it is likely that the subscribers of OFDS are likely to continue their subscription as long as they receive benefit but are likely to decrease their motivations to remain as subscribers if they perceive the subscription to be risky. In line with the discussion above, the following hypotheses were developed.

Hypothesis 1. Consumers' benefit of using OFDS subscription services is positively related to their loyalty toward OFDS subscription services.

Hypothesis 2. Consumers' risk of using OFDS subscription services is negatively related to their loyalty toward OFDS subscription services.

The conceptual model for Study 2 is illustrated in Figure 2.

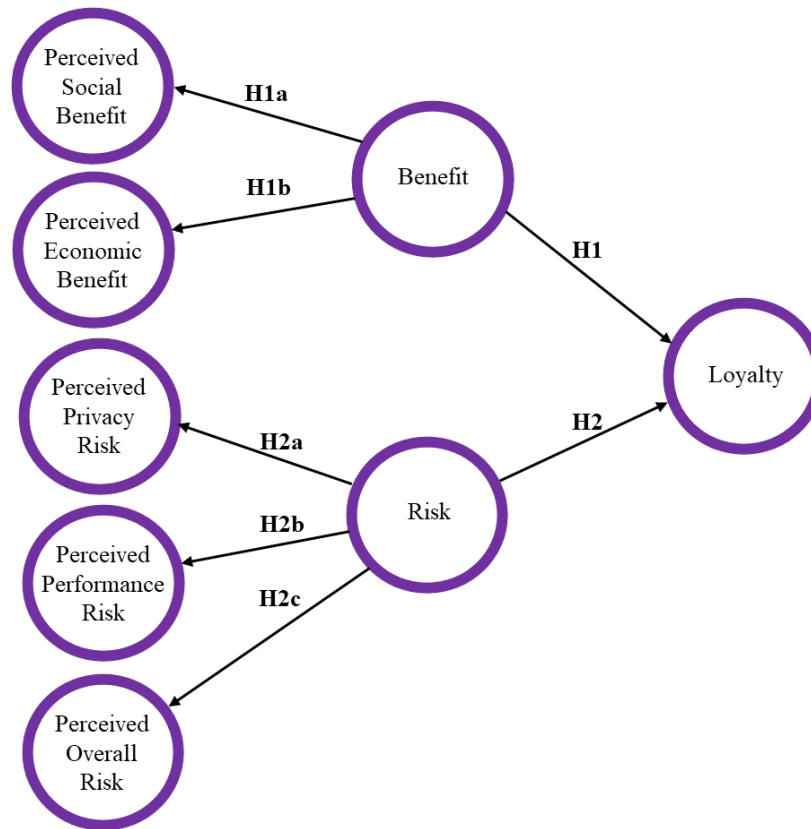


Figure 2. Conceptual Model of Study 2

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CHAPTER III

METHODOLOGY

Chapter 3 discusses the research design and data analyses. Study 1 and Study 2 followed similar procedures to test their respective conceptual models. The following sections discuss the processes of developing measurement instruments, data collection, and data analysis. In addition, this section offers insight into the rationale of the study's sample selection

3.1. Study 1: Antecedents of Using the Online Food Delivery Subscription Services

3.1.1. Measurement Instrument

The data were collected using an online survey instrument. The scales for performance expectancy (5 items), effort expectancy (4 items), and intentions to use OFDS subscription services (4 items) were adapted from Venkatesh et al. (2012). The scales for convenience orientation (6 items) were adapted from Souiden et al. (2019), and the scales for compatibility (3 items) were adapted from Kim and Qu (2014) and Moore and Benbasat (1991). In addition, the scales for perceived security (4 items) were adapted from Vatanasombut et al. (2008). All measurement items were rated using Likert-type items, ranging from Strongly Disagree (1) to Strongly Agree (5).

In addition, the survey instrument included several statements measuring consumers' perceptions of importance of several aspects of using OFDS services. Each statement was measured using Likert-type scales, ranging from 1=Not Important to 5=Extremely Important. Consumers' willingness to pay (in U.S. dollars) for the subscription service were measured using a slider, ranging from \$0 to \$20. In addition, consumers' opinions regarding the price level of such services were measured using Likert-type scales, ranging from 1=Too Low to 5=Too High. Finally, the respondents were asked to answer general behavioral and demographic questions,

such as the frequency of dining in a restaurant, spending on restaurant outings, income, and education. The Qualtrics platform was used to build the survey instrument.

3.1.2. Sampling Rationale

The age structure of the sample was calculated based on data that includes the age information of OFDS users in the U.S. The sample for the current study was determined by aligning the sample's age structure with that of the U.S. Census to reflect actual OFDS users in the U.S. The calculations of the sample involved several steps. Statistical reports from Kantar, Statista (Blumtritt, 2020), and U.S. Census (U.S. Census, 2010) were used to determine the quotas for each age group. Using such reports, the researcher considered the allocation of percentages and sample size to define the counts of OFDS users in each age group. The number of users in each group was found using the population percentages for ages 18 or older in the U.S. Census report (e.g., 18-24, 15%) multiplied by the sample size (600). Then, the findings were multiplied by the average for each group provided by the Kantar report (e.g., 18-24, average 72%). The same calculations were applied for each age group and found as follows 25-34 (average 73%), 35-44 (average 87%), 45-54 (average 43%), 55-64 (average 21%), and 65 years or older (average 16%). The new total users (298) were determined by adding all user counts in each group, for instance, 18-24 users:64, 25-34 users:74, 35-44 users:75, etc. The new users count, for example, 18-24, users:64, was divided by the new total users (298) then, it was found that that 22% of total users would be grouped into the 18-24 age group resulting in 132 users out of approximately 600 total users.

3.1.3. Data Collection

The data were collected by collaborating with a marketing panel company that recruited respondents who were OFDS users in the U.S. A screening question was added to the survey

instrument, asking whether the respondents had placed an order from a restaurant through OFDS during the last 12 months. The respondents who placed an order from a restaurant through OFDS were allowed to continue to the survey. The respondents were then asked to read a scenario that included a basic definition of OFDS and an explanation of how OFDS subscription services worked. A pilot test was conducted with 50 respondents from the same population to prevent any issues before the actual data collection. The pilot test confirmed no issues regarding the demographic structure of respondents, the time spent on the survey completion, and any items that respondents consistently skipped. Then, the marketing panel company sent a total of 19,500 invitations in May 2021 for data collection. A total of 573 respondents (response rate: 3%) were retained after passing the screening question, and after removing the incomplete responses and screening out respondents who failed the attention check question. The response rate is in line with other studies conducted using similar procedures.

3.1.4. Data Analysis

The behavioral characteristics of respondents were analyzed using SPSS Version 26. A Confirmatory Factor Analysis (CFA) was conducted to assess the study's measurement model and a Structural Equation Modeling analysis was used to assess the fit of the research model and test the hypotheses using the Mplus 8 software package.

3.2. Study 2: Consumers' Loyalty toward OFDS Subscription Services

3.2.1. Measurement Instrument

A survey instrument was developed based on the literature in both general IS and hospitality. The scales for all constructs were adapted to capture the constructs that constitute the conceptual model. They were carefully adapted to reflect the OFDS subscription context. Benefit was treated as a second-order construct and consisted of two dimensions, social benefit, and

economic benefit. The scales for perceived social benefit (3 items) and perceived economic benefit (4 items) were adapted from Tussyadiah (2016). Risk was also conceptualized as a second-order construct, while the scales for the first-order construct were adapted from Featherman and Pavlou (2003). Risk consisted of the following dimensions: perceived privacy risk (3 items), perceived performance risk (5 items), and perceived overall risk (5 items). In addition, the scales for loyalty toward OFDS subscription services (4 items) were adapted from Jani and Han (2014). All measurement items were rated using a Likert-type scale, ranging from 1=Strongly Disagree to 5=Strongly Agree.

Several statements were included to determine consumers' perceptions of importance of several aspects that may be important for OFDS use (e.g., speed of service, personalized offers), or when subscribing to OFDS. Such statements were measured using Likert-type scales, ranging from 1=Not important to 5=Extremely important. Consumers' willingness to pay (in U.S. dollars) for the subscription services were measured using sliders, with values from \$0 to \$20. In addition, consumers' opinions regarding the price level of such services were also measured using Likert-type scales, ranging from 1=Too Low to 5=Too High. Respondents were asked to provide basic demographic and behavioral information (e.g., gender, income, the frequency of ordering through OFDS (as a subscriber), and spending (as a subscriber). The instrument was developed and published using the Qualtrics survey environment.

3.2.2. Data Collection

The services of a marketing panel company were secured to recruit the sample of consumers necessary for this study. The sample used in Study 2 was based on two screening questions. The first screening question asked whether the respondents had placed an order from a restaurant through OFDS during a period of 12 months prior to the study. The second screening

question asked whether the respondents had subscribed to an OFDS during a period of 12 months prior to the study. The respondents who failed answering two screening questions were screened out from the study and then 262 respondents (response rate: 1%) were retained. OFDS subscription services are still relatively new, therefore a sample size of 262 respondents aligned with the sample size requirements suggested by Hair et al. (2009) for the proposed analysis.

3.2.3. Data Analysis

A pilot test using 50 respondents from the actual population was conducted to ensure that data collection proceeds without problem. Specifically, issues such as respondents' progression through the survey, skipping patterns, or responses to attention check question were monitored. As no issues were found, the full data collection was conducted in May 2021. The marketing panel company sent 19,500 email invitations to their panelists. total number of 262 respondents (1%) were retained in the analysis, reflecting complete responses from respondents who pass the attention and screening questions.

The population was selected to reflect the type of users likely to purchase from OFDS (Blumbritt, 2020; Kantar, 2021; U.S. Census, 2010). The desired sample's demographic composition reflected the most common characteristics of the users of OFDS services, as described by multiple reports and the preliminary analyses provided by the marketing panel company – Kantar. Upon accessing the survey, the respondents had to comply with the IRB requirements, after which they answered the screening questions. They were also directed to read a scenario, which provided an explanation about OFDS and described how OFDS subscription services work.

To confirm that there were no issues with the mechanics of the data collection, a pilot test involving 50 respondents from the actual population of the study was conducted in May 2021.

As there were no issues with the data collection procedure, the full data collection was conducted in May 2021. The marketing panel company sent 19,500 email invitations to their panelists. The invitations included a link to the survey. A total number of 262 respondents (1%) were kept, which reflected only the respondents who passed both screening questions.

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Chapter IV

Antecedents of Using the Online Food Delivery Subscription Services

Abstract

Even though consumers' interest in Online Food Delivery Systems (OFDS), especially the subscription services, has increased, hospitality scholars are only beginning to understand the use of subscription services. To address this major gap, the current study aimed to explicate consumers' intentions to use OFDS subscription services. The study revisited the Unified Theory of Acceptance and Use of Technology (UTAUT2). A typical methodology that involved a Confirmatory Factor Analysis, followed by Structural Equation Modeling, was used to test the hypotheses using a sample of 573 OFDS users from the U.S. The results revealed that social influence has the greatest impact on consumers' intentions to use OFDS subscription services, while effort expectancy and perceived security have relatively lower impacts on consumers' intentions to use OFDS subscription services. In addition, the study revealed the role of compatibility and convenience orientation in shaping consumers' OFDS system perceptions (e.g., performance and effort expectancy). The results provided several theoretical and managerial implications and opened new avenues for future research.

Keywords: online food delivery systems (OFDS), subscription services, UTAUT2, intentions.

4.1. Introduction

Online Food Delivery Systems (OFDS) have rapidly evolved into an important channel bringing consumers and restaurants on one online platform (Rivera, 2019). So far, several popular OFDS have emerged, such as DoorDash, Grubhub, and UberEATS. The main goal of such systems is to facilitate consumers' online ordering tasks. It is important to distinguish between the multiple types of services that address the food ordering task of consumers, especially during/post-pandemic. OFDS distinguish themselves from vendors of ingredients for home cooking (e.g., Omaha Steaks) or companies that deliver groceries to consumers residences (e.g., Favor Delivery). A typical OFDS consists of a website where consumers and choose foodservice products provided by various restaurants that partner with OFDS. Generally, consumers visit an OFDS website, choose a restaurant, choose menu items, then pay, and select a method of delivery upon which the order is delivered to the consumers' location (e.g., residence, office).

As OFDS truly facilitate the online ordering task and optimize the search for foodservice items, OFDS have become popular in recent years, especially during the COVID-19 pandemic. A report published in August 2021 illustrated that approximately 50% of U.S. consumers have ordered from OFDS at least once (Perri, 2021). As the demand for OFDS increased, research has intensified on consumers' OFDS-related behaviors, such as intentions to use (Gunden et al., 2020), purchasing (Cai & Leung, 2020), and continuance intentions of using OFDS during the COVID-19 pandemic (Zhao & Bacao, 2020). Specifically, it was found that core system perceptions, such as perceived usefulness, strongly influence consumers' intentions to use OFDS (Gunden et al., 2020). Moreover, it was found that satisfaction was a key antecedent of consumers' continuance intentions of using OFDS (Zhao & Bacao, 2020). Ultimately, consumers

are strongly influenced by framed advertising, which is impactful on their intentions to purchase from OFDS (Cai & Leung, 2020). However, despite the increasing interest in OFDS, the literature is only emerging and does not yet provide a unified set of findings that explicates consumers behavior regarding OFDS.

In parallel with the development of OFDS, multiple successful businesses have begun to deploy and consolidate subscription services/programs. This has been facilitated by the development in digital technology and consumers' increasing appetite for customized services (Kim & Kim, 2020). In general, consumers are motivated by the tangible benefits (e.g., lower costs and increased personalization) offered by subscription services, further increasing the demand for such services (Chen et al., 2018). Moreover, the utilization of subscription services can be facilitated by the type of task that consumers seek to accomplish. For example, simple, low cost, regular and repetitive tasks (e.g., streaming movies or digital content, accessing software, ordering food from restaurants) are commonly facilitated by subscription services, fundamentally based on online ordering systems. OFDS subscriptions services make no exception.

OFDS subscription services have become an important part of OFDS, as the major OFDS recently launched subscription services (Bandoim, 2020). Consumers gain benefits from subscription services (e.g., limited deals on menu items, reduced delivery or service fees, etc.) as they pay a monthly subscription fee (typically around \$9.99) (Barkho, 2019). In addition to the benefits offered to consumers, subscription services help the restaurant industry to generate additional revenue from existing consumers (McCarthy, 2020). OFDS subscription services are different from the typical information systems for three reasons: (1) subscription involves a long-term commitment; therefore, a continuous reevaluation of the factors that facilitate task

completion, (2) subscriptions can be cancelled anytime, therefore reducing the risk associated within a long-term commitment, and (3) subscriptions are likely to reduce the search for alternatives. Given such characteristics, the motivational structures that drive consumers to use such systems are substantially different from other typical hospitality systems (e.g., self-service kiosks, biometric systems), which warrants a standalone investigation. However, despite the growing academic interest in such services (Philbrook, 2021), the factors influencing consumers' intentions to use OFDS subscription services remain unknown, marking a major research gap.

Most technology adoption literature is based on comprehensive conceptual models that explain users' intentions to use a particular system (Davis, 1989). Theoretical models such as the Technology Acceptance Model (TAM) (Davis, 1989) and Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) examine relationships between core system perceptions (e.g., performance expectancy, effort expectancy) and intentions to use a system. However, while several studies have examined the antecedents of such important system perceptions, the literature does not provide a unified set of constructs that influence the core system perceptions. Thus, it remains unknown what drives consumers to form such perceptions, marking a second research gap. The technology literature recognizes the inherent security risk associated with using information systems. Yet, consumers typically pay attention to other factors that may drive their utilization of a system (Johnson et al., 2018). Thus, it is easy to overlook important system characteristics, such as security. Security is especially important with respect to OFDS subscription, as the nature of the subscription model requires users to provide personal/payment information with the expectation to be protected. Yet, the role of perceived security in influencing intentions to use subscription services has not been elucidated, marking the third critical gap.

This study developed a comprehensive model based on the UTAUT2 model (Venkatesh et al., 2012) to address the three literature gaps. The study revisited the UTAUT2 model by retaining three independent variables from the original model (i.e., performance expectancy, effort expectancy, and social influence) and removed variables such as facilitating conditions, hedonic motivation, price value, and habit as they were not substantially relevant to the task-technology environment examined in this study. Instead, to best capture this environment, the UTAUT2 model was reconstructed with three additional constructs: (1) perceived security (Cui et al., 2018), (2) compatibility (Ozturk et al., 2017), and (3) convenience orientation (Roh & Park, 2019). The main goal of the study is to examine consumers' intentions to use OFDS subscription services based on a conceptual model derived from the UTAUT2. The study aimed to accomplish three specific objectives: (1) investigating the key antecedents influencing consumers' intentions to use OFDS subscription services, (2) explaining the role of compatibility and convenience orientation in influencing two core perceptions of OFDS subscription services, namely performance expectancy and effort expectancy, and (3) examining the role of perceived security in influencing consumers' intentions to use OFDS subscription services.

4.2. Review of Literature

4.2.1. Theoretical Foundation

The study's conceptual model was built on the UTAUT2 (Venkatesh et al., 2012) to explicate consumers' intention to use OFDS subscription services. The conceptual model provided the theoretical basis that captured consumers' adoption of OFDS subscription services. The UTAUT2 model was chosen as a primary theoretical foundation for the study due to two reasons: (1) it provides a comprehensive theoretical basis to explain behavioral intentions (Venkatesh et al., 2003), (2) it captures the unique aspect of food ordering tasks in the consumer

context (Gunden et al., 2020). The study retained three original constructs: performance expectancy, effort expectancy, and social influence, and added three constructs: perceived security, compatibility, and convenience.

Several constructs innate to UTAUT2 have not been included in the conceptual model. Facilitating conditions were also not included as substantial technical infrastructure or training was unnecessary for consumers to complete food ordering tasks. Every consumer with access to the Internet could eventually become a subscriber. Also, the model did not include hedonic motivation as consumers could generally develop a good understanding of OFDS functionality due to their previous experiences with OFDS or other ordering systems. The price value was also not included in the model as OFDS offer relatively standardized pricing and occasional discounts (e.g., reduced services fees, personalized offers, complimentary delivery fees, etc.). In addition, the habit was not included as the concept of compatibility reflects consumers' characteristics that can explain the use of OFDS subscription services at a more detailed level.

The IS literature has investigated several constructs that influence consumers' intentions to use such services. For instance, Gunden et al. (2020) reconstructed UTAUT2 by adding three constructs (e.g., impulse buying tendency, congruity with self-image, and mindfulness) to examine consumers' adoption of OFDS. Performance expectancy remains the main antecedent of consumers' intentions to use OFDS, while perceived self-image was tied with consumers' intentions to use such services. UTAUT2 was also extended by constructs such as confirmation, perceived task-technology fit, and satisfaction as antecedents of consumers' continuance intentions of using OFDS (Zhao & Bacao, 2020). Although the research is still emerging, such findings provided a comprehensive pool of constructs, which stayed at the foundation of this conceptual model. The conceptual model of this study is illustrated in Figure 1 below.

