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Food Delivery Applications Becoming Alligator of Hotel Supply Chain: An Empirical Analysis

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Abstract

Purpose: Online-To-Offline Food Delivery Services (O2O-FDS) is a new element in hotel supply chain that digitalizes traditional food delivery practices using new technologies. Targeting hotel guests, the present research is to explore the role of trust in the relationship between food delivery app on loyalty, price efficiency, and convenience. This new perspective is an essential value addition in the field of hotel marketing in relation to O2O-FDS. **Research design, data and methodology:** The present research conducted the mediator variable regression analysis as a main statistical methodology to identify the connections between three main constructs using total 244 South Korean participants that were recruited from the professional research company in Korea. **Results:** The statistical findings based on three steps of mediator regression approach strongly indicate that the trust of food delivery app in the hotel sector plays a moderating role in the relationship between price efficiency and convenience of food delivery app and customer loyalty of food delivery app in the hotel business. **Conclusions:** This research concludes that hotel practitioners must strive to provide adequate information on food delivery applications in order to increase price efficiency and convenience relative to traditional food and beverage services, influencing consumer trust in food delivery technology.

Keywords : Hotel Supply Chain, App Distribution Strategy, Food Delivery Apps, Consumer Loyalty

JEL Classification Code: L83, L86, M31, C46

1. Introduction

E-commerce food shopping is one of the emerging areas, resulting in dramatic changes in hotel marketing and supply chain. Online-To-Offline Food Delivery Services (O2O-FDS) is a new element in hotel supply chain that digitalizes traditional food delivery practices using new technologies (Martínez-López & D'Alessandro, 2020). O2O-FDS has significantly revolutionized Business-to-Consumer (B2C) food shopping by supplementing last-mile logistic services. Food delivery applications enable users to conveniently identify listed hotels, menus, request orders through an online portal, and track their purchases without physical and telephonic engagement with the actual vendors.

Trust of the food delivery app is one of most important factors in hotel marketing, particularly in relation to brand management and consumer loyalty. In their quantitative study, Su et al. (2022) sought to investigate the relationship between customer trust of food delivery technology on consumer loyalty to O20-FDS. Su et al. (2022) utilize the technology acceptance model, mobile service quality (M-SERQUAL) elements, and privacy-personalization theory

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to understand the interrelationship between trust and consumer purchasing behaviors. Su et al. (2022) argue that integrating trust of food delivery app in the marketing strategy could improve users' intention to use food delivery technology. In a similar fashion, Cho et al. (2019) demonstrate that creating a positive attitude regarding a food delivery application may improve sales and enhance buyers' relationship with the brand. Therefore, recognizing the psychological effect of a food delivery app on buyers is essential for hotel marketers since it can foster positive perceptions and enhance loyalty.

Developing a marketing campaign that is hinged on users' trust on food delivery technology is an effective way of diagnosing competitive advantage. This research involves comparing the benefits of food delivery apps and traditional food and beverage services. Therefore, marketers could leverage the element of trust in food delivery technology to measure their competitiveness relative to hotel food and beverage categories. According to the prior study (Burlea-Schiopoiu et al., 2022), the perceived trust and safety of an online delivery application directly affects users' continuation intention. In their research, Cho and his associates (2019) discovered that user trustworthiness is the most critical quality attribute of the food delivery app segment.

Integrating food delivery applications in the hotel supply chain could result in various benefits, particularly if users demonstrate increased confidence in the price efficiency and convenience of this emergent last-mile logistics service. Firstly, increased confidence in price efficiency and convenience of food delivery app could encourage aggregators to delve into more innovative strategies of improving the supply chain, for example, drone delivery. Previous researches that leveraged the technology acceptance model and the theory of planned behavior concluded that product innovativeness is instrumental in enhancing users' confidence in food delivery application (Choe et al., 2021; Ali et al., 2020; Chakraborty et al., 2022). Unlike in traditional food and beverage, which rely heavily on human labor for performance, food delivery technology involves limited human interaction, which might lead to improved quality, time saving, and resource management (Choe et al., 2021; Ray et al., 2019). Through innovative techniques, such as, drone technology, organizations could achieve dramatic reductions in prices and save the time required to visit and order from a traditional hotel food and beverage service.