<Insert Figure 1.>

4.2.2. Hypotheses Development

4.2.2.1 Performance Expectancy

Performance expectancy originates in TAM (Davis, 1989) and reflects the perception that information systems (IS) facilitate users' task completion better than rival systems. Performance expectancy has been confirmed as a strong antecedent of consumers' intentions to use IS in numerous contexts, including hospitality (Okumus et al., 2018). Performance expectancy (or usefulness) has been mostly conceptualized as an antecedent of the main concept reflecting IS adoption (e.g., attitudes, intentions to use, actual use behavior), establishing a fundamental conceptual link that reflects the main motivation behind IS adoption. Specifically, the adoption of various IS predicated upon the ability of the system to guide the consumer to task completion, even in the absence of other factors influencing the system use. As a core construct in most adoption theories, performance expectancy was found to influence a variety of factors that lead to IS adoption. For example, Kim et al. (2016) showed that consumers' attachment to IS was influenced by performance expectancy. Specifically, when consumers encounter systems characterized by usefulness, they become attached to the IS, which influences their behavioral intentions to use such systems.

The research on IS adoption in hospitality confirmed several antecedents of performance expectancy. For example, information quality was found to be an antecedent of the performance expectancy of travel review websites, leading to an impact on consumers' purchasing intentions (Wang & Li, 2019). In addition, Kaushik and Rahman (2017) confirmed that optimism and innovativeness were antecedents of performance expectancy, which further influence consumers' intentions to use self-service technologies (SST) in hospitality. Moreover, consumers'

perceptions of the usefulness of travel websites are enhanced by relevant and accurate information provided on websites (Wang & Li, 2019). In addition, Morosan (2014) confirmed the impact of personalization on performance expectancy, which further influences consumers' intentions to purchase ancillary air travel services.

As a core construct in IS adoption theory, performance expectancy was found to be an antecedent of consumers' intentions to use IS in hospitality (Morosan & DeFranco, 2016), as well as OFDS (Roh & Park, 2019). Consumers' intentions to use such services could be stimulated by developing effective interfaces for food ordering (Gunden et al., 2020). Indirect relationships between performance expectancy and intentions to use IS were also validated. For example, the functionality of OFDS impact consumers' satisfaction, which leads to consumers' continuous intentions of OFDS's usage (Zhao & Bacao, 2020).

In general, rich information relative to products or services aids consumers to complete online purchases while saving time, which results in enhanced consumers' intentions to use OFDS (Yeo et al., 2017). OFDS offer a large amount of information provided by a variety of restaurants to help consumers complete online ordering tasks from a single platform. Moreover, consumers can optimize their ordering tasks by using subscription services with unlimited access to restaurants from the local area (DoorDash, 2018). Hence, such services allow consumers to have an efficient experience and save time by eliminating the need to look for a restaurant that specifically offers a complimentary delivery service. Similar to the subscription services, OFDS subscriptions allow consumers to save the information pertaining to ordering from their online profile, facilitating efficient task completion. In addition, OFDS subscription services offer seasonal promotions that include complimentary entrees and desserts (DoorDash, 2020). Based on the discussion above, the following hypothesis was developed.

Hypothesis 1. Consumers' performance expectancy is positively related to their intentions to use OFDS subscription services.

4.2.2.2 Effort Expectancy

Effort expectancy reflects the perception that a particular system can be used with a low effort by users (Venkatesh et al., 2003). The original TAM (Davis, 1989) confirmed the relationship between performance expectancy and effort expectancy. This relationship has also been validated quite extensively in the hospitality literature (Ayeh, 2015). Effort expectancy was found to be an antecedent of consumers' intentions to use a particular system in a variety of contexts, including hospitality (Ozturk, 2016). When users perceive that a particular IS requires minimum effort, they are likely to utilize such systems to complete their tasks (Kwon et al., 2013). While recent research (Roh & Park, 2019) validated the impact of effort expectancy on the intentions to use OFDS, effort expectancy was not always validated as a significant antecedent of intentions to use IS (Kim, 2016). For example, it was found that effort expectancy was not a significant antecedent of consumers' intentions to use hotel tablet applications (Kim, 2016).

Over time, effort expectancy has been considered an antecedent of a variety of constructs leading to IS adoption (Kang & Namkung, 2019). For instance, Fillieri et al. (2020) indicated that effort expectancy impacts consumers' satisfaction leading to continuous intentions toward user-generated-content (UGC) platforms. Consumers' continuous intentions could be enhanced as UGC platforms reduce overload issues in their content (Filieri et al., 2020). In addition, effort expectancy was found to be an antecedent of personalization, which eventually influences consumers' intentions to use mobile applications (Kang & Namkung, 2019). Consumers are prone to trust mobile applications that require low effort to navigate (Kang & Namkung, 2019).

Morosan (2012) found that consumers are likely to develop positive attitudes toward biometric systems when such systems are easy to utilize, ultimately enhancing consumers' intentions to use them. The hospitality literature on IS adoption also revealed several antecedents of effort expectancy (Ozturk, 2016). For example, consumers with a high level of self-efficacy are likely to utilize cashless payment systems efficiently, which further influences their intentions to use such systems (Ozturk, 2016).

OFDS involve various procedures (e.g., entering payment, delivery information, etc.) to complete online food ordering tasks by requiring minimal effort. OFDS enable consumers to pay with PayPal or Venmo to add more options for online payment. Most importantly, OFDS are designed with intuitive interfaces providing effortless completion of online food ordering tasks, which also applies to subscription services. By doing this, consumers could gain enough experience from the initial stage of utilizing such services. Additionally, OFDS interfaces are user-friendly and prevent confusion in the process of ordering. With OFDS subscription services, consumers navigate the process easily and are less likely to get confused about various aspects of ordering before checking out from the system. OFDS subscriptions waive such fees and reduce the service fee eliminating any confusion while using such systems. Based on the discussion above, the following hypothesis was developed.

Hypothesis 2. Consumers' effort expectancy is positively related to their intention to use OFDS subscription services.

4.2.2.3 The relationship between Effort Expectancy and Performance Expectancy

The original TAM (Davis, 1989) confirmed a significant relationship between effort expectancy and performance expectancy. While the later versions of the theory (e.g., UTAUT2) do not conceptualize this relationship, over time, it has been validated in IS literature, including

in the hospitality literature (Morosan, 2012). To date, the research presents inconclusive findings regarding this relationship, most likely due to contextual factors. For example, several studies have conceptualized and validated this relationship in hospitality. Accordingly, consumers have been found to strengthen their perceptions that biometrics are useful once upon perceiving that such systems are easy to use (Morosan, 2012). Similarly, when consumers perceive near field-communication mobile payments as easy to use, they tend to develop perceptions that such systems enhance their food ordering tasks, eventually influencing their intentions to use such services (Ozturk et al., 2017). This relationship recognizes performance expectancy as the primordial antecedent of IS adoption and aligns with recent research on hotel facial recognition systems, where consumers are influenced by the level of effort, which leads to optimizing their authentication task completion in hotels (Morosan, 2020). However, in other contexts, such a relationship was conceptualized but not validated as significant. Specifically, consumers' perceptions of the usefulness of OFDS are not influenced by the level of effort to utilize such services (Zhao & Bacao, 2020).

Today's OFDS subscription services facilitate consumers' food ordering tasks (e.g., enabling customized orders, providing multiple payment options, eliminating delivery fees, etc.). Generally, like all the other contemporary web-based services, OFDS subscription services' user interfaces are designed based on the same principles, carrying consumers toward task completion by guiding them through a set of sequential steps that mimic any typical web purchasing sequence (e.g., search, evaluation of alternatives, selection, purchase, etc.) (Kotler et al., 2018). Accordingly, consumers may automatically think that the effort necessary for task completion is not different from any other online purchasing task. The subscription service simplifies this sequence by automating some of these steps. As a result, consumers' perceptions of effort are

likely to impact consumers' evaluation of the performance of OFDS subscription services, as they are more likely to complete a task efficiently. Thus, the following hypothesis was developed.

Hypothesis 3. Consumers' effort expectancy is positively related to their performance expectancy of OFDS subscription services.

4.2.2.4 Social Influence

Social influence reflects users' particular behaviors toward a particular IS based on the influences of important referents (e.g., family, friends, coworkers) (Karahanna et al., 1999). Social influence originated in the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975) and was validated as an antecedent of users' intentions to use IS in UTAUT (Venkatesh et al., 2003). Social influence reflects the alignment of consumers' beliefs with the beliefs of the referents, resulting in a tendency of consumers to change their behaviors. As such, social influence has been considered a critical factor that influences consumers' behaviors (Kotler et al., 2018). While the exact role in influencing IS utilization has been debated in general IS literature (Premkumar et al., 2008). Generally, scholars agree that social influence may eventually be a significant factor that will influence IS adoption. In hospitality, the relationship between social influence and behavioral intentions has been validated in various settings, such as hotels (Morosan & DeFranco, 2016), hotel tablet applications (Kim, 2016) and OFDS (Roh & Park, 2019).

Social influence was also found to be an antecedent of a variety of factors that further influence consumers' IS adoption (Sun et al., 2020). For example, social influence impacts on consumer satisfaction, which further affects consumers' intentions to use mobile payments for hotel reservations (Sun et al., 2020). Social influence was also validated as a salient factor in

determining consumers' attitudes, affecting consumers' intentions to use restaurant review websites (Salehi-Esfahani & Kang, 2019). Given its role in influencing IS adoption, several studies determined the antecedents of social influence. Thus, several antecedents of social influence have been validated (Bilgihan et al., 2016). As some consumers may perceive that online social networking websites easy to utilize, others may feel social pressure, which further influences their intentions to share their knowledge (Bilgihan et al., 2016).

Today, the rapid growth and availability of OFDS have changed consumers' online ordering experience, and such services have become common practice in the food industry. The number of OFDS users increased in 2020 due to the COVID-19 pandemic and is likely to increase in the following years (Curry, 2021). The number of consumers that order through OFDS has increased due to ease of access and convenience (Sumagaysay, 2020). Moreover, given the broad awareness of such services and the overall scarcity of regular restaurant services during the pandemic, it is likely that a large number of consumers are now aware of such services and recognize the value that they bring. Additionally, the utilization of multi-channel marketing campaigns, especially social media channels, may result in increased awareness and possibly enhanced attitudes of consumers toward OFDS services. Specifically, based on online reviews, consumers' recommendations may influence other consumers to sign up for OFDS subscription services (Chen et al., 2018). Therefore, consumers who are subjected to the influence of close referents (who have high positive attitudes toward OFDS subscription services) are likely to strengthen their intentions to use OFDS subscription services. Based on the discussion above, the following hypothesis was developed.

Hypothesis 4. Consumers' social influence is positively related to their intentions to use OFDS subscription services.

4.2.2.5 *Perceived Security*

Perceived security reflects consumers' perceptions associated with the security of their personal information stored by other entities due to online transactions (Cui et al., 2018).

Perceived security – rather than more objective measures of IS security – has been conceptualized in IS literature as users are generally not capable of fully assessing the security of IS (Morosan & DeFranco, 2016). Generally, given the non-zero risk associated with networked commercial IS and the attractiveness of such systems for cybercriminals, perceived security has emerged as an important aspect of IS adoption. Thus, it was important to determine the role of perceived security in influencing IS adoption. Perceived security was found to be an antecedent of consumers' intentions to use IS (Kim et al., 2010). Specifically, in electronic commerce, consumers tend to use a particular IS when they perceive that IS secures their information during the online payment process (Kim et al., 2010). Similarly, perceived security strengthens the intentions to continue using mobile applications (Wu et al., 2020).

Moreover, perceived security was validated as an antecedent of other factors that lead to IS adoption (Cui et al., 2018). Specifically, perceived security influences consumers' trust, leading to enhanced intentions to use online reservations (Agag & El-Masry, 2016). When consumers encounter a transaction environment that is perceived to be secure, they treat the IS without suspicion, strengthening their intentions to use IS (Cui et al., 2018). In addition, in hospitality, perceived security is considered an antecedent of perceived privacy (Morosan, 2014).

By design, consumers follow typical electronic commerce purchasing sequences when using OFDS. While not all steps are relevant to IS security, some are critical, such as saving payment information or setting up a profile that requires consumers' names and delivery addresses. For example, payment information is required to maintain membership for the

subscription services. OFDS allow consumers to add multiple credit cards as well as other methods of payment, such as PayPal, Google Pay, and Venmo. Moreover, consumers may add additional information from various payment methods to obtain benefits (e.g., rewards, cashback, free membership, etc.) offered by OFDS subscription services. The benefits vary depending on the credit card companies and the nature of the partnership with OFDS. OFDS subscription services may be characterized by the same perceptions of IS security as other web-based services. While it is difficult for consumers to ascertain that a certain system is secure or not, consumers may believe that the security of their personal information depends on the ability of the system to maintain its integrity. However, when a breach occurs, consumers may lose control over the personal information they had disclosed and may also lose the potential benefits from the credit card companies that provided the accounts used in partnership with OFDS. Based on the discussion above, the following hypothesis was developed:

Hypothesis 5. Consumers' perceived security is positively related to their intentions to use OFDS subscription services.

4.2.2.6 Compatibility

Compatibility, originating in Diffusion of Innovation Theory (Rogers, 1962), refers to the level of consistency between an IS and the users' existing values, beliefs, and experiences, which eventually leads to IS adoption (Karahanna et al., 2006). Compatibility was often added to the IS adoption models, as scholars held that the alignment between users' beliefs and how an IS viewed by potential users is important for adoption. Compatibility was validated as an antecedent of intentions to use IS in hospitality, such as in restaurants (Ozturk et al., 2017), OFDS (Roh & Park, 2019), and airlines (Morosan, 2016). For example, when consumers perceive that NFC-payment technologies fit into their lifestyles, they are likely to use such systems to complete

restaurant-related tasks (Ozturk et al., 2017). In addition, Ozturk et al. (2016) confirmed that consumers who perceive mobile hotel booking technologies to be compatible with their lifestyle are likely to engage with such technologies to optimize task completion. Despite the broad support for a relationship between compatibility and intentions to use IS, such a relationship was not always validated in the literature (Belanche et al., 2020).

In other situations, compatibility was used as an antecedent of other factors, which on their own could be instrumental in explaining some other variables that reflect adoption. For example, compatibility was found to be an antecedent of attitudes toward e-commerce platforms (Crespo et al., 2013) and hotel self-service kiosks (Kim & Qu, 2014), which eventually can be impactful in influencing IS adoption. Compatibility was also found to be important in research on travel communities where consumers are prone to develop intentions to participate in online travel communities as they perceive that being a part of online travel communities fulfills their needs, values, and lifestyles (Agag & El-Masry, 2016). Finally, Roh and Park (2019) found that compatibility is relevant to consumers' perceptions of the usefulness of OFDS. For example, if the use of OFDS fits into consumers' lifestyles, consumers are likely to perceive such systems as useful in completing their food ordering tasks (Roh & Park, 2019).

OFDS subscription services have changed how consumers complete their legacy food ordering tasks. For instance, OFDS subscription services may offer personalized offers according to consumer preferences and align with consumers' changing lifestyles. The user interfaces are designed intuitively but also in line with the design of other commercial and intermediary websites. In addition, the marketing material for OFDS seems to be designed for people who are relatively younger, more engaged with the technology, and able to navigate around multiple offers in a sequence. In addition, as consumers are offered various benefits (e.g., reduced

services fees, seasonal promotions, cashback options, etc.), they are likely to perceive that using OFDS subscription services may add value, which would eventually match with their lifestyle. Thus, the higher consumers view that using OFDS subscription services fits into their lifestyles, the more likely they to perceive that such services are characterized by performance. Based on the discussion above, the following hypothesis was developed.

Hypothesis 6. Consumers' compatibility perceptions are positively related to their performance expectancy of using OFDS subscription services.

4.2.2.7 Convenience Orientation

Convenience orientation represents consumers' perceptions of saving time and effort while utilizing IS (Olsen & Mai, 2013). Specifically, when consumers are convenience-oriented, they tend to utilize the products that offer convenience and save their time and effort (e.g., in-home meals) (Olsen & Mai, 2013). Convenience orientation has been studied in general marketing (Olsen & Mai, 2013) and hospitality (DeFranco & Morosan, 2017). Convenience orientation was recognized as an antecedent of the habit of utilizing hotel networks through consumers' mobile devices (DeFranco & Morosan, 2017). The higher the consumers' convenience orientation, the more they are likely to develop a habit of connecting their mobile devices to hotel wi-fi networks when traveling internationally (DeFranco & Morosan, 2017).

Research on food delivery systems highlighted the impact of convenience orientation on effort expectancy, which in turn was found to influence the intentions to use such systems (Roh & Park, 2019). This logic applies to situations in which consumers subscribe to OFDS subscription services. In such scenarios, consumers perceptions of effort may be influenced by the level of convenience orientation; as such, consumers generally seek to optimize the effort necessary for their tasks. In addition, the subscription services may consolidate this relationship,

as consumers repeatedly use OFDS services as part of their subscription, enhancing their perceptions that such systems are usable with low effort. In other words, consumers may not be concerned about the effort to utilize such services once they are familiar with the systems. Ultimately, convenience-oriented consumers may evaluate the amount of effort needed to complete their food ordering tasks in the OFDS subscription services context. Thus, the following hypothesis was developed.

Hypothesis 7. Consumers' convenience orientation is positively related to their effort expectancy of using OFDS subscription services.

4.2.2.8 Intentions to Use OFDS Subscription Services

Intentions to use a particular IS represent users' behavioral responses (Fishbein & Ajzen, 1975) which have been studied in various IS contexts, including hospitality (Morosan & DeFranco 2016). Intentions have been validated as a construct that reflects the most accurate prediction of behavior (Chang, 1998). Intentions have been used in the contexts where the actual behavior is not feasible to measure (Morosan & DeFranco, 2016). Certain IS are not fully utilized by users, such as NFC mobile payments systems (Morosan & DeFranco, 2016). This could be similar to situations when users utilize OFDS subscription services. Therefore, this study utilizes the intentions to use OFDS subscription services as a construct that reflects consumers' actual behaviors in the OFDS context.

4.3. Methods

4.3.1 Measurement Instrument

The data were collected using an online survey instrument. The scales for performance expectancy (5 items), effort expectancy (4 items), and intentions to use OFDS subscription services (4 items) were adapted from Venkatesh et al. (2012). The scales for convenience

orientation (6 items) were adapted from Souiden et al. (2019), and the scales for compatibility (3 items) were adapted from Kim and Qu (2014) and Moore and Benbasat (1991). In addition, the scales for perceived security (4 items) were adapted from Vatanasombut et al. (2008). All measurement items were rated using Likert-type items, ranging from Strongly Disagree (1) to Strongly Agree (5).

In addition, the survey instrument included several statements measuring consumers' perceptions of importance of several aspects of using OFDS services. Each statement was measured using Likert-type scales, ranging from 1=Not Important to 5=Extremely Important. Consumers' willingness to pay (in U.S. dollars) for the subscription service were measured using a slider, ranging from \$0 to \$20. In addition, consumers' opinions regarding the price level of such services were measured using Likert-type scales, ranging from 1=Too Low to 5=Too High. Finally, the respondents were asked to answer general behavioral and demographic questions, such as the frequency of dining in a restaurant, spending on restaurant outings, income, and education. The Qualtrics platform was used to build the survey instrument.

4.3.2 Data Collection

The data were collected by collaborating with a marketing panel company that recruited respondents who were OFDS users in the U.S. A screening question was added to the survey instrument, asking whether the respondents had placed an order from a restaurant through OFDS during the last 12 months. The respondents who placed an order from a restaurant through OFDS were allowed to continue to the survey. The respondents were then asked to read a scenario that included a basic definition of OFDS and an explanation of how OFDS subscription services worked. A pilot test was conducted with 50 respondents from the same population to prevent any issues before the actual data collection. The pilot test confirmed no issues regarding the

demographic structure of respondents, the time spent on the survey completion, and any items that respondents consistently skipped. Then, the marketing panel company sent a total of 19,500 invitations in May 2021 for data collection. A total of 573 respondents (response rate: 3%) were retained after passing the screening question, and after removing the incomplete responses and screening out respondents who failed the attention check question. The response rate is in line with other studies conducted using similar procedures.

The respondents' demographic characteristics, especially the age structure, reflected the actual OFDS users in the U.S. The age structure of the U.S. population (U.S. Census, 2010) and statistical reports from Kantar and Statista (Blumtritt, 2020) allowed for the determination of the guiding quotas for each age group. After several calculations, approximate quotas (%) for each age group were determined, as follows: 18-24 years old (22%), 25-34 years old (25%), 35-44 years old (26%), 45-54 years old (15%), 55-64 years old (7%), and 65 years or older (5%) based on the total sample size (573).

The final sample was composed of 285 males (49.9%) and 283 females (49.6%) (Table 1. 1). Regarding age, most respondents (73%) were between 24 and 55 years old. The majority of respondents (50.6%) had an annual household income between \$50,001 and \$150,000, and most of them (79.7%) had completed High School and had a Bachelor's Degree (Table 1. 1).

<Insert Table 1. 1>

In terms of purchasing from a restaurant, 61% of respondents had dined in a restaurant more than 5 times a month, and most respondents (63.2 %) spent at least \$21 per person in a typical restaurant outing (Table 1. 1). Most of the respondents (60.1%) had spent between \$11 and \$30 per person on an online food order (Table 1. 2).

As illustrated in Table 1. 3, the percentages reflected the cumulative ratings of *important* (3), *very important* (4), and *extremely important* (5) attributed to the importance of several aspects of OFDS use. Specifically, ease of use was rated as the top factor of using OFDS (98.7%), followed by the price of food(s) and beverage(s) (95.3%). Factors such as receiving personalized offers were rates as less important. In addition, Table 1. 3 illustrates consumers' price-related perceptions toward OFDS subscription services. Specifically, 63.2% of subscribers were willing to pay \$8 - \$15 per month, and 53.8% indicated that the price for subscription services (\$9.99) is just right.

<Insert Table 1. 2>

<Insert Table 1. 3>

4.3.3 Data Analysis

The Mplus 8 software package (Muthèn & Muthèn, 2017) was used to analyze the data following Anderson and Gerbing's (1998) two-step approach. First, multivariate normality and common method bias were assessed. Although univariate normality was established for all scale items, multivariate normality was not confirmed. Mardia's coefficients (Mardia, 1970) were examined to check multivariate normality. As a result, both Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) analysis were conducted using estimators that were robust to violations of multivariate normality (Muthèn & Muthèn, 2017). A separate CFA was conducted by setting up all items on a single latent factor to test for common method bias (Malhotra et al., 2006). The resulting model demonstrated poor fit (chi-squared $(X^2)(350)=3,573.509$ ($p<0.001$), normed-chi-squared $(X^2/d.f.)= 10.21$, Comparative Fit Index (CFI) = 0.693, Tucker-Lewis Index (TLI) = 0.668, Root Mean Square Error of Approximation (RMSEA)= 0.129). Therefore, it was determined that common method bias was not a problem in

the study (Malhotra et al., 2006). Next, a CFA was conducted to assess the study's measurement model. Then, an SEM analysis was used to assess the fit of the research model and test the hypotheses.

4.4. Results

4.4.1. Measurement Model

The instrument's reliability, convergent validity, and discriminant validity were assessed using the results of the CFA (Anderson & Gerbing, 1989). The following model fit index values were found: $(X^2)(329)=571.754$ ($p<0.001$), $(X^2/d.f.)=1.73$, CFI= 0.966, TLI= 0.960, and RMSEA= 0.037. Overall, the measurement model fit the data well (Hair et al., 2009). To assess reliability, Composite Construct Reliabilities (CCRs) for each latent construct were calculated and found to be greater than 0.70, indicating appropriate reliability (Hair et al., 2009) (Table 1. 3).

<Insert Table 1. 4>

A three-step process was followed to establish the validity of the measurement model. First, convergent validity was established by assessing the factor loadings from the measurement model. An item measuring perceived security with low factor loading was removed during the modeling process due to its low loading, and the model was respecified. All the remaining factor loadings were greater than 0.681, indicating an acceptable convergent validity (Hair et al., 2009). Second, the Average Variance Extracted (AVE) values of all constructs were calculated and found to be greater than 0.5 (Fornell & Larcker, 1981). With AVE values exceeding 0.5, convergent validity was established (Fornell & Larcker, 1981). Third, the AVE values of each construct were compared with the squared inter-construct correlations to assess discriminant validity. All AVE values were higher than the corresponding correlations.

<Insert Table 1. 5>

4.4.2. *Structural Model*

The proposed research model was tested by conducting an SEM analysis. The model had acceptable model fit indexes: $X^2(337) = 640.813$ ($p < 0.001$), $X^2/d.f. = 1.90$, which showed a good fit (Hair et al., 2009). The values of CFI = 0.957, TLI = 0.952, RMSEA = 0.040 were within the acceptable range, based on the model evaluation recommendations of Hair et al. (2009).

The standardized path coefficient and p -values for significant paths in the model are presented in Figure 2 and Table 1. 5. Hypothesis H1 proposed a positive relationship between performance expectancy and consumers' intentions to use OFDS subscription services and, has been supported ($\gamma = 0.242$, $p < 0.01$). A significant relationship was validated between effort expectancy and intentions to use OFDS subscription services; therefore, Hypothesis H2 has been supported ($\gamma = 0.136$, $p < 0.05$). The positive effect of consumers' effort expectancy on consumers' performance expectancy of OFDS subscription services was confirmed, therefore validating Hypothesis H3 ($\beta = 0.359$, $p < 0.001$). The relationship between social influence and consumers' intentions to use OFDS subscription services was confirmed ($\gamma = 0.473$, $p < 0.001$), thus supporting Hypothesis H4. Perceived security was found to be a significant antecedent of consumers' intentions to use OFDS subscription services ($\gamma = 0.191$, $p < 0.01$), therefore supporting Hypothesis H5. Consumers' compatibility was considered as a significant antecedent of consumers' performance expectancy of OFDS subscription services, providing support for Hypothesis H6 ($\beta = 0.550$, $p < 0.001$). This study also validated a strong relationship between convenience orientation and effort expectancy ($\beta = 0.753$, $p < 0.001$), supporting Hypothesis H7.

<Insert Figure 1. 2>

<Insert Table 1. 6>

4.5. Discussion

The goal of this study was to explicate consumers' intentions to use OFDS subscription services. The study reconstructed the UTAUT2 model by adding three constructs (e.g., perceived security, compatibility, and convenience orientation). This study sought three objectives: (1) investigating the key antecedents of consumers' intentions to use OFDS subscription services, (2) explaining the role of compatibility and convenience orientation in influencing two core perceptions of OFDS subscription services, namely performance expectancy and effort expectancy, and (3) examining the role of perceived security in influencing consumers' use of OFDS subscription services. The study's results revealed that social influence was the strongest antecedent of consumers' intentions to use OFDS subscription services. Performance expectancy was validated as the second important antecedent of consumers' intentions to use OFDS subscription services. Similar to the majority of TAM/UTAUT studies, this study confirmed a significant relationship between effort expectancy and intentions to use OFDS subscription services. A significant relationship between perceived security and intentions to use OFDS subscription services was found. The study confirmed compatibility as a significant predictor of performance expectancy and convenience orientation as a significant predictor of effort expectancy. Based on the results, all the hypotheses were supported in their predicted directions.

A significant but not strong relationship was validated between performance expectancy and consumers' intentions to use OFDS subscription services. This explains that the features of OFDS that determine consumers' perception of the usefulness of such systems do not strongly influence consumers' intentions to use OFDS subscription services. Although the concept of OFDS subscription services has not been studied in hospitality, this result aligns with the

literature on OFDS, where performance expectancy was confirmed as a weak antecedent of consumers' continuance intentions of using OFDS during the COVID-19 pandemic (Zhao & Bacao, 2020). OFDS subscription services' features allow consumers to save foodservice menu items and create a profile that optimizes their food ordering tasks. Even though such system's features enhance consumers' experience with OFDS subscription services, the influence is not strong. This could be due to several reasons. First, consumers may be motivated by monetary benefits (e.g., reduced service fees, complimentary delivery, promotions, etc.) to use subscription services. Second, consumers may be strongly influenced by the recommendations from their friends, families, or coworkers. However, despite the alignment with the recent literature on OFDS, the result of this study is inconsistent with the extant IS literature, where performance expectancy was the strongest antecedent of IS adoption (Morosan, 2020), which underscores the uniqueness of the OFDS subscription environment.

Effort expectancy was found to be the weakest antecedent of consumers' intentions to use OFDS subscription services, which is consistent with the relationship found in UTAUT (Venkatesh et al., 2003). The results highlighted that although OFDS subscription services feature user-friendly interfaces for the completion of food ordering tasks, effort expectancy (i.e., ease of use) does not strongly affect consumers' intentions to use such services. This could occur because consumers have perceptions that such systems are easy to use without having prior experience or training. This result is consistent with the research on adopting cashless payment systems (Ozturk, 2016). Moreover, when consumers perceive the similarity between OFDS' design and other retail environments, the ease of utilization of OFDS subscription services may not be a strong factor in completing food ordering tasks. Thus, consumers may be motivated to

utilize OFDS subscription services with minimal effort to learn, as long as such systems are perceived as useful and recommended by others.

A significant relationship was validated between effort expectancy and performance expectancy. The results highlighted that when consumers view OFDS subscription systems as easy to use, they tend to develop perceptions that such systems efficiently facilitate food ordering tasks. This result is consistent with the research on the adoption of hotel technology (Agag & El-Masry, 2016). This may be because OFDS's user-friendliness is not the only factor that makes consumers find such services useful. This result is surprising because today's OFDS systems facilitate all transactions with ease (e.g., easy to navigate), resulting in enhanced consumer perceptions that such systems optimize task completion.

Social influence was validated as the strongest antecedent of consumers' intentions to use OFDS subscription services. The results proved that others' influences related to OFDS subscription services affect consumers' intentions to use such services. This could be the case for two reasons. First, the use of OFDS subscriptions services became socially desirable, especially during the COVID-19 pandemic. Second, others' opinions related to OFDS subscription services may affect consumers' adoption of such systems. Even though this result is somewhat surprising, the literature on IT adoption in different contexts, such as hotels (Kim & Bernhard, 2014) and social media (Chua et al., 2018), also validated social influence as a strong antecedent of consumers' intentions to use such services. When consumers' social circles view OFDS subscription services as beneficial, consumers tend to use such services to complete food ordering tasks. Moreover, the referents' OFDS subscription services views may become highly relevant to consumers, especially as they consolidate their beliefs over time, which eventually influences consumers' perceptions of using such services.

A significant relationship was validated between perceived security and intentions to use OFDS subscription services. The fact that consumers conduct all transactions online while ordering food makes consumers view OFDS subscription services as generally secure (in line with other consumer-facing web systems) to transmit their personal information. In contrast to this result, a non-significant relationship was found between consumers' perceptions of the security of OFDS and their intentions to use such services (Belanche et al., 2020). The result of this study revealed a low magnitude relationship, which is similar to findings from the research on hotel services robots in hospitality (Tussyadiah & Park, 2018). This result could be attributed to the fact that consumers have access to OFDS' privacy/security settings, which makes consumers less concerned about how such systems manage their personal information. In addition, today's OFDS subscription systems allow consumers to remove any personal information easily. Therefore, consumers could develop perceptions that OFDS subscription systems are generally secure, which may lead to thinking that security does not represent a strong factor in influencing the use of OFDS subscription services.

Of the two antecedents of performance expectancy, compatibility had a greater influence on consumers' performance expectancy than effort expectancy. Compatibility was found to be a strong antecedent of technology adoption in the hospitality literature (e.g., mobile technology (Ozturk et al., 2017) and hotel facial recognition systems (Morosan, 2020)). This study found that consumers' perceptions of performance expectancy (i.e., usefulness) of OFDS subscription services are influenced by their perceptions of how much such systems fit into their lifestyle. It is important to recognize that consumers may have already developed a lifestyle of using particular OFDS, especially during the pandemic. When consumers perceive that OFDS subscription

services fit well with their lifestyle, they tend to believe that such systems enhance the efficiency of their food ordering tasks.

Not surprisingly, convenience orientation was validated as a strong antecedent of effort expectancy. That is, OFDS subscription services, by design, offer intuitive features that facilitate consumers to complete food ordering tasks easily. Such features align with some consumers' orientation toward convenience that allows consumers to optimize task completion, in turn making consumers aware of the low effort needed to complete food ordering tasks. The result revealed that when consumers are highly convenience-oriented, the effort needed to complete food-related tasks is perceived to be low. This relationship is in line with findings from the research in the hospitality literature, where the greater convenience-orientation leads to low effort to utilize OFDS while completing food ordering tasks. This may possibly be because consumers do not consider the effort to utilize OFDS subscription services due to consumers' familiarity with such services. Moreover, convenience-oriented consumers are likely to gravitate toward systems (e.g., OFDS or OFDS subscription services) designed to optimize task completion. By using such systems, consumers are likely to understand the underlying ordering mechanisms, which further influences their evaluation of the effort.

4.6. Conclusions

This study provided new insights into the under-explored concept of OFDS subscription services. Thus, this study addressed the lack of research on how consumers form their intentions to use OFDS subscription services. The UTAUT2 model was reconstructed with three additional constructs: compatibility, convenience orientation, and perceived security. The empirical findings show that social influence is the key antecedent of consumers' intentions to use OFDS subscription services, while performance expectancy is significant but a low magnitude

antecedent of intentions. In addition, this study validated the important role of compatibility and convenience orientation in influencing core system perceptions such as performance expectancy and effort expectancy. Overall, this study can stay at the foundation of new literature trying to understand consumers' adoption of systems used as a part of subscription services that are increasing in popularity in the hospitality and other areas of services.

4.7. Theoretical Implications

As the first study to examine consumers' intentions to use OFDS subscription services in the U.S., it brings several important theoretical implications. While the UTAUT2 model served as a primary foundation for the recent literature on consumers' IS adoption, this study adapted UTAUT2 to a unique and emerging information system task environment that is becoming increasingly popular for both the scholars and users. Specifically, this study used the core of the UTAUT2 as the main conceptual basis and built a model that captures the specific task of using OFDS subscriptions but extended it to capture its unique aspects. Specifically, the study captured contemporary aspects of IS utilization, such as the responsibility of the relatively complementary role of social influences and perceived security. Therefore, this study's main theoretical implication is that it illustrates how a legacy theoretical framework can be extended to capture the evolution of technology use in the evolving social and business environment. Moreover, addressing a major literature gap, this study offers a blueprint for the potential antecedents of OFDS subscription use and clarifies the typology of constructs that could be used in structural models designed to investigate subscriptions to such services.

The study addresses another important gap in the literature; the unknown set of antecedents of important core constructs of UTAUT2. The study illustrates that consumers' convenience orientation is an important determinant of effort expectancy. Yet, generally, the IS

literature focuses on the general concept of convenience (Ozturk et al., 2017), where the systems' characteristics are important to determine consumers' intentions to use IS. This relationship could represent a fundamental direction for new research that recognizes the role of consumers' self-perceptions in influencing system perceptions. Specifically, the addition of compatibility could represent a step toward recognizing consumers' lifestyles within the IS literature, thus advancing the literature. This way, the literature can evolve from being predominantly system perceptions-based to relying on blends of multiple types of constructs that can better capture the complex motivational environment of consumers using IT. This is especially important when investigating aspects of adoption pertaining to the continuous use of services that can be customized by consumers.

Addressing another major gap in the current information system literature – the unclear role of perceived security - this study provided insights into the role of consumers' IS security perceptions. While the existing literature validated the relationship between perceived security and systems' beliefs (i.e., privacy) (Morosan & DeFranco, 2016), this study conceptualized perceived security as a direct antecedent of consumers' intentions to use such services. Even though the magnitude of the relationship is low, the study shows that perceptions of security can affect the consumers' use of OFDS subscription services due to the nature of the information that needs to be provided to activate and maintain a subscription. Today's systems position themselves as secure systems, and this study analyzes the effect of security on consumers' intentions to use such services. Moreover, this study represents an initial attempt to confirm consumers' security perceptions associated with their behaviors while utilizing such services, which eventually influences their intentions toward the use of such services.

4.8. Practical Implications

The results of this study will be helpful for two types of practitioners: OFDS providers and restaurants.

The study confirmed that social influence had the greatest impact on consumers' intentions to use OFDS subscription services and stimulated consumers to use such services. Specifically, individuals' overall evaluations of such services can be recognizable for others while using OFDS subscription services. Some consumers can provide feedback on online platforms about their previous experience of such services, which could be informative for OFDS providers. OFDS providers can also utilize social media to enhance awareness of OFDS subscription services. Such marketing efforts can include persuasive offers and a safe environment for exchanging ideas, further stimulating consumers' intentions to use such services. Moreover, social media may generate a huge amount of data where restaurants can utilize the information to develop marketing strategies for OFDS subscription services. Such strategies can include particular offers expected to influence a targeted segment of consumers. Both OFDS providers and restaurants can increase the market reach by accomplishing a deep awareness about such services.

The study also revealed a positive relationship between compatibility and performance expectancy. To maximize the efficiency of food ordering tasks, OFDS providers should design user interfaces suitable for consumers' lifestyles (e.g., tendencies to order on a daily basis through such systems, eating at home). Consumers may have already developed a lifestyle of using similar services (e.g., retail subscription services) to easily utilize OFDS subscription services easily. For instance, OFDS providers can advertise unique offers (e.g., special discounts on specific days) that match consumers' lifestyles. Specifically, OFDS providers can place such

offers on their advertising campaigns to create a perception that such systems facilitate consumers to complete the food ordering tasks efficiently and economically. For instance, special discounts may be available during office hours that can align with consumers' mealtimes on a daily basis. Restaurants can share the relevant information with OFDS providers to ensure that the products with discounts are aligned with consumers' lifestyles. As such, OFDS providers should design such services to accommodate specific offers to allow consumers to increase the efficiency of their food ordering tasks. Overall, both OFDS providers and restaurants can offer services that match consumers' lifestyles to enhance the efficiency of food ordering tasks.

The study validated the relationship between performance expectancy and effort expectancy that aligns with the fundamental results of TAM. OFDS providers should ensure that consumers can easily learn to complete food ordering tasks through OFDS subscription services. Thus, OFDS providers should provide user-friendly interfaces where consumers can complete the food ordering procedures easily, enhancing the efficiency of the whole process. Specifically, OFDS providers should provide personalized offers to enhance consumers' perceptions about the usefulness of such services. In addition, restaurants should avoid confusion by adding existing and concise information related to food items, which can also lead consumers to complete such tasks efficiently.