Secondly, customers who exhibit high levels of confidence in the price efficiency and convenience of food delivery apps are likely to engage in more effective purchasing decisions than those who use traditional food and beverage services. According to the study (Troise et al., 2020), online food delivery is important because it increases consumers' ability to apply accurate food-buying decision-making processes. In addition, Troise et al. (2020) establish that food delivery applications are more advantageous and cost-effective than traditional food and beverage services. Customers with a positive evaluation of a food delivery app, especially in terms of price efficiency and convenience, do not only demonstrate high levels of confidence but also improved knowledge of buyer decision-making process: information search, evaluation of alternatives, purchase decision, and post-purchase evaluation (Gupta & Duggal, 2020). Largely, this information, whether it is collected from a hotel's website or through third-party aggregators, is more accurate than the one generated through customer feedback in traditional food and beverage service. As a result, hotel marketers can rely on the information generated through customer feedback to improve on future product promotion strategies.

1.1. Research Gap

Previous research has focused on the factors that influence the utilization of food delivery applications in the hospitality industry. In their study, Martínez-López and D'Alessandro (2020) identified socio-demographic characteristics, consumer segments, food choice motives, innovation-adoption characteristics, food categories, and reference effect as key determinants of B2C food shopping. In another study by the prior research (Habib et al., 2022), perceived convenience and ease of use of the information technology was one of the key factors that influence consumer purchasing decisions, continuance (loyalty), and discontinuance.

In their quantitative study, Hwang et al. (2019) explored users' behavioral characteristics and attitudes towards food delivery technology on purchasing behavior and loyalty. Previous researchers have leveraged major theoretical constructs, such as the theory of planned behavior, the unified theory of acceptance and use of technology 2 (UTAUT2) (Lee et al., 2019), the technology acceptance model (TAM) (Hong et al., 2021; Agarwal & Sahu, 2022) to establish users' purchasing decisions. While researchers have adopted psychological and psychosocial models to investigate the relationship between food delivery technologies and consumer loyalty, there is a lack of studies exploring the role of trust in the relationship between food delivery app on loyalty, price efficiency, and convenience.

This research contributes to existing research by discussing more about the importance of trust in the food delivery app on moderating the relationship between price efficiency and convenience and technology adoption and continuation intention. This new perspective is an essential value addition in the field of hotel marketing in relation to O2O-FDS.

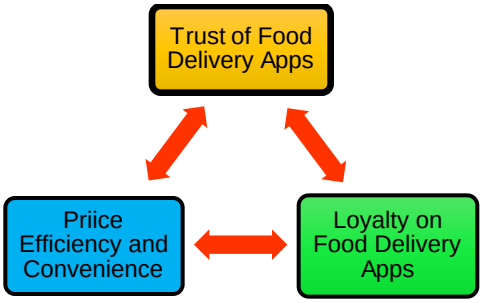

Figure 1: Research Model of the Present Research

2. Literature Review

2.1. Price Efficiency and Convenience on Trust of Food Delivery App

Largely, there is a causal link between product attributes or innovation characteristics with consumers' psychological associations with food delivery applications. In reference to the prior research (Kumar & Shah, 2021), a food delivery application that contains relevant information regarding products and services available increases consumers' trust in the technology. Previous researchers have leveraged relational theory (Agarwal & Sahu, 2022), technology acceptance model, and innovation resistance theory (Suhartanto et al., 2019) to explain the relationship between innovation attributes (price efficiency and convenience) and trust in online food ordering platforms.