4.9. Limitations and Further Research

While this study provided new insights into the use of OFDS subscription services, it has several limitations. First, the generalizability of the study's findings is limited as the user data is collected in the U.S. As the U.S. market is characterized by large companies that offer subscription services, this context provided unique opportunities for studying this topic. However, the study reflected only U.S. consumers' behaviors toward OFDS subscription

services, therefore limiting the understanding of such behaviors to the behaviors reflected in the U.S. recognizing that different countries may have a different environment and dynamics, it would be insightful to augment the findings of this study by replicating it in other countries or regional markets. Second, the study developed a comprehensive model to examine consumers' perceptions of OFDS systems. Yet, for feasibility reasons, the study only focused on some core perceptions and consumer characteristics. To address this limitation, future research could focus on more specific aspects of subscriptions, such as the soft product rules, opportunities for tiered services within the subscription, and the potential switch barriers. Third, the study completed its data collection while the restaurants continued their operations with limited capacity due to the ongoing COVID-19 pandemic. Therefore, consumers' use of such services may not be fully representative as some restaurants stayed closed while some provided limited service. Future studies should consider this aspect and conduct research when the restaurants are providing full service. Fourth, the study collected the data from the U.S. OFDS users, and OFDS users' incomes were found to be slightly lower than those of the general U.S. population. Future studies should investigate the impact of other demographic characteristics, such as income, on consumers' behaviors toward OFDS subscription services. Lastly, the study used structural equation modeling to examine underlying factors that explain consumers' behaviors. Future studies can include experimental research design to explore more in-depth causal links among variables that ultimately explicate consumers' purchasing behaviors while utilizing OFDS services.

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Tables

Table 1. 1 Demographic characteristics of respondents

Characteristics	%
Gender	
Male	49.9%
Female	49.6%
Transgender	0.5%
Age	
24 or younger	21.8%
25-34	25.3%
35-44	25.7%
45-54	15.1%
55-64	7.1%
65 or older	5.0%
Income (annual per household)	
\$50,000 or less	40.0%
\$50,001 - \$100,000	34.0%
\$100,001 - \$150,000	16.6%
\$150,001 - \$200,000	6.1%
\$200,001 or more	3.3%
Education	
Up to High School	40.8%
Bachelor of Science/Arts	38.9%
Master's Degree	11.3%
Doctoral Degree	2.3%
MD and Law Degree	3.0%
Other	3.7%

Table 1. 2 Behavioral characteristics of respondents.

Characteristics	%
Frequency of purchasing from a restaurant per month	
1-4 times	39.0%
5-8 times	21.5%
9-12 times	10%
More than 12 times	29.5%
Spending for each person (\$)	
Less than \$10	5.7%
\$11-\$20	31.1%
\$21-\$30	18.8%
\$31-\$40	9.1%
\$41-\$50	6.2%
\$51 or more	29.1%
Spending for each person through OFDS (\$)	
Less than \$10	6.6%
\$11-\$20	40.1%
\$21-\$30	20.0%
\$31-\$40	9.9%
\$41-\$50	4.2%
\$51 or more	19.2%

Table 1. 3 OFDS users' characteristics

Characteristics	%
Aspects of ordering food through OFDS	
Easy to use the system	98.2%
Price of food(s) and beverage(s)	95.3%
Speed of receiving order	95.1%
Offered discount(s)	89.5%
Personalized offers	76.0%
Personalized recommendation	70.7%
Willingness to pay (in U.S. dollars) per month for OFDS subscription services	
Less than \$8	17.1%
\$8 - \$15	63.2%
More than \$15	19.7%
Opinion regarding the price of OFDS subscription services	
Low	3.3%
Just right	56.5%
High	24.8%
Too high	15.4%

Table 1. 4 Reliability and validity test results

Constructs and items	Factor Loadings (CCR)
Performance Expectancy (Venkatesh et al., 2003)	0.871
PE1: Using OFDS subscription services help me to order my food efficiently (such as ordering food items based on personalized offers).	0.831
PE2: Using OFDS subscription services would improve the quality of my food ordering.	0.681
PE3: Using OFDS subscription services allows me to complete my food ordering quickly (the necessary information including address, method of payment, etc., being ready to complete the food ordering quickly).	0.698
PE4: Using OFDS subscription services would enhance the effectiveness of my food ordering.	0.801
PE5: Using OFDS subscription services is useful while ordering food online.	0.775
Effort Expectancy (Venkatesh et al., 2012)	0.890
EE1: Learning how to use OFDS subscription services is easy for me.	0.797
EE2: My interaction with OFDS subscription services is clear and understandable.	0.800
EE3: I find it easy to use OFDS subscription services.	0.856
EE4: It is easy for me to become skillful at using OFDS subscription services.	0.818
Social Influences (Venkatesh et al., 2012)	0.901
SI1: People who are important to me think that I should use OFDS subscription services.	0.875
SI2: People who influence my behavior think that I should use OFDS subscription services.	0.869
SI3: People whose opinions I value prefer that I use OFDS subscription services.	0.859
Perceived Security (Vatanasombut et al., 2008)	0.816
PS1: OFDS subscription services are secure systems through which to send sensitive information across the Internet.	0.735
PS2: I would feel secure providing personal information when using OFDS subscription services.	0.812
PS3: Overall, OFDS subscription services are safe to transmit sensitive information.	0.768
Compatibility (Kim & Qu, 2014; Moore and Benbasat, 1991)	0.881
COMPA1: Using OFDS subscription services would well with my lifestyle.	0.852
COMPA2: Using OFDS subscription services would be compatible with my needs.	0.839
COMPA3: Using OFDS subscription services would fit well with the way I like to get things done.	0.838

Note. CCR = Composite construct reliabilities.

Table 1. 4 (continued) Reliability and validity test results

Constructs and items	Factor Loadings (CCR)
Convenience Orientation (Souiden et al., 2019)	0.896
Using OFDS subscription services would...	
CO1: help me to order my food in a convenient way.	0.711
CO2: not make my food ordering a hassle.	0.736
CO3: help me to order food without any extra effort.	0.809
CO4: Help me to use my time wisely.	0.797
CO5: help me not to waste time when ordering food.	0.776
CO6: enable me to order food quickly.	0.771
Intentions to use (Venkatesh et al., 2012)	0.889
INT1: I intend to use OFDS subscription services in the future.	0.825
INT2: I will always try to use OFDS subscription services.	0.798
INT3: I will recommend to others to use OFDS subscription services in the future.	0.826
INT4: OFDS subscription services would be among my favorite technologies.	0.816

Note. CCR = Composite construct reliabilities.

Table 1. 5 Reliability and validity results

Constructs	Constructs	1	2	3	4	5	6	7
Performance Expectancy	1	<u>0.577</u>						
Effort Expectancy	2	0.496	<u>0.669</u>					
Social Influence	3	0.282	0.132	<u>0.753</u>				
Perceived Security	4	0.350	0.305	0.323	<u>0.816</u>			
Compatibility	5	0.554	0.458	0.377	0.420	<u>0.881</u>		
Convenience Orientation	6	0.516	0.521	0.171	0.307	0.551	<u>0.896</u>	
Intentions	7	0.453	0.328	0.540	0.419	0.635	0.403	<u>0.889</u>

Note. The values on the diagonal represent the average variance extracted from each latent construct. The values under the diagonal represent the squared inter-construct correlations.

Table 1. 6 Hypothesis testing results

Hypotheses		Path Coefficient	<i>p</i> . Value	Information
H1	Performance Expectancy → Intentions to use OFDS subscription services	0.242	$p < 0.01$	Supported
H2	Effort Expectancy → Intentions to use OFDS subscription services	0.136	$p < 0.05$	Supported
H3	Effort Expectancy → Performance Expectancy	0.359	$p < 0.001$	Supported
H4	Social Influence → Intentions to use OFDS subscription services	0.473	$p < 0.001$	Supported
H5	Perceived Security → Intentions to use OFDS subscription services	0.191	$p < 0.01$	Supported
H6	Compatibility → Performance Expectancy	0.550	$p < 0.001$	Supported
H7	Convenience Orientation → Effort Expectancy	0.753	$p < 0.001$	Supported

Figures

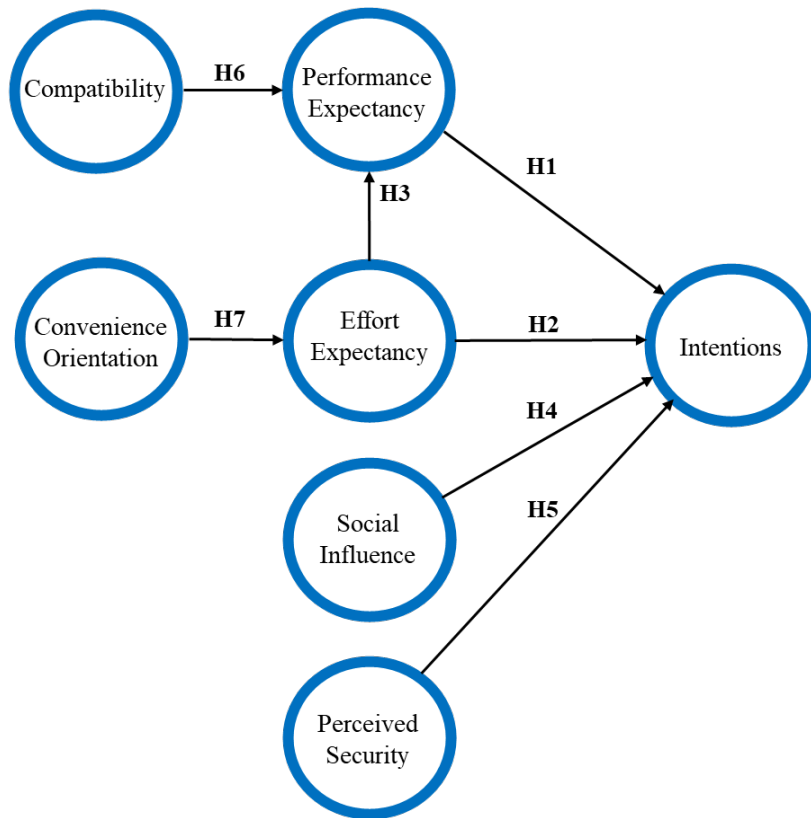


Figure 1. Conceptual Model of Study 1

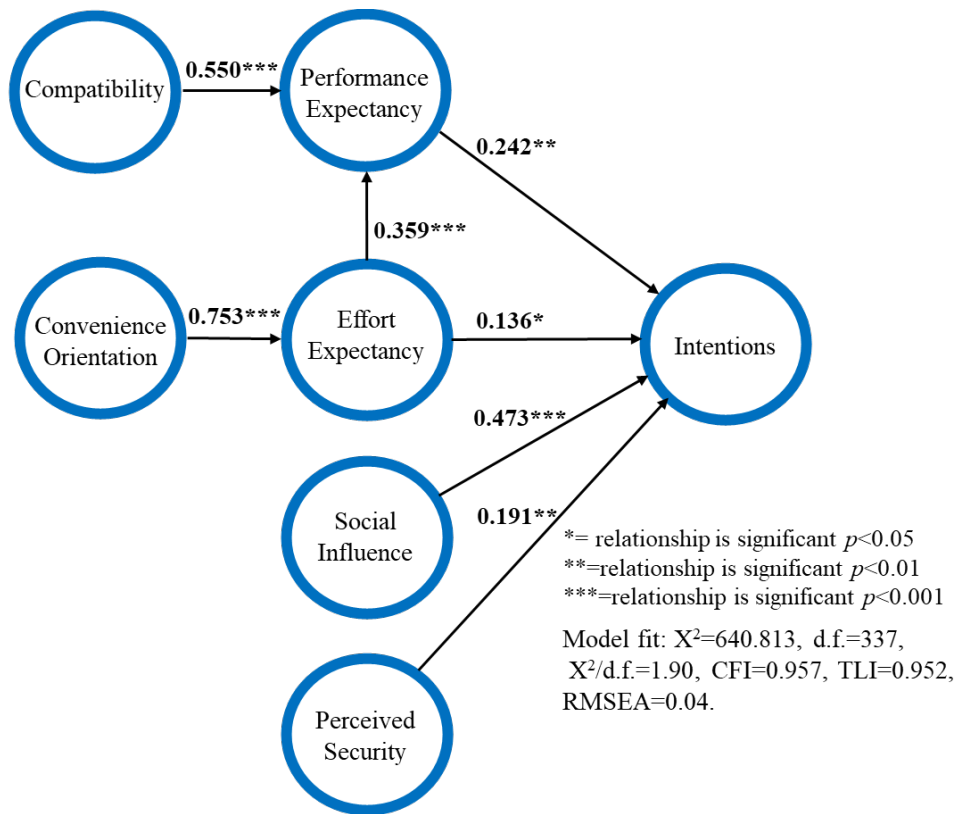


Figure 1. 2 Model Testing Results

Chapter V

Consumers' Loyalty toward OFDS Subscription Services

Abstract

Given the continuous increase in popularity, Online Food Delivery Systems (OFDS) consolidate their consumer acquisition and retention efforts. However, to date, no study has investigated consumers' loyalty toward OFDS subscription services. Based on the Social Exchange Theory (SET) (Blau, 1964), the current study elucidates the impact of benefit and risk on consumers' loyalty toward OFDS subscription services. Based on the data from the U.S. OFDS subscribers, the study found that the benefit is the strongest antecedent of consumers' loyalty toward such systems. In contrast, the risk associated with OFDS subscription services have a negative impact on consumers' loyalty. The study also examines the dimensionality of the concepts of benefit and risk and uncovers the dimensions of both constructs. Several important theoretical and practical implications are provided.

Keywords: online food delivery systems (OFDS), subscription services, SET, loyalty, perceived risk, perceived benefit.

5.1. Introduction

Online Food Delivery Systems (OFDS) facilitate consumers completion of food ordering tasks from a single platform upon providing information necessary in the order completion process (i.e., payment, delivery address, etc.) (Gunden et al., 2020). While restaurants typically prepare the food items, OFDS handle the delivery logistics (Cai & Leung, 2020). In the U.S., OFDS users increased from approximately 95 million in 2019 to 111 million in 2020 (e.g., Uber EATS, DoorDash, Grubhub, etc.) (Curry, 2021). The use of OFDS has also increased dramatically during the COVID-19 pandemic (Perri, 2021).

The major OFDS compete for the same consumer segments, who are likely to utilize multiple systems to complete their food ordering tasks. However, consumers may not necessarily purchase repeatedly using a single service, as multiple systems provide similar benefit. In addition, ordering directly from restaurants, especially restaurants to whom consumers are loyal, remains an attractive proposition. One common way for companies to retain consumers and stimulate long-term loyalty is to offer subscription services. OFDS have continued to grow and introduced subscription services as a new way of assisting consumers (Perri, 2021) and consolidate their consumer base. OFDS subscription services require the addition of a monthly payment (\$9.99) to become a subscriber (Barkho, 2019). Although OFDS subscription services seem costly for some consumers, subscribers can still save an average of \$5 per order compared to non-subscribers (Rosen, 2021). Today's subscription models allow consumers to cancel their subscription anytime without incurring substantial sunk costs (DoorDash, n.d.). In this context, it is critical to understand what factors drive consumers to become loyal to OFDS.

In the hospitality literature, both consumers' loyalty and loyalty programs have been studied in various contexts (Prasetyo et al., 2021). In general, consumers are likely to commit to

a long-term relationship when they develop perceptions of receiving benefit from IS adoption or certain product use (Bilgihan et al., 2015). Loyalty programs are designed to offer economic incentives to enhance consumers' loyalty toward a company (Brashear-Alejandro et al., 2016). For instance, consumers' loyalty toward restaurants is influenced by both non-economic and economic benefit, reducing restaurants' financial burden (Park et al., 2013). Similarly, recent research on loyalty in the OFDS context revealed that price and promotion are important factors influencing consumers' loyalty (Prasetyo et al., 2021). In addition, consumers' loyalty toward OFDS is influenced by the systems' attributes, such as the quality of information (i.e., accuracy and details) and food quality (Pal et al., 2021). While the extant literature reveals several antecedents of consumers' loyalty in the OFDS context, the literature still lacks insights into consumers' loyalty toward OFDS subscription services, marking the first research gap. Specifically, it remains unknown what set of factors influence consumers' loyalty toward OFDS subscription services.

OFDS subscription services unlock various benefit that leads to continuous use of such systems (Hanbury, 2019). For instance, DoorDash subscribers have an advantage of saving \$20 per month from lower service fees than non-subscribers (DoorDash, 2018). Similarly, Grubhub+ offers 10% cashback per \$1 for each order from member restaurants (Grubhub, 2020). In addition, while UberEATS offers \$200 Uber cash to consumers who are Platinum card members, DoorDash provides \$60 DoorDash credit to Chase credit card members in 2021 (White, 2021). Such economic benefit of being a subscriber could strengthen consumers' economic motivations to remain loyal to OFDS subscription services. However, the economic benefit may not be the only incentive of being loyal to OFDS subscription services. Specifically, research on the use of technology-based platforms confirmed that consumers are motivated by social interactions,

which eventually determine their level of engagement with such platforms (Jiang et al., 2013). These findings may apply to OFDS subscription service context, where consumers obtain social benefit when they subscribe to such services. However, to date, no research has examined consumers' perceptions of benefit of OFDS subscription services, marking the second research gap.

Consumers may also face negative consequences while utilizing OFDS subscription services. By design, consumers are required to provide various types of personal information (e.g., names, addresses, payments, etc.) to maintain their OFDS subscription services. While consumers complete all the transactions online, there is always a non-zero potential risk of a cyber security breach, which could lead to perceptions that the use of such services is not totally risk-free. In addition to an information security risk, consumers may face potential system failures, which could make consumers unable to complete a task when time is critical (e.g., placing an order close to dinner time or when having visitors). This type of risk is not necessarily tied to OFDS systems, but it is generally recognized within the broad I.S. literature. For example, consumers' evaluation of mobile booking systems considers systems' failure (i.e., poor presentation of product/services) while purchasing tourism products (Park & Tussyadiah, 2017). Such failures may lead consumers to perceive that utilizing OFDS subscription services could be risky while completing food ordering tasks, therefore adding uncertainty to task completion.

The existence of different types of risk perceptions underscores the notion that there could be a potential risk related to the use of OFDS subscription services, which can result in a shift in consumers' motivation to continue to use OFDS subscription services. While generally the literature recognizes that the risk associated with any I.S. system can be multi-dimensional (DeFranco & Morosan, 2017), it is still unclear what specific dimensions of risk are critical to

any specific I.S. or task environment. As a result, what dimensions of risk influence consumers' loyalty toward OFDS subscription services remain unknown, marking a third important research gap.

5.2. Review of Literature

In this context, the study's goal is to examine the role of benefit and risk in influencing consumers' loyalty toward OFDS subscription services. It uses the Social Exchange Theory (SET) (Lee et al., 2014) as a theoretical base, as it provides a foundation anchored in two complementary types of constructs (benefit and risk) that eventually characterize consumers' intentions (Yan et al., 2016). Addressing the three important gaps simultaneously, this study follows three specific objectives: (1) to validate benefit and risk as antecedents of loyalty toward OFDS subscription services, (2) to examine the dimensionality of benefit of using OFDS subscription services, and (3) to examine the dimensionality of risk associated with the use of OFDS subscription services. To accomplish its first objective, this study constructed a comprehensive structural model and validated it with data collected from current OFDS subscribers in the U.S. To accomplish the second and third objectives, the study conceptualized both benefit and risk as second-order latent constructs. In general, it may cost more to acquire a new user than to retain existing OFDS users. Both OFDS providers and restaurants could offer unique services to increase consumer retention. Such services may enhance consumers' relationship with the OFDS subscription services. Thus, consumers may commit to longer-term relationships with OFDS subscription services. Consequently, it is crucial to investigate the underlying factors influencing consumers' loyalty toward OFDS subscription services.

5.2.1 Theoretical Foundation

The theoretical foundation is derived from SET (Blau, 1964). SET was developed in the 1960s to explain individuals' relationships based on a mutually beneficial exchange (Blau, 1964). SET originates in social psychology and sociology (Lee et al., 2014) and has been used in a variety of fields, including I.S. (Zhao et al., 2017), management (Sungu et al., 2019), psychology (Chernyak-Hai & Rabenu, 2018) and hospitality (Ray & Bala, 2021). SET posits that individuals evaluate social exchanges based on the costs and benefit incurred from interpersonal exchanges (Blau, 1964). Such interpersonal exchanges include any human interactions that individuals maintain or terminate based on obtained benefit, cost and rewards (Yan et al., 2016). More specifically, individuals continue to interact if they receive more benefit relative to the costs from the interaction (Organ & Konovsky, 1989).

SET has been used as a theoretical foundation to explain underlying processes of users' behaviors toward I.S. (Yan et al., 2016). Specifically, SET has been applied to develop a cost-benefit analysis framework that analyzes users' knowledge sharing behavior (Yan et al., 2016). While perceived benefit (e.g., sense of self-worth, reputation, and social support) motivates users to share knowledge on online health communities, perceived costs/risk lead users to share less knowledge on such online communities (Yan et al., 2016). SET was also used as a theoretical base to validate the antecedents of loyalty in a variety of contexts, including I.S. (Zheng et al., 2015), business (Lee et al., 2014), and hospitality (Chen & Hu, 2010). For example, consumers are likely to participate in online brand communities when they receive economic incentives, including gifts or coupons that eventually enhance their loyalty toward a particular brand (Zheng et al., 2015). Similarly, in hospitality, Chen and Hu (2010) found that the relational benefit (e.g.,

social benefit, special treatment benefit, etc.) impact consumers' value perceptions, further influencing consumers' loyalty.

OFDS subscription services are expected to grow, especially in large metropolitan areas, and reach large groups of consumers by offering benefit bundles. Such benefit is instrumental in facilitating food ordering tasks, especially when the consumer is a subscriber. The popularity of OFDS services may entice consumers to sign up and recommend such services to their peers, enhancing the social aspect of the benefit of OFDS. For example, being an OFDS subscriber might enhance consumers' self-image, which may be instrumental to developing or consolidating of their social relationships. The need to maintain such social relationships may eventually influence their loyalty toward OFDS subscription services. Therefore, from the typology of benefit that can influence behavior, perceived social benefit is an important dimension of OFDS subscription services benefit.

Notably, OFDS offer a multitude of economic incentives (e.g., reduced service fees, complimentary delivery fees, cash back), which reflect economic benefit. For the consumers in the target segments of OFDS subscription services, particularly young, employed or attending school, residing in metro areas (Blumtritt, 2020), such economic incentives are important because they can free up consumers' time for other critical activities. Hence, the notion of economic benefit could be important to consumers' intentions to remain subscribers for a long time. Therefore, this study conceptualizes economic benefit as a dimension of the concept of OFDS subscription services benefit.

Given the online nature of OFDS subscription services, there might be risk associated with the utilization of such systems. This is because OFDS interfaces are rooted in the same principles of retail as other websites. Consumers might be faced with uncertainty (e.g., lack of

control over users' personal information once disclosed) throughout the use of subscription services. Moreover, consumers may encounter issues that may prevent them from completing orders, which could commonly occur in every online commercial platform, influencing the performance of such a system. Overall, as the literature suggests, there could be a general risk of using any online systems, which could characterize the entire consumer experience. This is because, while online, OFDS subscription services are still part of the domain of services, which are inherently characterized by inconsistency and intangibility (Kotler et al., 2018), which reflect associated risk. Therefore, this study conceptualizes the perceived risk of using OFDS subscription services as tridimensional, formed of the following dimensions: privacy risk, performance risk, and overall risk. Based on the conceptualizations discussed above, this study built a conceptual model aligned with the SET theory, which reflect benefit and risk (as second-order multidimensional constructs) as antecedents of consumers' loyalty to OFDS subscription services. The conceptual model is illustrated in Figure 2. 1 below.

<Insert Figure 2. 1>

5.2.2 Hypotheses Development

5.2.2.1 Benefit

5.2.2.1.1 Perceived Social Benefit

Perceived social benefit reflects the perception that makes consumers feel part of a specific group (Candi & Kahn, 2016). Social benefit involves consumers' influence in social status among members of social reference groups (Prior, 2013). Consumers receive such benefit when they feel included within a community (Bruhn et al., 2014). Social benefit has been validated as an antecedent of consumers' satisfaction in the consumer behavior literature (Candi & Kahn, 2016), including hospitality and tourism (Tussyadiah, 2016). In peer-to-peer

accommodation research, consumers were found to become involved in social interactions with the host during their stays (Tussyadiah, 2016). In tourism, consumers interact with each other through virtual online communities to exchange ideas regarding their travel preferences (Wang & Fesenmaier, 2004). In addition, the social benefit was validated as a dimension of relational benefit, impacting consumers' loyalty (Chen & Hu, 2010). In this case, social benefit refers to consumers' perceptions of being recognized by society and having long-term relationships with service firms (Chen & Hu, 2010).

Consumers can utilize previous consumers' evaluations about their experiences which may contribute to developing a sense of online community among the consumers through OFDS. Moreover, consumers may exchange information regarding the subscription services that include consumers' preferences and needs through online communities. Generally, businesses tend to observe consumers' chatter on social media, resulting in consumers perceive that their needs are recognized by OFDS through the online community, enhancing their relationship with the subscription services. Therefore, it can be expected that consumers maintain their subscription services as they get to talk about the service and its appropriate social benefit by sharing online information. Moreover, consumers may feel like they belong to a special group of people - those who like to obtain the benefits, including cost incentives, or just want to experience the feeling that they are a part of the relationship with the company that could be long lasting. Thus, the benefit that anchors the consumer into the social environment as a result of being a subscriber could be influential with respect to the overall benefit of being a subscriber. Therefore, the following hypothesis was developed.

Hypothesis 1a: The perceived social benefit is a dimension of consumers' benefit of using OFDS subscription services.

5.2.2.1.2 Perceived Economic Benefit

Perceived economic benefit refers to the benefit obtained by engaging in relational exchanges with businesses (e.g., primarily regarding monetary or time-saving benefit) (Gwinner et al., 1998). Consumers who have an ongoing relationship with businesses may be in a position to obtain an appropriate economic benefit (e.g., discounts) as they repeat their purchasing processes over time (Sheth & Parvatiyar, 1995). Economic benefit has been conceptualized as a monetary benefit in the consumer behavior literature, including in hospitality and tourism (De Canio et al., 2020). Specifically, in tourism, the economic benefit has been validated as an antecedent of consumers' bargaining behavior (Tsang et al., 2011) and tourists' preferences for particular hotels (Dedeoğlu et al., 2015). The concept of economic benefit (in the form of cost savings) applies to sharing economy in hospitality and is likely to affect consumers' intentions to participate in collaborative consumption (Tussyadiah, 2016). In hospitality, economic benefit was validated as an antecedent of consumers' intentions to use online travel websites and food delivery services (Ray & Bala, 2021). That is, when consumers receive offers and discounts, they are likely to use such services more (Ray & Bala, 2021). Similarly, price benefit is highly relevant to OFDS, where consumers utilize such platforms to save costs during online food purchasing (Yeo et al., 2017).

OFDS subscription services provide various offers in the form of incentives, represented as monetary benefits (e.g., time and money savings) to consumers. For example, consumers pay reduced service fees for each order as they utilize subscription services, translating into savings. In addition, consumers may take advantage of using credit card companies that have a partnership with OFDS. Specifically, consumers can earn points, receive discounts and cashback as they utilize OFDS subscriptions. Consumers may also have access to personalized promotions

based on preferences or previous orders, affecting their perceptions of the benefit of OFDS subscription services. In line with SET, economic benefit stays at the foundation of the overall benefit from engaging with a commercial entity, as consumers try to maximize the value obtained from such interactions. Therefore, the economic benefit is viewed as an important dimension of the perceived benefit of using OFDS subscription services, resulting in the development of the following hypothesis.

Hypothesis 1b. The perceived economic benefit is a dimension of consumers' benefit of using OFDS subscription services.

5.2.2.2 Risk

5.2.2.2.1 Perceived Risk

Consumers' perceived risk reflects the uncertain outcomes that occur before and after completing of a purchasing process (Sun, 2014). In the IS literature, various dimensions of risk have been identified: (1) perceived performance risk, (2) perceived financial risk, (3) perceived time risk, (4) perceived psychological risk, and (5) perceived privacy risk (Featherman & Pavlou, 2003, Martins et al., 2014, DeFranco & Morosan, 2017). Likely due to contextual factors, not all dimensions of risk were relevant in the OFDS context where they were conceptualized. While Kim, Qu and Kim (2009) recognized seven dimensions of risk associated with purchasing airline tickets, DeFranco and Morosan (2017) confirmed only performance, financial, and privacy risks as dimensions of the overall risk regarding consumers' connectivity of mobile devices to hotel wi-fi networks. The literature recommends aligning the conceptual structure of risk with the context and the task-technology environment in which it is examined (DeFranco & Morosan, 2017). In this study, three dimensions of risk were conceptualized as relevant to the overall

concept of risk associated with OFDS subscription: perceived privacy risk, perceived performance risk, and perceived overall risk.

5.2.2.2.2 Perceived Privacy Risk

Perceived privacy risk reflects the loss of consumers' control over their private information upon exposure to third-party users (Martins et al., 2014). Privacy risk has been considered a serious concern, inhibiting consumers from using mobile payment systems for online purchases (Yang et al., 2015). Privacy risk can be related to the use of OFDS subscription services. For instance, consumers must register with OFDS subscription services by providing personal information, such as home or office addresses, payment information, and personal preferences. Similar to other electronic commerce transactions, consumers' personal information might, in theory, be exposed to others in case of a data breach, which may result in consumers becoming hesitant about using such services. This shows that privacy risk is likely to represent an important dimension of risk associated with OFDS subscription services.

Hypothesis 2a. The perceived privacy risk is a dimension of consumers' perceived risk of using OFDS subscription services.

5.2.2.2.3 Perceived Performance Risk

Perceived performance risk refers to consumers' perceptions about a product or service that does not perform as expected (Featherman & Pavlou, 2003). Performance risk is related to the consumers' use of IS, which is aligned with consumers' intentions of using mobile payments in online purchasing (Yang et al., 2015). Consumers may try to find a way to utilize the systems even when they are facing some issues (e.g., incomplete transactions, being unable to obtain benefits) while utilizing OFDS subscription services. As consumers utilize OFDS subscription services, the system waives the delivery fee, and it is shown before consumers check out from

the system. Yet, consumers may face issues such as not receiving complimentary delivery fees before completion of online food ordering tasks. This could cause a negative impact on consumers' perception of subscription services. Therefore, it can be argued that performance risk could be a critical dimension of risk for using OFDS subscription services, according to the following hypothesis:

Hypothesis 2b. The perceived performance risk is a dimension of consumers' perceived risk of using OFDS subscription services.

5.2.2.2.4 Perceived Overall Risk

Despite the general view that risk is a multi-dimensional construct, there have been multiple conceptualizations of risk as an overarching measure (Martins et al., 2014). Such conceptualizations provide a general sense of the risk involved in commercial activity (Featherman & Pavlou, 2003). More specifically, in the hospitality literature, perceived risk was validated as an antecedent of IS adoption (Ray & Bala, 2021), illustrating that consumers are less likely to use online travel websites and food delivery systems if they perceive a risk from using such systems. Such approaches are not necessarily uncommon. For example, specific items or dimensions of constructs are specifically designed to reflect the overall construct rather than a specific dimension. This is important in contexts such as OFDS subscription services, where the overall evaluation of the risk associated with the utilization of such systems is difficult to attribute to a specific dimension. For this reason, this study used perceived overall risk as an overarching dimension of risk of using OFDS subscription services and developed the following hypothesis.

Hypothesis 2c. Consumers' perceived overall risk is a dimension of consumers' risk of using OFDS subscription services.

5.2.2.3 Loyalty toward OFDS Subscription Services

Loyalty is defined as a consumer's commitment to repurchase a particular product or service repetitively without being influenced by marketing efforts (Oliver, 1999). Loyal consumers are more likely to develop a strong relationship with a company or brand versus non-loyal consumers (Kumar et al., 2011). There are two main approaches to conceptualize loyalty in the literature: behavioral and attitudinal loyalty. Behavioral loyalty can be captured by consumers' repurchasing intentions toward a brand of interest (Bowen & Chen, 2001). However, consumers' behaviors alone (i.e., repeat purchasing) do not explain the underlying motivation for consumers' loyalty toward a brand (Chen & Hu, 2010). Therefore, attitudinal measures of loyalty provide insight into consumers' favorable attitudes toward a brand (Rundle-Thiele & Bennett, 2001). Attitudinal measures of loyalty reflect consumers' emotional and psychological commitment to a brand (Bowen & Chen, 2001).

In the hospitality literature, a variety of antecedents of consumer loyalty have been validated, such as satisfaction (Carneiroa et al., 2019), commitment (Yao et al., 2019), and benefit (Garbarino & Johnson, 1999). Consumers opt to repurchase a product or service and spread positive word-of-mouth about the benefit (Garbarino & Johnson, 1999). In addition, service quality has been validated as an antecedent of consumer loyalty, which eventually results in consumers' satisfaction with the service offerings (Orel & Kara, 2014). Several other constructs, such as hedonic and utilitarian features and brand equity, have also been validated as antecedents of loyalty in the context of online booking (Bilgihan et al., 2015). Therefore, it is important for hospitality firms to develop services to meet consumers' needs, which may eventually influence consumers' loyalty (Kandampully et al., 2015).

In general, loyal consumers could be described as consumers who are likely to pay more and have higher purchasing intentions without considering other products and services (Gracia et al., 2011). In general, consumers' repeated behavior is connected to brand loyalty, which explains the underlying motivation of consumers to repeat their purchases of certain products or services (Rahi et al., 2017). Consumers are likely to refuse to purchase another brand when they develop brand loyalty, even though the competitors' offerings may be tempting (Keller, 2009). However, consumers may give up the brand, including its loyalty programs, reflecting switching costs (Tanford, 2013). Switching cost is associated with both non-economic cost (e.g., loss of relationship with the brand) and economic cost (e.g., loss of financial benefit) (Han et al., 2011). Consumers switch the brand based on the benefit associated with the loyalty programs (Tanford, 2013). In general, OFDS subscription services offer benefit (e.g., reduced service fees, complimentary delivery fees). They are still distinct based on the following factors: availability in different locations, partnerships with different credit card companies, and different reward systems.

Within the broad loyalty literature, there is extensive research on consumers' loyalty in foodservice. For instance, Peng et al. (2017) validated the antecedents of consumers' loyalty toward luxury restaurants. Specifically, stimuli such as food quality, service quality, atmospherics, and other consumers impact consumers' emotions, which further influence their loyalty (Peng et al., 2017). Consumers' perceptions of value and food safety were also validated as antecedents of consumers' loyalty (Cha & Borchgrevink, 2019). In addition, the concept of experiential loyalty has been studied in the hospitality literature to assess the underlying factors of loyalty toward smart restaurants. Experiential loyalty refers to loyalty developed when

consumers commit to repurchasing the same product or service in the long term and offer positive WOM (Wu & Cheng, 2018).

Eventually, the literature converges toward the notion that consumers' loyalty is enhanced by loyalty programs by achieving consumer satisfaction and providing benefits (Hua et al., 2018). Generally, when consumers perceive that they receive sufficient benefit for being part of a program that stimulates loyalty, they generally tend to stay within that program and accumulate increasing benefit. Conversely, when consumers perceive a threat to the provided benefit for being a part of a loyalty program or subscription, they could diminish their intentions to remain loyal or to continue their subscription. This logic has been applied throughout multiple areas of the hospitality industry, especially in areas that are innately prone to using loyalty programs, such as hotels, airlines, etc. Thus, in line with the calculative processes described by the SET, it is likely that the subscribers of OFDS are likely to continue their subscription as long as they receive benefit but are likely to decrease their motivations to remain as subscribers if they perceive the subscription to be risky. In line with the discussion above, the following two hypotheses were developed

Hypothesis 1. Consumers' benefit of using OFDS subscription services is positively related to their loyalty toward OFDS subscription services.

Hypothesis 2. Consumers' risk of using OFDS subscription services is negatively related to their loyalty toward OFDS subscription services.

5.3. Method

5.3.1. Measurement Instrument

A survey instrument was developed based on the literature in both general IS and hospitality. The scales for all constructs were adapted to capture the constructs that constitute the

conceptual model. They were carefully adapted to reflect the OFDS subscription context. Benefit was treated as a second-order construct and consisted of two dimensions, social benefit, and economic benefit. The scales for perceived social benefit (3 items) and perceived economic benefit (4 items) were adapted from Tussyadiah (2016). Risk was also conceptualized as a second-order construct, while the scales for the first-order construct were adapted from Featherman and Pavlou (2003). Risk consisted of the following dimensions: perceived privacy risk (3 items), perceived performance risk (5 items), and perceived overall risk (5 items). In addition, the scales for loyalty toward OFDS subscription services (4 items) were adapted from Jani and Han (2014). All measurement items were rated using a Likert-type scale, ranging from 1=Strongly Disagree to 5=Strongly Agree.

Several statements were included to determine consumers' perceptions of importance of several aspects that may be important for OFDS use (e.g., speed of service, personalized offers), or when subscribing to OFDS. Such statements were measured using Likert-type scales, ranging from 1=Not important to 5=Extremely important. Consumers' willingness to pay (in U.S. dollars) for the subscription services were measured using sliders, with values from \$0 to \$20. In addition, consumers' opinions regarding the price level of such services were also measured using Likert-type scales, ranging from 1=Too low to 5=Too high. Respondents were asked to provide basic demographic and behavioral information (e.g., gender, income, the frequency of ordering through OFDS (as a subscriber), and spending (as a subscriber). The instrument was developed and published using the Qualtrics survey environment.

5.3.2. Data Analysis

The services of a marketing panel company were secured to recruit the sample of consumers necessary for this study. The population of the study included users of OFDS services

who are also subscribers of any OFDS services. The sample was acquired based on two screening questions: (1) whether the respondents had placed an order from a restaurant during a 12-month period prior to the study, and (2) whether the respondents had subscribed to an OFDS (UberEATS, DoorDash, Grubhub, etc.) within the last 12 months. The respondents who did not meet the two conditions were screened out from the study.

The population was selected to reflect the type of users likely to purchase from OFDS (Blumbritt, 2020; Kantar, 2021; U.S. Census, 2010). The desired sample's demographic composition reflected the most common characteristics of the users of OFDS services, as described by multiple reports and the preliminary analyses provided by the marketing panel company – Kantar. Upon accessing the survey, the respondents had to comply with the IRB requirements, after which they answered the screening questions. They were also directed to read a scenario, which provided an explanation about OFDS and described how OFDS subscription services work.

To confirm that there were no issues with the mechanics of the data collection, a pilot test involving 50 respondents from the actual population of the study was conducted in May 2021. As there were no issues with the data collection procedure, the full data collection was conducted in May 2021. The marketing panel company sent 19,500 email invitations to their panelists. The invitations included a link to the survey. The respondents who failed answering two screening questions were screened out from the study and then 262 respondents (response rate: 1%) were retained. OFDS subscription services are still relatively new, therefore a sample size of 262 respondents aligned with the sample size requirements suggested by Hair et al. (2009) for the proposed analysis.