Food delivery apps that seek to maximize buyers' positive financial and personal experiences may be associated with increased buyer positive attitudes (Nguyen et al., 2019). Congruity with self-image, which is an element of convenience, appears as a key driver of consumer trust in food delivery technology (Kaur et al., 2021). In their research, Suhartanto et al. (2019) argued that food delivery apps enhance convenience and price efficiency because they enable consumers to compare product features. Price efficiency and convenience of food delivery apps enhances users' capacity to make informed decisions throughout the buyer decision spectrum (Mehrolia et al., 2021). Suhartanto et al. (2019) state that the beneficial qualities of food delivery technologies are associated with increased perceived value or trust, which influences consumer loyalty in the long-term perspective. As indicated in the previous section, the elements of relational theory are applicable in explaining the relationship between price efficiency and convenience of food delivery applications and trust in food delivery applications. According to Lee et al. (2019), food delivery platforms provide high-quality information that allow consumers to conduct an effective search, evaluation, and purchasing decision. Unlike in traditional food and beverage services, virtual food ordering enables consumers to visualize service offerings and access demonstrations of online food categories (Suhartanto et al., 2019).

In line with the innovation resistance theory, active resistance to an innovation may be associated with its direct characteristics, such as, price efficiency and convenience (Kaur et al., 2020). Under the innovation resistance theory framework, price efficiency and convenience represent active resistance because they consist some of the direct attributes of an innovation. Previous researchers have demonstrated that the direct qualities of an innovation influence consumer perceived value and attitude toward food delivery technologies. In addition, Pillai et al. (2022) established a positive correlation between perceived ease of use (convenience) under the technology acceptance model and consumer psychological association with food delivery applications.

Moreover, Burlea-Schiopoiu and his colleagues (2022) state that consumer attitudes are directly influenced by perceived ease of use (convenience), source credibility, and information quality. In their study that focused on the role of marketing in influencing consumer decision processes, Burlea-Schiopoiu and his associates (2022) also noted that convenience and accessibility are some of the most critical determinants of consumer trust because they have contributed towards the shift from using traditional hotel food and beverage services to ordering food online. Although some of the findings in the previous research (Burlea-Schiopoiu et al., 2022) are not generalizable because the research was conducted during the height of the COVID-19 pandemic, the authors collected information from a large population sample, thereby increasing the credibility of their results. Therefore, the unique attributes of a food delivery innovation play a critical role in influencing consumer choices and psychological aspects, such as, trust in the food delivery platform.

2.2. Price Efficiency, Convenience, and Customer Loyalty

The price efficiency theory posits that investors (hotels and aggregators) are unlikely to achieve excess returns by charging premium prices because relevant information about pricing methodologies are available to the public (Veen et al., 2020). The efficient market hypothesis states that prices in the markets are adjusted on a real-time basis because all relevant details are digested into the system in a rapid manner. Food delivery apps appear as important sources of market information because they enable consumers to order, expedite, and pay for requested commodities. In their study, Kaur et al. (2021) demonstrate a causal link between price and users' reordering intentions

using food delivery apps.

Previous studies have demonstrated a positive relationship between price efficiency and convenience of food delivery app on customer loyalty of food delivery app in the hotel sector. Martínez-López and D'Alessandro (2020) demonstrated that perceived compatibility and perceived relative advantage, and perceived risk are critical issues in determining consumer loyalty and adoption of food delivery applications. Perceived compatibility refers to the alignment between an e-commerce food shopping platform and a consumer's lifestyle and values, while perceived relative advantage denotes the superiority of a food delivery app in comparison with traditional hotel food and beverage service (Martínez-López & D'Alessandro, 2020; Belanche et al., 2020). In particular, perceived relative advantage involves a comparison of price efficiency and convenience between traditional hotel services and O2O-FDS. O2O-FDS offer price efficiency and convenience, which has been significantly associated with customer Loyalty of food delivery App in the hotel business. The previous research group (Shah et al., 2021) argued that O2O-FDS offer e-coupons, expedited delivery, cost savings, thereby increasing consumer loyalty on O2O-FDS.