Multivariate normality and common method bias were assessed before conducting both Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM). First, a procedure recommended by Mardia (1970) was used to verify multivariate normality using Mplus 8.0. Although univariate normality was established for all items, multivariate normality was not established. Therefore, the proposed analyses (e.g., CFA and SEM) were conducted using an estimator that was robust to deviations from multivariate normality (Muthén & Muthén, 2017). Second, a common method bias analysis was performed by setting up all items on a single latent factor (Malhotra et al., 2006). The model had unsatisfactory fit, illustrated by the following indexes (chi-squared (X^2)(230)=1740.654 ($p<0.001$), normed-chi-squared ($X^2/d.f.$)=7.56, Comparative Fit Index (CFI) = 0.539, Tucker-Lewis Index (TLI) = 0.493, Root Mean Square Error of Approximation (RMSEA) = 0.162. Therefore, it was concluded that common method bias was not a problem in the data set (Malhotra et al., 2006).

5.4. Results

The demographics of respondents can be characterized as 52.3% males (46.9% females), with an average age between 25 and 44 years old (57.3%) (Table 2. 1). Most respondents had at least a Bachelor's Degree (60.6%), and the majority of respondents (56.9%) had an annual household income between \$50,000 and \$100,000. Approximately 54.7% of respondents order from OFDS nine times or more during a typical month. In terms of spending, most respondents (55.9%) generally spend more than \$21 (per person) on each food order through OFDS. The majority of OFDS subscribers (54.9%) generally tip OFDS drivers about 10% - 20% of their check (Table 2. 2).

The results in Table 2. 3, reflect the cumulative percentages corresponding to ratings of important (3) or higher for statements reflecting aspects relating to subscribing to OFDS and factors related to general OFDS use. The factors that respondents deemed as important for subscribing were receiving exactly what was ordered (97.7%) and receiving their order without any issues (96.6%). The least important factors were receiving personalized recommendations (77.5%) and notifications (75.6%). Respondents also found several factors important to general OFDS use, such as speed of receiving the order (98.7%) and ease of use of the system (96.9%), while the lowest-rated aspects remained personalized offers and recommendations. In addition, Table 2. 3 illustrates consumers' price-related perceptions toward OFDS subscription services. Specifically, 65.1% of subscribers were willing to pay \$8 - \$15 per month, and 64.8% indicated that the price for subscription services is just right.

<Insert Table 2. 1>

<Insert Table 2. 2>

<Insert Table 2. 3>

5.4.1. Measurement Model Analysis

A Confirmatory Factor Analysis (CFA) was conducted on the measurement model using Mplus 8.0 (Muthèn & Muthèn, 2017). The measurement model's reliability and convergent validity were assessed based on the results of the CFA (Anderson & Gerbing, 1988). The results of the CFA revealed that the model had a satisfactory fit ($(X^2)(222) = 269.194$ ($p < 0.001$), $(X^2/d.f.) = 1.33$, Comparative Fit Index (CFI) = 0.977, Tucker-Lewis Index (TLI) = 0.974, and Root Mean Square Error of Approximation (RMSEA) = 0.033) (Hair et al., 2009). The Composite Construct Reliabilities (CCRs) of each construct were calculated and were found to range from 0.780 to 0.943, which were higher than the 0.7 threshold suggested by Hair et al.

(2009). Therefore, the multi-item scales used in this study were reliable for measuring each construct (Table 2. 3).

<Insert Table 2. 4>

The convergent and discriminant validity were examined using the CFA results. An item measuring loyalty had a low loading and was removed, upon which the model was respecified. First, convergent validity was supported by the factor loadings, greater than 0.681 (Fornell & Larcker, 1981). Second, the Average Variance Extracted (AVE) of all constructs ranged from 0.542 to 0.805, higher than the threshold value of 0.5 (Fornell & Larcker, 1981). Finally, discriminant validity was examined by comparing the AVE values with the squared inter-construct correlations of constructs. All AVE values were higher than the corresponding correlations, except the correlation between loyalty and social benefit (Table 2. 4). Thus, an alternative method, the Heterotrait-Monotrait ratio of correlations (HTMT), was used to assess discriminant validity. HTMT is the average of the heterotrait-heteromethod (i.e., the correlations of items across constructs) relative to the average of the monotrait-heteromethod correlations (i.e., the correlations of items among the same constructs) (Henseler et al., 2015). The HTMT ratio for the social benefit and loyalty was lower than the accepted threshold value of 0.85 (Henseler et al., 2015). Therefore, it was concluded that discriminant validity was established in this study.

<Insert Table 2. 5>

5.4.2. *Structural Model Analysis*

The structural model of the study was also assessed for fit, and its results were used for hypothesis testing (Muthèn & Muthèn, 2017). The model demonstrated appropriate fit, with the following fit indexes $\chi^2(221) = 293.458$ ($p < 0.001$) and $\chi^2/d.f. = 1.32$, CFI = 0.978, TLI = 0.975,

and RMSEA = 0.036 (Figure 2. 2) (Table 2. 5) (Hair et al., 2009). Additionally, the factor loadings of first-order dimensions for benefit and risk were all above .681 and significant. Subsequently, the standardized path coefficients and significance levels were evaluated to test the study's hypotheses. First, the results confirmed the dimensional structure of both second-order constructs. Specifically, benefit was validated as a bi-dimensional construct that included the dimensions of social and economic benefit. Thus, hypotheses H1a and H1b have been supported. Also, the relationship between benefit and loyalty was validated ($\gamma=.821, p<0.001$), thus supporting Hypothesis 1. In addition, risk was also validated as a tri-dimensional construct, with dimensions such as privacy risk, performance risk, and overall risk. Thus, such results allow for the support of hypotheses H2a, H2b, and H2c. Moreover, the relationship between risk and loyalty was validated ($\gamma=-.239, p<0.001$), therefore Hypothesis H2 has been supported.

<Insert Table 2. 6>

<Insert Figure 2. 2>

5.5. Discussion

The goal of this study was to examine the role of benefit and risk in influencing consumers' loyalty toward OFDS subscription services. The benefit and risk were validated as a second-order antecedents of consumers' loyalty toward OFDS subscription services. Therefore, the study's first objective was accomplished. Even though both benefit and risk were validated as antecedents of loyalty, benefit was found to be a stronger antecedent of loyalty than risk. That is, in the OFDS subscription context, consumers opt to be loyal to such services primarily when they receive benefit (i.e., perceived social and economic benefit). This result aligns with the I.S. literature, where it was found that consumers' loyalty toward a brand is associated with the perceived benefit, specifically economic incentives. Concurrently, risk (i.e., perceived

performance risk, perceived privacy risk, and perceived risk) may lead consumers to develop concerns associated with OFDS subscription services, in turn affecting their loyalty. This means that consumers are likely to utilize OFDS subscription services that maximize the benefit while minimizing the risk. Furthermore, consumers are likely to avoid the uncertainty associated with the services, where risk is present. In addition, the results revealed that the perceived social benefit had a greater contribution to consumers' overall perceptions of benefit than perceived economic benefit.

The second objective of the study was achieved by uncovering the dimensionality of the benefit of using OFDS subscription services. As a first-order construct, the perceived social benefit was found to be the most salient for consumers while using OFDS subscription services, further playing an essential role in shaping their overall evaluation of the benefit. Research on the use of online platforms indicated that social benefit is derived from exchanging value that motivates consumers to engage in technology-based platforms (Jian et al., 2013). This could be the same in the context of OFDS subscription because consumers may communicate their preferences through such systems. Therefore, consumers may find the exchange of such information to be beneficial, which eventually addresses their social needs (e.g., recognition). Ultimately, perceived social benefit enhances the overall benefit that could be obtained by using OFDS subscription services.

Surprisingly, perceived economic benefit was confirmed as less important than social benefit. This result partially aligns with the research in hospitality, which confirmed that the economic benefit was the most important motivator of collaborative consumption in travel Tussyadiah (2015). Moreover, this result underlines the notion that consumers' perceptions of benefit are enhanced by economic benefit (e.g., cost savings). This could be because reducing the

cost of food orders is relevant to consumers' overall expectations of OFDS subscription services, especially for consumers who are required to pay additional fees (e.g., service fee and tip to drivers).

The third objective of this study was achieved by ascertaining the dimensions of the risk associated with consumers' loyalty to OFDS subscription services. The results confirmed three dimensions of risk (i.e., perceived privacy risk, perceived performance risk, and perceived overall risk) that reflect consumers' evaluations of risk. The results also confirmed that the risk, as a second-order construct, had a negative impact on consumers' loyalty toward OFDS subscription services. This result was not surprising. Martins et al. (2014) conceptualized risk as a second-order construct and confirmed its negative impact on consumers' intentions to use Internet banking technology. Moreover, the result underscored that the consumers are mostly concerned about their privacy, followed by performance while using OFDS subscription services.

Perceived privacy risk was validated as a dimension of risk and considered a fundamental concern for consumers while completing food ordering tasks. The results confirmed that perceived privacy risk was the most salient dimension of risk, consistent with research on Internet banking adoption (Featherman & Pavlou, 2003). This may be explained by how transactions are conducted in OFDS subscription services, which could lead to concerns about losing control over personal information. Specifically, consumers generally do not know how their information is going to be used once disclosed. Thus, consumers' anxieties about losing control of their disclosed information could be the most influential dimension of consumers' overall evaluations of risk associated with consumers' loyalty toward OFDS subscription services. This result is consistent with the literature on mobile technologies, where it was found

that perceived privacy risk was the most important aspect of risk associated with the utilization of mobile technologies (Park & Tussyadiah, 2017).

The perceived performance risk was validated as a dimension of risk and considered an important aspect of risk associated with consumers' loyalty toward OFDS subscription services. When OFDS subscription services may not perform as consumers expect, consumers' general perceptions of the uncertainty related to such systems may increase. Even though OFDS subscription services' interfaces are designed to easily facilitate consumers' food ordering tasks, such systems may still not perform well (i.e., not allowing consumers to complete the tasks the way they wanted to). Specifically, the potential of system failures leads to the development of perceptions of performance risk associated with OFDS subscription services. This result was consistent with the research on mobile travel booking (Park & Tussyadiah, 2017), where perceived performance risk was confirmed as a dimension of consumers' overall evaluation of risk.

Perceived overall risk was confirmed as a dimension of risk. Although perceived risk may not be conceptualized the same across the I.T. adoption literature, it was confirmed that perceived overall risk is a dimension of risk while completing bank transactions through Internet (Martins et al., 2014). The results revealed that consumers might have general concerns regarding the completion of tasks through OFDS subscription services, such as having discrepancies related to food orders (e.g., consumers' special needs are not fulfilled). This could be explained by the characteristics of food ordering related task, where consumers do not have control over the whole experience, especially over the technical aspects of it. Therefore, consumers who view OFDS subscription services as risky while completing food-related tasks may attribute them to system-related factors. Ultimately, the results underscored that the

perceived overall risk of using OFDS subscription services are an influential dimension of risk even though it was rated as the least important dimension.

5.6. Conclusions

This study addressed three gaps in the IS literature for understanding the factors influencing consumers' loyalty to OFDS subscription services and the dimensions of such factors. SET was used as a theoretical base to examine the key antecedents of loyalty toward OFDS subscription services. The study examined the dimensions of benefit and risk and validated them as antecedents of loyalty toward such systems. The results presented empirical evidence that the benefit had a stronger effect on consumers' loyalty toward such services than risk. Moreover, validating of the dimensions of benefit and risk provided new insights into how consumers' overall evaluations of benefit and risk are developed and influence consumers' loyalty toward OFDS subscription services.

5.7. Theoretical Implications

This study developed a conceptual model to investigate consumers' loyalty toward OFDS subscription services based on two multidimensional antecedents. As the first study in hospitality to do so, it offers notable theoretical implications. Addressing the first gap in the literature of OFDS – lack of academic insight on OFDS-related loyalty – this study provided initial results that explain the factors that influence loyalty and the role of these factors in motivating subscribers to continue to use these systems. By providing this dual-factor perspective on loyalty, this study stays at the foundation of other studies that could be instrumental in explaining the long-term commitment of consumers to subscription models, which are increasingly common. The findings revealed consumers' overall evaluations of such services by examining two complementary aspects (i.e., benefit and risk) validated as second-order constructs.

Examining both aspects of such services could be extended to other online retail environments and could serve as a direction for other researchers in understanding consumers' loyalty.

Addressing the second gap in the literature, this study is the first to confirm the dimensions of benefit associated with OFDS subscription services. Specifically, both social and economic benefit were related to consumers' overall evaluations of benefit. Although price and service benefit were antecedents of consumers' intentions to use such services in other studies in the hospitality literature (Ray & Bala, 2021), this study shows that social benefit is more important for subscribers than economic benefit. Yet, as the economic benefit is associated with both the loyalty and loyalty programs in hospitality (Hanzaee & Esmailipour, 2017), this study recognizes social benefit as an important aspect of remaining loyal to OFDS services, and explains that consumers seek to belong to a community where all OFDS subscribers share values. Furthermore, this study shows that being a part of specific groups is more relevant to consumers' overall evaluations of benefit, which contributes to the literature in hospitality and general social sciences.

Addressing the third gap, this study offers a clear conceptualization of a risk associated with OFDS subscription services. By doing so, this study extends the theoretical applicability of SET in the OFDS subscription service context and offers social scientists and IS scholars a theoretical platform that can be modified to clearly determine the dimensions of risk associated with the contemporary business models in services. This is especially important for food service, as generally food service has not been an area of high technological innovation within the hospitality industry. Therefore, understanding what drives the risk associated with these systems, can lead to precise conceptualizations of the factors that can accurately the online environments that are currently used to facilitate food service distribution. As such, this study advances the

general literature in hospitality, emphasizing the information technology literature that pertains to food service.

5.8. Practical Implications

Given the role of OFDS in the distribution of food service, this study brings several managerial implications for both types of stakeholders, namely OFDS and restaurants. First, it is important to recognize that consumers will always evaluate the benefit against the risk of using OFDS subscription services in the longer term and develop loyalty toward such systems when the benefit is higher. Therefore, OFDS should clearly explain both economic and social benefit of using such services to the consumers, which could be an important element of their marketing strategy. Restaurants should be aware of these strategies and could convey the information that ordering online, even through OFDS, could be beneficial. The details regarding the integration of such benefit into both OFDS' and restaurants' operations are discussed later in this section.

The study ascertained the critical role of social benefit in developing the overall benefit perceptions regarding OFDS subscriptions. The first important practical implication is that consumers seek a feeling of belongingness to a community where all OFDS subscribers share the same values. Therefore, to enhance their loyalty, OFDS providers can create an online environment where consumers interact and exchange their ideas, which can be recognized by both OFDS providers and restaurants, resulting in subscribing to OFDS. Such environments can fulfill consumers' social needs, which eventually influence their commitment to OFDS subscription services. OFDS providers should consider maximizing the social interactions among subscribers, which may also increase the chance of hearing unaddressed issues. Another way to monetize the social benefit of OFDS subscription is to convey information about such benefit in the marketing material for both restaurants. For example, information about how many orders of

a specific items have been placed in a day can stimulate for consumers seeking to validate their social benefit.

The findings of this study also revealed that economic benefit is important for subscribers and enhances their overall perceptions of benefit of using OFDS subscription services. As such, both OFDS and restaurants should provide attainable economic benefit to consumers and offer information that could make the economic benefit tangible (e.g., cashback, time-limited offers). It is especially important for restaurants not to limit the time of such incentives, as consumers' perceptions toward them are long-term oriented. Moreover, it is important for both type of providers to offer clear explanations about how the various elements of their pricing or promotion strategies are working. These elements tend to be confusing for the consumers, and when they are presented on the small space of a computer or mobile device screen, they can increase the confusion. Therefore, clarity in presenting the economic benefit to consumers is essential in stimulating their long-term loyalty.

Finally, the study confirmed a negative effect of risk on consumers' loyalty toward OFDS subscription services. OFDS should understand the existing risk associated with subscription services and should reduce its overall effect. This could be completed by promoting educational campaigns that should increase consumers' awareness about risk. Such educational campaigns should emphasize how their information is collected, protected, and used, which will eventually minimize consumers' concerns about subscribing to OFDS. OFDS providers should explain such information explicitly and display messages to encourage consumers to read carefully while signing up for subscription services.

Given the role of performance risk in the general evaluation of risk, any potential systems failures could contribute to an increase in consumers' overall evaluations of risk. That is, OFDS

should address such system failures by providing immediate solutions, such as refund options. In cases when consumers may not be able to apply their benefit of being subscribers (e.g., reduced services fees, complimentary delivery fees), OFDS should be aware that such issues may stimulate subscribers' overall evaluations of risk, which could negatively impact loyalty. Restaurants also have important roles in mitigating such risks. For example, whenever they receive orders that includes special instructions (e.g., dietary restrictions), the restaurants should be able to communicate that information clearly to the consumers either through OFDS or directly at the time of order delivery. This way, risk perceptions may be diminished, and the restaurants may benefit from consumers' long-term commitment to ordering online or through OFDS.

5.9. Limitations and Directions for Further Research

Like all the studies in social science research, this study is characterized by several limitations. First, the study only reflects the consumers' perceptions of U.S.-based OFDS subscription services. This is a limitation because it represents only a characterization of the dynamics of the foodservice market in the U.S., described by the relatively low-cost transactions, relatively substantial distance between the restaurant and the consumers' residences, and the convenience orientation of consumers. It also reflects the technology infrastructure in the U.S. To broaden the scope of this research, future studies should replicate the study in multiple countries and using other subscription models. Second, the study was grounded in SET. This is a limitation because the SET presents a dual-factor perspective that has several notable advantages. Previous studies have confirmed other factors influencing consumers' loyalty in various contexts, such as hotels (Lee et al., 2014), restaurants (Peng et al., 2017), and online booking (Bilgihan et al., 2015). Thus, future studies could use other theories that can account for

the impact of other possible factors (e.g., trust, satisfaction) that are likely to have an impact on consumers' loyalty toward OFDS subscription services. The study includes only the social and economic benefit of OFDS subscription services. While this conceptualization provides encouraging insight for this initial study, future studies can include other dimensions of benefit (e.g., personalization) that can enhance consumers' loyalty toward such services. Specifically, consumers' loyalty can be strengthened by receiving personalized offers. In the OFDS context, consumers rely on the description of food items while searching. To build consumers' long-term relationships with OFDS subscription services, both OFDS providers and restaurants should provide clear information regarding food items. In addition, subscribers may be aware of new food items earlier than non-subscribers, which could lead them to appropriate the benefit of using such services. Finally, the study conceptualized dimensions of risk that are relevant to the system-related risk factors. Future studies could include other risk-related factors that can be associated with food safety practices.

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Tables

Table 2. 1 Demographic characteristics of respondents

Characteristics	%
Gender	
Male	52.3%
Female	46.9%
Transgender	0.4%
Prefer not to say	0.4%
Age	
24 or younger	20.6%
25-34	30.5%
35-44	26.7%
45-54	14.9%
55-64	3.1%
65 or older	4.2%
Income (annual per household)	
\$50,000 or less	33.9%
\$50,001 - \$100,000	38.2%
\$100,001 - \$150,000	18.7%
\$150,001 - \$200,000	6.5%
\$200,001 or more	2.7%
Education	
Up to High School	39.3%
Bachelor of Science/Arts	36.6%
Master's Degree	14.9%
Doctoral Degree	3.4%
M.D. and Law Degree	3.4%
Other	2.3%

Table 2. 2 Behavioral characteristics of respondents.

Characteristics	%
Frequency of purchasing through OFDS (as a subscriber)	
1-4 times	18.0%
5-8 times	26.1%
9-12 times	19.6%
More than 12 times	36.3%
Spending for each person (\$) (as a subscriber)	
\$10 and less than \$10	7.3%
\$11-\$20	27.8%
\$21-\$30	16.3%
\$31-\$40	11.0%
\$41-\$50	4.9%
\$51 or more	32.7%
Tipping to OFDS driver based on each check (%) (as a subscriber)	
10% and less than 10%	28.6%
11%-20%	38.9%
21%-30%	16.0%
More than 30%	16.5%

Table 2. 3 OFDS subscribers' characteristics

Characteristics	%
The most important factors when deciding to subscribe to OFDS subscription services.	
To receive exactly what I ordered.	97.7%
To receive my food order without having any issues.	96.6%
To get immediate feedback from customer support.	87.4%
To receive my food order faster than non-subscribers.	85.8%
To be able to order from exclusive menus (having unlimited access to all local restaurants' menus).	81.3%
To receive a personalized recommendation based on my previous orders.	77.5%
To receive personalized notifications about my food choice.	75.6%
The important factors while ordering food through OFDS	
Speed of receiving order	98.7%
Easy to use the system	96.9%
Offered discount(s)	96.1%
Price of food(s) and beverage(s)	95.8%
Personalized offers	90.8%
Personalized recommendation	77.1%
Willingness to pay (in U.S. dollars) per month for OFDS subscription services	
Less than \$8	12.0%
\$8 - \$15	65.1%
More than \$15	22.9%
Opinion regarding the price of OFDS subscription services	
Low	3.6%
Just right	64.8%
High	21.3%
Too high	10.3%

Table 2. 4 Reliability and validity test results.

Constructs and items	Factor Loadings (CCR)
Benefit	
Perceived Social Benefit	0.967
Perceived Economic Benefit	0.668
Perceived Social Benefit (Mimouni-Chaabane & Volle, 2010)	0.831
SB1: By using OFDS subscription services, I would belong to a community of people who share the same values.	0.783
SB2: By using OFDS subscription services, I would feel close to OFDS.	0.817
SB3: By using OFDS subscription services, I feel I share the same value as OFDS subscribers.	0.765
Perceived Economic Benefit (Tussyadiah, 2016)	0.805
EB1: Using OFDS subscription services helps me save money.	0.854
EB2: Using OFDS subscription services reduces the cost of ordering my food.	0.928
EB3: Using OFDS subscription services makes my food orders more affordable.	0.935
EB4: Using OFDS subscription services benefit me financially.	0.870
Risk	
Perceived Privacy Risk	0.922
Perceived Performance Risk	0.899
Perceived Overall Risk	0.873
Perceived Privacy Risk (Featherman & Pavlou, 2003)	0.884
PPR1: There is a high chance of losing control over personal information while using OFDS subscription services.	0.878
PPR2: Subscribing to OFDS would lead me to lose privacy due to my personal information being used without my knowledge.	0.885
PPR3: Internet hackers (criminals) might take control of my account if I use OFDS subscription services.	0.776

Note. CCR = Composite construct reliabilities.

Table 2. 4 (continued) Reliability and validity test results.

Constructs and items	Factor Loadings (CCR)
Perceived Performance Risk (Featherman & Pavlou, 2003)	0.917
PER1: OFDS subscription services might not perform well and create problems with my food order.	0.806
PER2: The security systems built into OFDS subscription services are not strong enough to protect my account.	0.834
PER3: The probability that something is wrong with the performance of OFDS subscription services is high.	0.848
PER4: Considering the expected level of service performance of OFDS subscription services, for me to sign up and use it would be risky.	0.851
PER5: OFDS subscription services may not perform well, leading to incomplete online food ordering.	0.811
Perceived Overall Risk (Featherman & Pavlou, 2003)	0.932
PR1: Overall, considering all sorts of factors combined, it would be risky if I use online food delivery systems (OFDS) subscription services.	0.854
PR2: Using OFDS subscription services to order my food would be risky.	0.878
PR3: OFDS subscription services are dangerous to use.	0.857
PR4: I think that using OFDS subscription services would add great uncertainty to my food ordering.	0.824
PR5: Using OFDS subscription services exposes me to overall risk.	0.866
Loyalty (Jani & Han, 2014)	0.780
LYT1: I am willing to keep OFDS subscription services in the future.	0.681
LYT2: I will recommend OFDS subscription services to my friends and associates.	0.752
LYT3: OFDS subscription services deserve my loyalty.	0.773

Note. CCR = Composite construct reliabilities.

Table 2. 5 Reliability and validity results

Constructs	Constructs	1	2	3	4	5	6
Perceived Economic Benefit	1	<u>0.622</u>					
Perceived Social Benefit	2	0.416	<u>0.805</u>				
Perceived Privacy Risk	3	0.014	0.007	<u>0.719</u>			
Perceived Performance Risk	4	0.014	0.007	0.687	<u>0.719</u>		
Perceived Overall Risk	5	0.013	0.006	0.646	0.687	<u>0.733</u>	
Loyalty	6	0.598	0.285	0.014	0.646	0.013	<u>0.542</u>

Note. The values on the diagonal represent the average variance extracted from each latent construct. The values under the diagonal represent the squared inter-construct correlations.

Table 2. 6 Hypothesis testing results

Hypotheses		Path Coefficient	<i>p</i> . Value	Information
H1	Benefit → Consumers' loyalty toward OFDS subscription services	0.821	$p < 0.001$	Supported
H2	Risk → Consumers' loyalty toward OFDS subscription services	-0.239	$p < 0.001$	Supported
		Factor Loadings		Information
H1a.	Perceived Social Benefit → Benefit	0.967	$p < 0.001$	Supported
H1b.	Perceived Economic Benefit → Benefit	0.668	$p < 0.001$	Supported
H2a.	Perceived Privacy Risk → Risk	0.922	$p < 0.001$	Supported
H2b.	Perceived Performance Risk → Risk	0.899	$p < 0.001$	Supported
H2c.	Perceived Overall Risk → Risk	0.873	$p < 0.001$	Supported

Figures

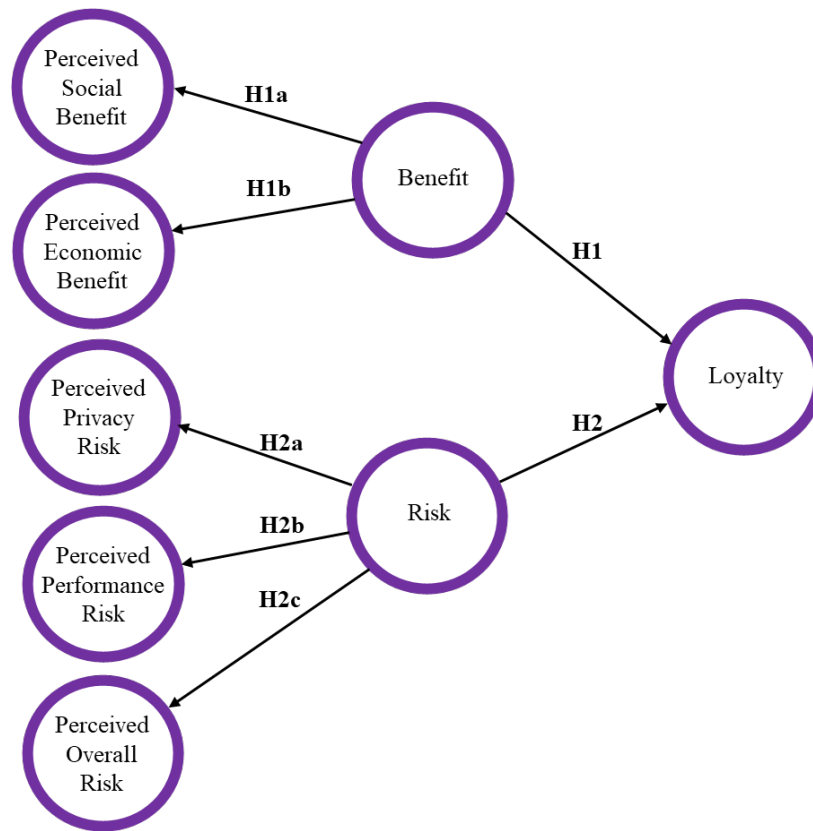


Figure 2. Conceptual Model of Study 2

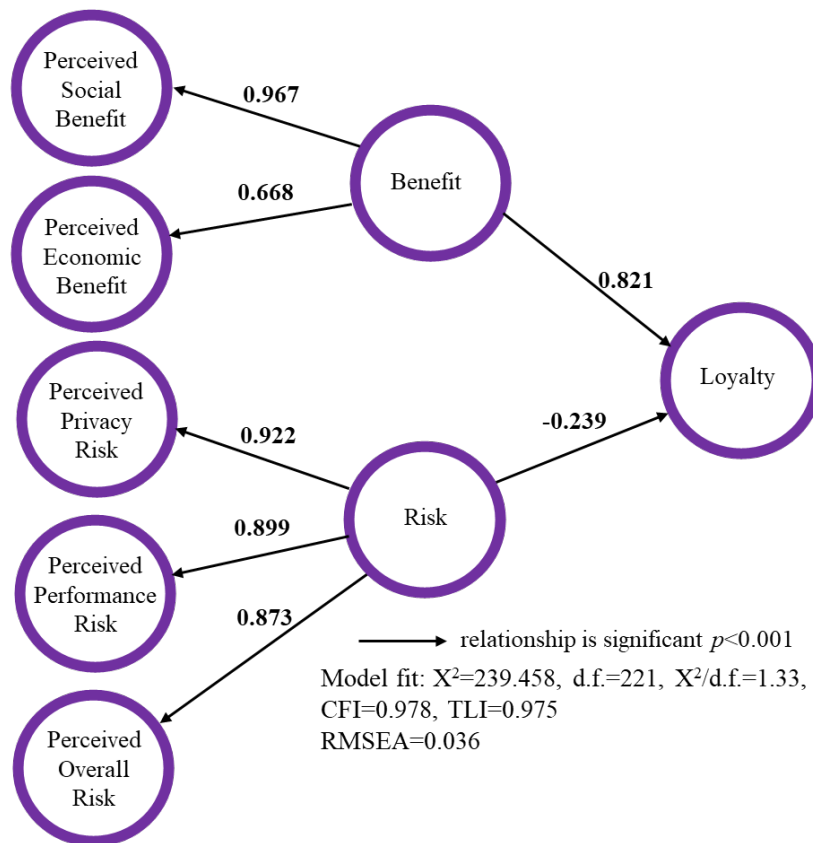


Figure 2. 2 Model Testing Results

Chapter VI

6.1. Summary

Subscription services have become an important element of Online Food Delivery Systems (OFDS) (Bandoim, 2020). OFDS subscription services generally provide benefits (e.g., deals on menu items, reduced delivery or service fees) as consumers pay a monthly fee, typically around \$9.99 (Barkho, 2019). While collaborating with such services, restaurants are also able to generate more revenue from the existing consumers, given the possibility of ordering online through OFDS (McCarthy, 2020). OFDS subscription services facilitate consumers' food ordering task completion differently than other hospitality information systems (e.g., self-service kiosks, in-room tablets), as the relationship between consumers and OFDS involves a long-term commitment. Despite the growing consumers' and hospitality scholars' interest in such services (Philbrook, 2021), the factors influencing consumers' intentions to use them remain unknown. Therefore, this research examined consumers' behaviors relative to OFDS subscription services.

Study 1 reconstructed the UTAUT2 model to capture the specific task-technology environment of using OFDS subscription services. UTAUT2 was modified by removing several original constructs (e.g., habit, price value) and adding three additional constructs: perceived security, convenience orientation, and compatibility. The study accomplished three specific objectives: (1) investigating the key antecedents influencing consumers' intentions to use OFDS subscription services, (2) explaining the role of compatibility and convenience orientation in influencing two core perceptions of OFDS subscription services: performance expectancy and effort expectancy, and (3) examining the role of perceived security in influencing consumers' use of OFDS subscription services. Multiple data analyses were used to accomplish the study's goal and objectives. Specifically, CFA (Confirmatory Factor Analysis) was conducted to assess the

study's measurement model and the instrument's reliability and validity. Then, Structural Equation Modeling (SEM) was used to determine the fit of the research model and test the hypotheses.

To explore deeper the dynamics of consumers using OFDS subscription services for the long term, Study 2 explored consumers' loyalty toward OFDS subscription services. As the attractiveness of OFDS subscription services continues to increase among U.S. consumers, the major OFDS provide premium offers to tempt their subscribers. Moreover, consumers may not be loyal to a single OFDS service. While the existing literature in hospitality revealed the key antecedents of consumers' loyalty in OFDS context, consumers' loyalty toward OFDS subscription services has not been studied yet. Given the multitude of subscription services available to consumers in various areas of the economy (e.g., software, movie streaming, etc.), it is important to investigate consumers' long-term commitment to such services, especially as the subscriptions can be cancelled without penalty at any time. Therefore, Study 2 used the Social Exchange Theory (SET) (Yan et al., 2016) to examine consumers' loyalty toward OFDS subscription services. The study explained consumers' perceptions of the benefit and risk associated with OFDS subscription services. Specifically, Study 2 included both benefit and risk as second-order constructs and evaluated the dimensions of such constructs. The study followed three specific objectives: (1) to validate benefit and risk as antecedents of loyalty toward OFDS subscription services, (2) to examine the dimensionality of the benefit of using OFDS subscription services, and (3) to examine the dimensionality of risk associated with the use of OFDS subscription services. CFA and SEM were used to assess the measurement model and test the hypotheses.

6.2. Major Findings

6.2.1. Study 1

The main goal of Study 1 was to examine consumers' intentions to use OFDS subscription services. The objectives of the study were to (1) investigate the key antecedents influencing consumers' intentions to use OFDS subscription services, (2) explain the role of compatibility and convenience orientation in influencing two core perceptions of OFDS subscription services: namely performance expectancy and effort expectancy, and (3) examine the role of perceived security in influencing consumers' use of OFDS subscription services. Data were collected from a sample of OFDS users utilizing the services of a marketing panel company. The total sample size was 573, and the data were collected in May 2021. To accomplish the three objectives, the following hypotheses were tested using SEM. The letter "S" indicates that the hypothesis was supported.

- **H1.** Consumers' performance expectancy is positively related to their intentions to use OFDS subscription services (S).
- **H2.** Consumers' effort expectancy is positively related to their intentions to use OFDS subscription services (S).
- **H3.** Consumers' effort expectancy is positively related to their performance expectancy of OFDS subscription services (S).
- **H4.** Consumers' social influence is positively related to their intentions to use OFDS subscription services (S).
- **H5.** Consumers' perceived security is positively related to their intentions to use OFDS subscription services (S).

- **H6.** Consumers' compatibility perceptions are positively related to their performance expectancy of using OFDS subscription services (S).
- **H7.** Consumers' convenience orientation is positively related to their effort expectancy of using OFDS subscription services (S).

The study used CFA (Anderson & Gerbing, 1989) to assess the instrument's reliability, convergent validity, and discriminant validity. According to the results, no issues related to reliability and validity were found. The research model was tested by conducting an SEM analysis. A positive relationship between performance expectancy and intentions to use OFDS subscription services was validated, supporting Hypothesis H1 ($\gamma=0.242, p<0.01$). The study confirmed a relationship between effort expectancy and consumers' intentions to use OFDS subscription services, thus Hypothesis H2 was supported ($\gamma=0.136, p<0.05$). A significant relationship was confirmed between effort expectancy and performance expectancy, therefore Hypothesis H3 was supported ($\beta =0.359, p<0.001$). A strong relationship was validated between social influence and intentions to use OFDS subscription, thus supporting Hypothesis H4 ($\gamma=0.473, p<0.001$). Specifically, social influence was found to be the strongest antecedent of intentions. Perceived security was validated as a significant antecedent of consumers' intentions to use, thus support hypothesis H5 ($\gamma=0.191, p<0.01$). A strong relationship was validated between compatibility and consumers' intentions to use OFDS subscription services, therefore Hypothesis H6 was supported ($\beta =0.550, p<0.001$). In addition, the strong relationship between convenience orientation and effort expectancy was validated, supporting Hypothesis H7 ($\beta =0.753, p<0.001$).

6.2.2. Study 2

Study 2 examined the role of benefit and risk in influencing consumers' loyalty toward OFDS subscription services. The study followed three objectives: (1) to validate benefit and risk as antecedents of loyalty toward OFDS subscription services, (2) to examine the dimensionality of benefit of using OFDS subscription services, and (3) to examine the dimensionality of risk associated with the use of OFDS subscription services. Study 2 included two second-order constructs, benefit and risk, as antecedents of consumers' loyalty toward OFDS subscription services. CFA was used to test the instrument's reliability, validity, and SEM was used to test the hypotheses. The study used a sample of 262 OFDS subscribers from the U.S. using an online survey conducted in May 2021. The letter "S" indicates that the hypothesis was supported.

- **H1.** Consumers' benefit of using OFDS subscription services is positively related to their loyalty toward OFDS subscription services (S).
- **H1a.** Perceived social benefit is a dimension of consumers' benefit of using OFDS subscription services (S).
- **H1b.** Perceived economic benefit is a dimension of consumers' benefit of using OFDS subscription services (S).
- **H2.** Consumers' risk of using OFDS subscription services is negatively related to their loyalty toward OFDS subscription services (S).
- **H2a.** Perceived privacy risk is a dimension of consumers' risk of using OFDS subscription services (S).
- **H2b.** Perceived performance risk is a dimension of consumers' risk of using OFDS subscription services (S).

- **H2c.** Consumers' perceived overall risk is a dimension of consumers' risk of using OFDS subscription services (S).

The measurement model's reliability and validity were assessed based on the results of the CFA (Anderson & Gerbing, 1988) using Mplus 8.0 (Muthén & Muthén, 2017). The results showed that the instrument was characterized by the appropriate reliability, and convergent and discriminant validity. SEM was used to assess the fit the research model and test the hypotheses. The model had an appropriate fit (Hair et al., 2009). The study validated the dimensionality of both benefit and risk. The factor loadings of first-order dimensions for benefit and risk were all above .681 and significant. A strong positive relationship was validated between benefit and consumers' loyalty toward OFDS subscription services, therefore supporting Hypothesis H1 ($\gamma=.821, p<0.001$). Risk had a negative impact on consumers' loyalty toward OFDS subscription services, thus supporting Hypothesis H2 ($\gamma=-.239, p<0.001$).

6.3. Discussions (Theoretical and Practical Implications)

Study 1 shed light on the under-researched topic of OFDS subscription services. This study adapted UTAUT2 to a unique and emerging information system task-technology environment becoming increasingly popular for scholars and users. This is the first research to recognize the consumers' intentions to use OFDS subscription services in the U.S. Addressing three main research gaps, and the study offered the primary blueprint of the factors that influence consumers intentions to use OFDS subscription services in the U.S. While the literature provides insight into the antecedents and outcomes of various perceptions instrumental to adoption, it was unclear what influences such perceptions in the context of OFDS. Therefore, addressing a second gap, this study examined the impact of convenience orientation and compatibility on two core perceptions of adoption theory. Both convenience orientation and compatibility were found to be

strong predictors of performance expectancy and effort expectancy, respectively. Given the importance of information security in contemporary electronic commerce, this study set out to examine a third important research gap, the role of perceived security in influencing consumers' use of IS. It was found that consumers perceived security is important in influencing such intentions.