In reference to the study (Chotigo & Kadono, 2021), price value is one of the most important factors that influence the use of food delivery app. Organizations in the hospitality industry, including hotels, use price adjustment mechanisms as a marketing strategy to enhance buyers' purchasing decisions and subsequent usage behavior. The majority of food aggregators lower prices and reduce the perceived costs of their business to increase customer satisfaction and encourage continued use (Su et al., 2022). Price efficiency is an important element of food delivery apps that encourage continuance behaviors (loyalty). According to the previous study (Belanche et al., 2020), food aggregators collaborate with stakeholders in the hospitality industry to provide value-added marketing techniques, for instance, cross-selling, which significantly contribute to price efficiency. In line with the theoretical construct of price efficiency, food delivery apps contribute to market efficiency through cross-selling initiatives. Ordering through a food delivery application could enable users to benefit from price reductions and special discounts, particularly for first-time users (Wang, 2020). Therefore, cross-selling is one of the main product-promotion strategies that hotel marketers could leverage to enhance price efficiency and increase consumer loyalty to a food delivery app.

Convenience refers to the ability of a food delivery app to significantly reduce users' time and effort (Chotigo & Kadono, 2021). Previous researchers have demonstrated that convenience is essential in influencing consumer preference for information technology (Chotigo & Kadono, 2021; Su et al., 2022). Food delivery apps are more convenient than traditional hotel food and beverage because customers are not obliged to spend more time travelling, ordering, and consuming food in a fixed location. In their study, Suk et al. (2020) discovered that the convenience of use is associated with customer satisfaction and loyalty. In addition, food delivery applications that align with consumers' lifestyles, for example, eating at home and ordering by a smartphone, are likely to enhance convenience for users and increase customer loyalty in the long-term view (Trabucchi & Buganza, 2020). Online food delivery is a new innovation and a last-mile logistics service that is considered convenient for online shoppers (Belanche et al., 2020). In reference to the prior study (Martínez-López & D'Alessandro, 2020), food delivery apps offer purchasing convenience, availability of food varieties, and processed convenience, which are some of the most important factors influencing brand loyalty.

2.3. Moderating Role of Trust on Price, Convenience and Customer Loyalty

The trust of food delivery app plays a moderating role in the relationship between price efficiency, convenience and customer loyalty of OFS-FDS. According to Chotigo and Kadono (2021), trust refers to the belief that a food delivery application is beneficial to the user. Wen et al. (2021) argued that trust is an important predictor of technology adoption and consumer loyalty to the brand. One of the key components of the prior research (Martínez-López & D'Alessandro, 2020) involved investigating the role of app-service quality on the adoption of food delivery app. Moreover, Martínez-López and D'Alessandro (2020) identified a three-factorial construct regarding app-service quality in line with consumer perceptions: trustworthiness, app design, and information quality. For the purpose of this research, the construct of app trustworthiness denotes "trust of food delivery app".

The trust of food delivery app (trustworthiness) refers to the extent to which customers believe the information provided by the O2O-FDS app, reputation of the app operator, and operational capability of the platform (Verma, 2020). The service quality of food delivery app, including a high level of trustworthiness, is a major predictor of consumer loyalty of OFS-FDS (Wen et al., 2021). The theory of planned behavior could be useful in understanding consumer attitudes and beliefs regarding the adoption of food delivery technology and usage behavior. The theory of planned behavior is a social-psychological model that posits that users' subjective perceptions about other people, attitudes, and personal perceptions about available resources determine behavioral intentions (Belanche et al., 2020). Currently, researchers are highly interested in understanding

consumers' purchase intentions, continuation intentions, loyalty, and psychological factors influencing buying decisions (Hwang et al., 2021).

Previous researchers have primarily emphasized technology-related aspects of delivery apps as the key determinants of adoption (Muangmee et al., 2021). For example, Yeo et al. (2017) explored ease of use and users' perceived usefulness of technology on attitude toward the adoption of delivery technologies. In their study, Su et al. (2022) demonstrate that trust in the delivery technology acts a moderator of the effects of M-SERVQUAL and the technology adoption model factors (price efficiency and convenience), which in-turn impacts on customer loyalty.

In their quantitative study, Chotigo and Kadono (2021) utilized the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) to understand users' intention to adopt food delivery technology. The UTAUT2 model integrates various components, which include hedonic condition, social influence, habit, effort expectancy, and performance expectancy, to assess users' behavioral intention to purchase and use an automated device (Sharma et al., 2021; Kim & Kang, 2022). The developers of the model, Venkatesh et al. (2012), intended to create a framework to enable explanations about users' intentions adopt an information system and analyze subsequent usage behavior (Agarwal & Sahu, 2022). Kaur and his associates (2021) used the UTAUT2 model to theorize the relationship between consumers' trust in food delivery apps and loyalty, in which they assert that trustworthiness moderates the service attributes (price efficiency and convenience) and customer loyalty of information technology.

In addition, according to the prior study (Ahn & Kwon, 2021), consumer trust in food delivery applications moderates the relationship between service attributes and customer loyalty by influencing customer brand relationships with the delivery technology. The study (Ahn & Kwon, 2021) leverages relational theory, which investigates customers' perceived social exchange, economic exchange, and mutual interests. According to relational theory, perceived social exchange (convenience through social lifestyle alignment), perceived economic exchange (price efficiency), and perceived mutual interests (price efficiency and convenience) in food delivery applications is pivotal in influencing perceived equity (trustworthiness) (Ahn & Kwon, 2021; Ayman, et al., 2022). The level of trustworthiness exhibited by a consumer plays a moderating role between the factors in relational theory, which include price efficiency and convenience, and loyalty intention toward brand applications (Hakim et al., 2022).

In their study, Kaur and his colleagues (2020) used innovation resistance construct to theorize the moderating role of trust on user technology adoption and loyalty. The innovation resistance theory states that consumers may engage in passive or active resistance to a new product or service (Chen et al., 2018). Active resistance involves a consideration of the functional qualities of an innovation, for example, value (price) and ease of use (convenience), while passive resistance concerns psychological barriers, which include perceived trust on the innovation (Gunden et al., 2020). The innovation resistance theory provides a new dimension in existing literature by providing new information that can help scholars to identify the moderating role of trust (through passive resistance) in the relationship between innovation characteristics (price efficiency and convenience) and customer loyalty of food delivery application.

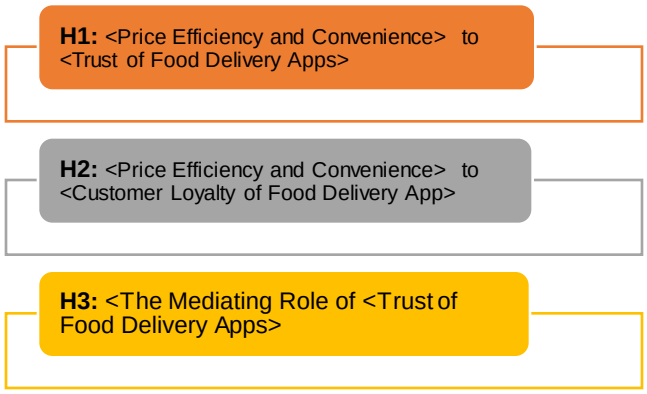

Figure 2: Hypotheses of the Current Research

All in all, from numerous previous studies, we could formulate three hypotheses reasonably (See the figure 2). Our first hypothesis posits the strong connection between 'Price efficiency and convenience of food delivery App' in hotel and 'Trust of food delivery App'. The second hypothesis indicates a significant association between 'Price efficiency and convenience of food delivery App' in hotel and 'Customer Loyalty of food delivery App in hotel'. Lastly, our third hypothesis investigates the indirect effect of 'Trustworthiness for food delivery apps between 'Price efficiency and Convenience' and 'Customer Loyalty' of Food Delivery Apps', using the food delivery apps to order foods in hotel instead of the hotel F&B service.

3. Methodology

3.1. Prior Resources for the Instrument and Measures

One of the main goals of this investigation was to take a look at closely a set of relationships associated with food delivery apps through the analysis of preceding research to create a basis for further review. In this regard, the research

efforts indicate how the efficiency of prices and the comfort of usage, confidence in the relevant food services, and loyalty to them are associated. Generally, the information obtained during the investigation proved crucial for establishing the independent hypotheses of the presented research.