The most notable result is that social influence was found to be the strongest predictor of consumers' intentions to use OFDS subscription services. It is important to recognize that the social environment has an important role in predicting the adoption of subscription services, which could be an important element of the marketing strategy of both OFDS and restaurants. For example, OFDS providers may use social media to promote their subscription services. Study 1 also found a significant relationship between compatibility and performance expectancy. OFDS providers should develop user interfaces that fit consumers' lifestyles to enhance the efficiency of food ordering tasks (e.g., tendencies to order on a daily basis). Consumers may already be familiar with comparable services (e.g., retail subscription services), making OFDS subscription services simple to use. While the structural model was validated, some surprising results stand out, such as the lower magnitude relationship between performance expectancy and intentions.

Study 1 confirmed two antecedents of performance expectancy: effort expectancy and compatibility. First, the study found a positive relationship between consumers' effort expectancy and performance expectancy of OFDS subscription services. As such, OFDS should consider this aspect to make food ordering tasks easy by providing user-friendly interfaces, so consumers can learn and complete food ordering processes with minimal effort, enhancing the efficiency of the entire process. Specifically, OFDS providers should offer personalized food

items based on consumers' unique preferences, and restaurants should consider adding concise information about food items to prevent confusion. The study also revealed a strong relationship between compatibility and performance expectancy. Consumers may have already developed a lifestyle with similar services (e.g., retailer subscription services), so they can complete food ordering tasks through OFDS subscription services efficiently. To maximize this aspect, OFDS providers can include unique offers (e.g., discounts at different times) in their advertising campaigns that align with consumers' mealtimes on a daily basis. Also, restaurants should ensure that the food items offered are aligned with consumers' interests and preferences. Overall, both OFDS providers' and restaurants' attempts can enhance the efficiency of food ordering tasks, further enhancing consumers' intentions to use OFDS subscription services.

Study 2 examined the role of benefit and risk in influencing consumers' loyalty toward OFDS subscription services. Using SET as the main theoretical foundation, this study investigated the main research gap and determined that consumers' perceived benefit of using OFDS services has a stronger influence on consumers' loyalty toward using OFDS subscription services relative to risk. Although research confirmed that economic benefits are linked to loyalty and loyalty programs in hospitality (Hanzaee & Esmaeilpour, 2017), OFDS subscribers want appropriate economic benefits. Study 2 also confirmed dimensions of risk related to using OFDS subscription services, thus addressing another important research gap. While the number of dimensions of risk varies from study to study, this study was able to validate three dimensions of risk: privacy, performance, and overall risk. Overall, Study 2 extends the hospitality literature by emphasizing the relevance of benefit and risk perceptions in consumers' overall loyalty assessment toward OFDS subscription services.

Study 2 provides valuable implications for both restaurants and OFDS providers. The first significant practical implication is that consumers who gain social benefit from these services will enhance the overall perception of the benefit regarding these services. To capitalize on this aspect, OFDS providers may develop online environments where consumers can engage and share ideas. Such settings address consumers' social belonging needs, influencing their perceptions of benefit resulting from OFDS subscription services. Study 2 also confirmed that economic benefit is significant for consumers and that economic incentives may enhance their views of the overall benefits resulting from OFDS subscriptions. As a result, both OFDS providers and restaurants could focus on offering direct economic benefits to consumers (e.g., cashback, time-limited offers). Study 2 also found that risk negatively influences consumers' loyalty toward OFDS subscription services. OFDS providers should be aware of the risk associated with the subscription services and work to mitigate them. It may be done by launching educational programs to educate consumers about the risk of using OFDS subscription services and how to avoid them.

6.4. Conclusions

Taken together the results of both the studies show that the social influence regarding the use of OFDS subscription services is important in shaping consumers' behaviors. OFDS subscription services became socially acceptable in consumers' lives, enhancing their perceptions that such services are beneficial. Consumers' adoption of such services is driven by others' opinions leading them to recognize the value of using them. Consumers match their lifestyles with the subscription services as they perceive the value of utilizing such services. Once consumers integrate OFDS subscription with their lifestyle, they may also recognize the benefits of subscribing to such services. The use of OFDS subscription services fulfills

consumers' social needs, leading them to commit to longer-term relationships. It is not surprising because the subscribers of such services are tech-savvy, have strong confidence in using them, and easily interact with other users (i.e., subscribers). Therefore, it is important to convey this information to the process of building a loyal consumers base.

Another common finding pertaining to both studies is the low impact of security and privacy perceptions on pro-OFDS subscription intentions. That is, both studies highlight the fact that consumers could be relatively less concerned about the way OFDS subscription services manage their personal information and possibly have a relatively good understanding about the way OFDS manage this important task. The reason could be that consumers have easy access to OFDS' terms and conditions, which makes them aware of the way their information is used once disclosed to OFDS. Moreover, OFDS systems allow consumers to unsubscribe at any time, limiting the potential impact of privacy/security concerns on intentions and possibly, behaviors. Moreover, the roles of consumers' perceptions reflecting other critical factors of OFDS subscription services (e.g., performance, economics) have been found to be less impactful. For example, consumers' long-term commitment to OFDS systems manifested through their subscriptions is not strongly linked to the ability of such system to address the task (i.e., optimized food ordering). Ultimately, it is important to recognize that the role of the social environment in influencing consumers' intentions to use OFDS and remain loyal overweighs the consumers' security/privacy or performance perceptions and should be viewed as the most critical aspect of OFDS subscription services.

6.5. Limitations and Further Research

Study 1 has several limitations. First, the generalizability of the study's findings is limited as the data were collected in the U.S only. It would be insightful to replicate this study in

other countries or regional markets. Also, Study 1 completed its data collection while restaurants continued their operations with limited capacity due to the ongoing COVID-19 pandemic.

Therefore, future studies should consider this aspect and conduct research when the restaurants are providing full service. In addition, the study analyzed the data by using structural equation modelling. Future studies can use experimental research design to examine consumers' purchasing behaviors by focusing on price-related variables explicitly in the OFDS context.

Given its conceptual and methodological similarity to Study 1, Study 2 is characterized by similar limitations. The study only reflects the consumers' perceptions of benefit, risk, and loyalty toward US-based OFDS subscription services. Hence, the results may have limited generalizability outside the U.S. This provides interesting opportunities for further research, as generally the online commerce protocols are similar among countries; yet the infrastructure and the consumers' perceptions and behaviors may be different. Another specific limitation is the fact that it used SET as a theoretical foundation. Future studies can use other theories and incorporate other constructs that could be useful in understanding the factors that drive consumers' loyalty toward OFDS subscription services. Finally, Study 2 conceptualized dimensions of risk relevant to the system-related risk factors. Future studies could include other risk-related factors associated with food safety practices.

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APPENDICES

Appendix I. Approval of Institutional Review Board



APPROVAL OF SUBMISSION

April 6, 2021 Nefike

Gunden

ngunden@uh.edu

Dear Nefike Gunden:

On April 6, 2021, the IRB reviewed the following submission:

Type of Review:	Initial Study
Title of Study:	Antecedents of using the online food delivery subscription services
Investigator:	Nefike Gunden
IRB ID:	STUDY00002934
Funding/ Proposed Funding:	Name: Unfunded
Award ID:	
Award Title:	
IND, IDE, or HDE:	None

Documents Reviewed:	• Nefike Gunden_HRP-502e - TEMPLATE COVER LETTER-3-29-2021, Category: Consent Form; • Nefike Gunden_IRB_Collaboration Kantar, Category: Recruitment Materials; • Nefike Gunden_HRP-503 Protocol Template-3-29-2021, Category: IRB Protocol; • Nefike Gunden_IRB_Qualtrics Survey Software_Version 2, Category: Study tools (ex: surveys, interview/focus group questions, data collection forms, etc.);
Review Category:	Exempt
Committee Name:	Not Applicable
IRB Coordinator:	Sandra Arntz



The IRB approved the study on April 6, 2021 ; recruitment and procedures detailed within the approved protocol may now be initiated.

As this study was approved under an exempt or expedited process, recently revised regulatory requirements do not require the submission of annual continuing review documentation. However, it is critical that the following submissions are made to the IRB to ensure continued compliance:

- Modifications to the protocol prior to initiating any changes (for example, the addition of study personnel, updated recruitment materials, change in study design, requests for additional subjects)
- Reportable New Information/Unanticipated Problems Involving Risks to Subjects or Others

- Study Closure

Unless a waiver has been granted by the IRB, use the stamped consent form approved by the IRB to document consent. The approved version may be downloaded from the documents tab.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system.

Sincerely,

Research Integrity and Oversight (RIO)

Office University of Houston, Division of

Research 713 743 9204

cphs@central.uh.edu

<http://www.uh.edu/research/compliance/irb-cphs/>

Appendix II. Data Collection 1 Survey Questionnaire

Definition

Online food delivery systems (OFDS) are technology systems, such as websites or mobile applications (apps), that enable consumers to order food items from restaurants for delivery or pickup (e.g., UberEATS, DoorDash, Grubhub, etc.). Consumers order food items that are already cooked and ready to eat. Consumers can choose a restaurant from the list of multiple restaurants. The orders are processed without calling or communicating directly with the restaurant. The term "food" includes beverages as well.

Please click on the button below to continue.

Have you placed an order from a restaurant through OFDS during the last 12 months?

Yes

No

The following questions will ask about you some brief demographic information.

What is your gender?

Male

Female

Transgender

Prefer not to
answer

Prefer to
self-describe

What is your year of birth?

How online food delivery subscription services work

OFDS subscription services allow consumers to order food items. Consumers receive food items from the restaurant that are already cooked. Consumers can sign up for the OFDS subscription services that offer benefits (e.g., complimentary delivery fee, reduced service fee, cashback, etc.). Consumers pay around \$9.99 monthly for the subscription services and they can cancel the service anytime without the penalty.

Before you begin the survey, please refer to the following scenario:

Imagine that you are thinking about purchasing a subscription for an online food delivery service. Based on this subscription service, you may receive personalized notifications about your favorite restaurant that is having promotions/sales through OFDS subscription services. Imagine that you also can receive additional benefits, such as free delivery and reduced service fee, as you complete your online orders. Imagine that you can unsubscribe anytime without the penalty.

Please click on the button below to continue.

The following questions will ask your perceptions of the performance expectancy of online food delivery systems (OFDS) subscription services.

Using OFDS subscription services help me to order my food efficiently (such as ordering food items based on personalized offers).

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Using OFDS subscription services would improve the quality of my food ordering.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Using OFDS subscription services allows me to complete my food ordering quickly (the necessary information including address, method of payment, etc., being ready to complete the food ordering quickly).

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Using OFDS subscription services would enhance the effectiveness of my food ordering.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Using OFDS subscription services is useful while ordering food online.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

The following questions will ask your perceptions of the effort necessary to use online food delivery systems (OFDS) subscription services.

Learning how to use OFDS subscription services is easy for me.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

My interaction with OFDS subscription services is clear and understandable.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

I find it easy to use OFDS subscription services.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

It is easy for me to become skillful at using OFDS subscription services.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Please, select the Neutral option.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Please complete the following questions thinking about food ordering using OFDS subscription services.

Using OFDS subscription services would...

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
help me to order my food in a convenient way.	☐	☐	☐	☐	☐
not make my food ordering a hassle.	☐	☐	☐	☐	☐
help me to order food without any extra effort.	☐	☐	☐	☐	☐
help me to use my time wisely.	☐	☐	☐	☐	☐
help me not to waste time when ordering food.	☐	☐	☐	☐	☐
enable me to order food quickly.	☐	☐	☐	☐	☐

The following questions will ask your perceptions of online food delivery systems (OFDS) subscription services.

Using OFDS subscription services would well with my life style.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Using OFDS subscription services would be compatible with my needs.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Using OFDS subscription services would fit well with the way I like to get things done.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

The following questions will ask you about the influence of significant others regarding the use of online food delivery systems (OFDS) subscription services.

People who are important to me think that I should use OFDS subscription services.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

People who influence my behavior think that I should use OFDS subscription services.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

People whose opinions I value prefer that I use OFDS subscription services.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

The following questions will ask your perceptions of online food delivery systems (OFDS) subscription services.

OFDS subscription services are secure systems through which to send sensitive information across the Internet.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

I would feel secure providing personal information when using OFDS subscription services.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

I am not worried that the information I provide could be used by other people when I am using OFDS subscription services.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Overall, OFDS subscription services are safe to transmit sensitive information.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

The following questions will ask about your future intentions to use online food delivery systems (OFDS) subscription services.

I intend to use OFDS subscription services in the future.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

I will always try to use OFDS subscription services.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

I will recommend to others to use OFDS subscription services in the future.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

OFDS subscription services would be among my favorite technologies.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

The following questions will ask about your personal preferences when dining in restaurants.

How many times a month do you dine in a restaurant? *(Please move the slider until you obtain the desired number).*

0 10 20 30 40 50

If more than 50 times, please type the number in the text box.



How much do you generally spend per person (in U.S. dollars) in a restaurant outing? *(Please move the slider until you obtain the desired number).*

1 31 61 90 120 150

If more than \$150, please type the number in the text box.



How much do you generally spend per person (in U.S. dollars) on an online food order? *(Please move the slider until you obtain the desired number).*

1 31 61 90 120 150

If more than \$150, please type the number in the text box.



How important are the following when you order food through OFDS?

	Not important	Low in importance	Important	Very important	Extremely important
Speed of receiving order	☐	☐	☐	☐	☐
Easy to use the system	☐	☐	☐	☐	☐
Price of food(s) and beverage(s)	☐	☐	☐	☐	☐
Offered discount(s)	☐	☐	☐	☐	☐
Personalized recommendation	☐	☐	☐	☐	☐
Personalized offers	☐	☐	☐	☐	☐

How much are you willing to pay (in U.S. dollars) per month for an online food delivery subscription service with benefits such as complimentary delivery, reduced service fee, personalized discounts, etc.? *(Please move the slider until you obtain the desired number).*

0 4 8 12 16 20

If more than \$20 please type the amount in the text box.

The price of the online food delivery systems (OFDS) subscription service is on average \$9.99 monthly. In your opinion, is this cost...

Too low	Low	Just right	High	Too high	No opinion
---------	-----	------------	------	----------	------------

The following questions will ask about you some brief demographic information.

What is your annual household income?

\$50,000
or less

\$50,001-\$100,000

\$100,001-\$150,000

\$150,001-\$200,000

\$200,001
or more

What is your highest level of education you have achieved to date?

Not graduated from High School

High School Degree or equivalent

Bachelor of Science/Arts or equivalent

Master's Degree or equivalent

Doctoral Degree or equivalent

MD Degree or equivalent

Law Degree or equivalent

Other, please specify:

We would like to thank you for taking time and completing our questionnaire.

Ms. Nefike Gunden.

Appendix III. Data Collection 2 Survey Questionnaire

The question below will ask you about your previous use of online food ordering systems (OFDS) subscription services.

Have you subscribed to OFDS during the last 12 months?

Yes

No

Are you still subscribed to OFDS?

Yes

No

The following questions will ask your perception of online food delivery systems (OFDS) subscription services.

By using OFDS subscription services, I would belong to a community of people who share the same values.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

By using OFDS subscription services, I would feel close to OFDS.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

By using OFDS subscription services, I feel I share the same value as OFDS subscribers.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

The following questions will ask your perception of online food delivery systems (OFDS) subscription services.

Using OFDS subscription services helps me save money.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Using OFDS subscription services reduces the cost of ordering my food.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Using OFDS subscription services makes my food orders more affordable.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Using OFDS subscription services benefits me financially.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

The following questions will ask about your general opinions regarding online food delivery systems (OFDS) subscription services.

OFDS subscription services might not perform well and create problems with my food order.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

The security systems built into the OFDS subscription services are not strong enough to protect my account.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

The probability that something is wrong with the performance of OFDS subscription services is high.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Considering the expected level of service performance of OFDS subscription services, for me to sign up and use it would be risky.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

OFDS subscription services may not perform well, leading to incomplete online food ordering.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

The following questions will ask about your general opinions regarding online food delivery systems (OFDS) subscription services.

There is a high chance of losing control over personal information while using OFDS subscription services.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Subscribing to OFDS would lead me to lose privacy due to my personal information being used without my knowledge.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Internet hackers (criminals) might take control of my account if I use the OFDS subscription services.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

The following questions will ask about your general opinions about online food delivery systems (OFDS) subscription services.

Overall, considering all sorts of factors combined, it would be risky if I use online food delivery systems (OFDS) subscription services.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Using OFDS subscription services to order my food would be risky.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

OFDS subscription services are dangerous to use.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

I think that using OFDS subscription services would add great uncertainty to my food ordering.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Using OFDS subscription services exposes me to overall risk.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

Please complete the following questions thinking about the online food delivery system (OFDS) subscription services.

As an OFDS subscriber, how many times do you order from an OFDS during a typical month? *(Please move the slider until you obtain the desired number).*

0 10 20 30 40 50

If more than 50 times, please type the number in the box.



As an OFDS subscriber, how much do you generally spend per person (in U.S. dollars) on each food order from an OFDS? *(Please move the slider until you obtain the desired number).*

0 30 60 90 120 150

If more than \$150, please type the number in the text box.



In general, as a OFDS subscriber, when you order from an OFDS, what percentage of your check do you generally tip to the OFDS driver?

(Please move the slider until you obtain the desired percentage.)

0 10 20 30 40 50

If more than 50%, please type the percentage in the text box.



Please complete the following questions while thinking about the online food delivery system (OFDS) subscription services.

How important are the following when deciding to subscribe to OFDS?

	Not important	Low in importance	Important	Very important	Extremely important
To receive my food order faster than non-subscribers.	☐	☐	☐	☐	☐
To receive my food order without having any issues.	☐	☐	☐	☐	☐
To receive exactly what I ordered.	☐	☐	☐	☐	☐
To receive complimentary food items on my birthday.	☐	☐	☐	☐	☐
To receive personalized notifications about my food choice.	☐	☐	☐	☐	☐
To receive a personalized recommendation based on my previous orders.	☐	☐	☐	☐	☐
To be able to order from exclusive menus (having unlimited access to all local restaurant' menus).	☐	☐	☐	☐	☐
To get immediate feedback from customer support.	☐	☐	☐	☐	☐

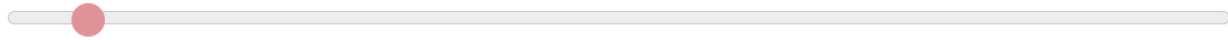
How important are the following when you order food through OFDS?

	Not important	Low in importance	Important	Very important	Extremely important
Speed of receiving order	☐	☐	☐	☐	☐
Easy to use the system	☐	☐	☐	☐	☐
Price of food(s) and beverage(s)	☐	☐	☐	☐	☐
Offered discount(s)	☐	☐	☐	☐	☐
Personalized recommendation	☐	☐	☐	☐	☐
Personalized offers	☐	☐	☐	☐	☐

How much are you willing to pay (in U.S. dollars) per month for an online food delivery subscription service with benefits such as complimentary delivery, reduced service fee, personalized discounts, etc.? *(Please move the slider until you obtain the desired number).*

0 4 8 12 16 20

If more than \$20 please type the amount in the text box.



The price of the online food delivery systems (OFDS) subscription service is on average \$9.99 monthly. In your opinion, is this cost...

Too low

Low

Just right

High

Too high

No
opinion

The following questions will ask about you some brief demographic information.

What is your annual household income?

\$50,000
or less

\$50,001-\$100,000

\$100,001-\$150,000

\$150,001-\$200,000

\$200,001
or more

What is your highest level of education you have achieved to date?

Not graduated from High School

High School Degree or equivalent

Bachelor of Science/Arts or equivalent

Master's Degree or equivalent

Doctoral Degree or equivalent

MD Degree or equivalent

Law Degree or equivalent

Other, please specify:

We would like to thank you for taking time and completing our questionnaire.

Ms. Nefike Gunden.