The main group to consider in the outlined case involves the users of food delivery applications, who underwent a survey-based analysis that included 13 diverging questions/statements designed around the Likert scale (Strongly Disagree=1 ~Strongly Agree=5). Approximately 46 Percent of the survey touched upon the issues of cost and convenience, 23 percent involved the phenomenon of trust, and another 31 percent focused on loyalty. A full breakdown of the data in survey question is in Table 1.

Table 1: Questionnaire Description from the Privious Research

Key Constructs	Resources
Price efficiency and convenience (6 items)	Items were drawn from the prior instrument (Cho et al., 2019).
Trustworthy (3 items)	Items were drawn from the prior instruments (Cho et al., 2019).
Loyalty (4 items)	Items were drawn from the prior instruments (Casidy & Wymer, 2016) and (Sim et al., 2006).

3.2. Sample

The recruitment process for the sample included access to the individuals who were available for research at the time. In this respect, a group of South Korean people selected via an expert research-centric business became a perfect choice. The main demand was that the individuals had an experience of using the food applications in the hotel settings. Generally, the present authors appear to be rather confident in the strength of the sample because it used the assistance of a professional research company when selecting the group for research.

This company has not only provided us with access to the individuals but also offered them additional information for analysis. The overall method for the selection of the research sample participants proved to be potent: it involved a so-called 'Stratified Random Sampling' This method includes a complex separation of the populations into subtypes based on subtle characteristics. As a result, the distribution of the individuals, in this case, proved to be potent as it took issues associated with age and gender into consideration.

3.3. Data Collection Process

Once it managed to establish the research group, the outlined firm (its specialization is marketing) offered the investigators the use of internal platform for the establishment of the survey example. Upon its creation, the authors and the company sent a message to various individuals connected with the firm to participate in the survey. Ultimately, 217 respondents fit the criteria (apart from having used food applications in hotels, they also had to be 20 years and older as well as live in South Korea proper) and agreed to participate in the research.

The overall sample proved to be rather balanced. Primarily, the present authors have managed to achieve almost complete gender parity. 52.5% of the participants were male; 47.5% were female. This information allows saying that the results apply to both genders and enables a reliable analysis of divergences. In terms of age, the groups proved to be rather close concerning their consistency. People between 20 and 29 years and beyond 40 years both represent roughly a third of the sample (32% and 28.3%, respectively). At the same time, individuals between 30 and 39 take up slightly more than a third of the group (39.8%) (See the Table 2 and 3 for more details).

Table 2: Obtaining Procedure of Final Usable Dataset

	# of Survey	Percentile (%)
Distributed Questionnaire	704	100
Returned Questionnaire	273	38.8
Excluded Questionnaire	56	8.0
Final Selected Questionnaire	217	30.8

Table 3: Demographic Information of Final Usable Data

	# of Response	Percentile (%)
Male	114	52.5
Female	103	47.5
-Age Distribution		
20s	71	32.0
30s	87	39.8
40s	45	23.8
50s	8	3.3
60s	6	1.2
-Monthly Income Level		
Less than $ 2,000	50	23.0
Between $2,000 and $3,000	56	25.8
Between $3,000 and $4,000	51	23.5
Between $4,000 and $5,000	33	15.2
More than $ 5,000	28	12.9
-Employment Status		
Professional	25	11.5
Administrative / Clerical	101	46.5
Sales / Service	17	7.8
Production / Technical	9	4.2
Self-Employed	20	9.2
Household	15	6.9
Student	16	7,4
Unemployed	14	6.5

3.4. Statistical Analysis Procedure of Mediator Variable Regression

When it comes to statistical analysis, the outlined research used the mediation method as its basis. Due to it receiving confirmation through a set of sources, many people view it as one of the main approaches for establishing the cause-effect connection in research (Abd-Elmotaleb & Saha, 2013). The strength of the method receives confirmation in, for example, its high level of use among the relevant researchers (Baron & Kenny, 1986). In the end, the current authors decided to follow the traditional three-step model towards the establishment of the mediators and their function. One can see the implementation of the past suggestions for research in this study, as outlined in Table 4.

Table 4: Three Steps of Mediator Variable Regression

First Step	Second Step	Final Step
*From Independent Factor to Mediator Factor	*From Independent Factor to Dependent Factor	*The Mediating Role
*Investigating the connection between (1) Price Efficiency and Convenience and (2) Trustworthy	*Investigating the connection between (1) Price Efficiency and Convenience and (3) Loyalty	*Measuring both (1) and (2) are statistically matched with (3)

4. Results

4.1. Descriptive Statistics and Reliability

The primary step to consider was the utilization of descriptive statistics methods. They assisted with the preparation of the responses for the full-scale analysis by helping organize them. Four analytics methods became central to the research. They involved the focus on approaches such as Median, Standard Deviation, and Mean (See Table 5).

Table 5: The Results of Descriptive Statistics

	Price Efficiency, Convenience	Trust	Loyalty
Mean	3.49	3.62	3.55
Median	3.53	3.65	3.59
SD	0.772	0.729	0.681

Upon performing the summary of the key information, the authors utilized SPSS 24 software to test the reliability of the measures established for this research. In this regard, the idea was to follow the past research and ensure the use of one item-related factor for a singular concept only if Cronbach Alpha exceeded the 0.7 value (Djakasaputra et al., 2021; Al-Osail et al., 2015). The confidence analysis results for the internal consistency were presented in Table 6 and all numerical data can be found.

Table 6: The Results of Gauzing an Internal Consistency

Main Construct	# of Survey Item	Cronbach α Value
Price Efficiency and Convenience	6	0.846
Trustworthy	3	0.811
Loyalty	4	0.773

4.2. Mediator Variable Regression

The key three-step method used for analysis, as mentioned previously, stems from Baron and Kenny (1986). Its current name is the mediator regression approach. The first action to consider was to see whether the independent variable had a significant impact on the mediator one. Hence, a contrast of Price Efficiency and Convenience with Trustworthiness via the regression analysis occurred, as recommended by Baron and Kenny (1996). To finalize the step, the authors chose an ANOVA table to see the significance levels via the existing P-values.

The current standard for the ANOVA tables is that the P value has to be below the 0.05 scope to validate the long-term reliability of research. In this respect, Figure 3 and Table 7 rather clearly illustrate that the researchers have managed to uphold the presented standard. Further analysis via the coefficient table also proved that the validity of the research values was strong (as indicated by Table 7, once again).

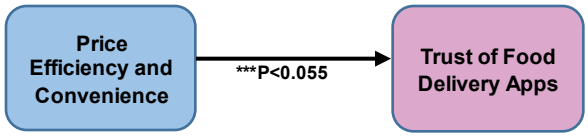

Figure 3: First Step of Mediator Variable Regression

Based on the aforementioned information, the present authors managed to proceed to the second object of analysis, the connection between the mediator and the dependent factor (Baron & Kenny, 1986). Once again, the presented data fit the ANOVA P values requirements. More information on the numbers stems from Figure 4 and Table 7.

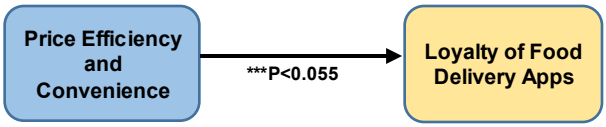

Figure 4: Second Step of Mediator Variable Regression

The final step is possible only if the two preceding ones are successful, as Baron and Kenny (1996) show. In this

regard, the goal is to observe the connection of the independent value and the relevant parameter to the dependent variable. In the end, the conclusions concerning the statistical validity once again prove to be positive. Firstly, the authors have found that "Trustworthiness" had a significant mediation effect if one considered independent and dependent factors. Secondly, this effect was possible because, as the recommendations indicated, the independent variable did not feature a major statistical impact in this context, with only the mediator one being important for the dependent factor (Baron & Kenny, 1986). More information on the topic is present in Figure 5 and Table 7. All in all, the outlined analysis makes it possible to see the relevant hypotheses as valid from the standpoint of the existing research.

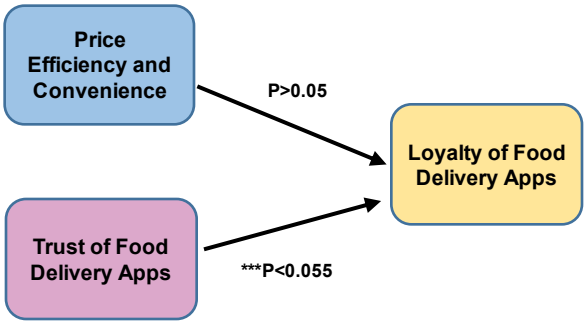

Figure 5: Final Step of Mediator Variable Regression

Table 7: Results of Mediator Variable Regression

	Step 1	Step 2	Step 3
Statistical Measurement (P-Value) in ANOVA Table	0.003***	0.002***	0.000***
Statistical Measurement (P-Value) in Coefficient	0.000***	0.003***	*Price Efficiency and Convenience to Trustworthy: 0.601 (P>0.05) Trustworthy to Loyalty: 0.001*** (P<0.05)
Testing Result of Hypotheses	H1: Accepted	H2: Accepted	H3: Total Indirect Effect (Accepted)

***p < 0.05

5. Conclusions and Implications

The food delivery applications have significantly revolutionized hotel supply chain and marketing. The current study investigated the relationship between innovation attributes, trust, and loyalty. In particular, the current authors sought to understand the relationship between price efficiency and convenience of food delivery app on customer loyalty on food delivery app. We hypothesized that price efficiency and convenience of food delivery app has a significant influence on customer loyalty of food delivery app in the hotel business. In addition, we predicted that price efficiency and convenience has a significant impact on trust of food delivery app in the hotel sector. Additionally, we posited that trust of food delivery app in the hotel sector plays a moderating role in the relationship between price efficiency and convenience of food delivery app and customer loyalty of food delivery app in the hotel business.

The current study has concluded that price efficiency and convenience is an important innovation attribute that has a direct influence on consumer trust of an online food ordering platform. This argument has been substantiated using relational theory, the technology acceptance model (TAM), UTAUT2, and innovation resistance theory (Park & Lee, 2021; Gu et al., 2019; Yoo & Park, 2019). The majority of authors have demonstrated that price efficiency and convenience has a positive correlation with customer loyalty of a food delivery application. If the food delivery app is easy to use and offers price benefits, consumers are likely to adopt it and reorder using it in the future. Essentially, if the food delivery application increases the convenience and reduces the cost of the purchasing decision process, consumers may exhibit continuation intentions. The results of this study indicate that consumers' psychological factors (trust in the food delivery application) moderate the relationship between price efficiency and convenience and customer loyalty of the food ordering technology.

Firstly, in the future, scholars must continuously experiment and integrate multiple theories in their analyses in order to understand emerging knowledge bases in hotel marketing and supply chain. One of the trending issues mentioned in this research is the utilization of drone technology in the food delivery application and hotel supply chain (Widyatama et al., 2020). An interdisciplinary methodology is needed to enable researchers to develop or modify current theoretical frameworks in order to accommodate trending factors in hotel marketing. Currently, there are inadequate studies investigating the issues discussed in this paper, particularly the moderating role of trust in the relationship between innovation attributes and customer loyalty. Therefore, researchers will be compelled to adopt more theory-driven frameworks in their academic work to increase the credibility of their findings.

Secondly, since the majority of the sources utilized in this research were completed during the height of the COVID-19 pandemic, some of the results may not be generalizable. In order to increase the validity and generalizability of the research after the pandemic, researchers may utilize longitudinal methodologies and probability sampling

techniques. A longitudinal research could enable future researchers to incorporate additional variables in their work to better explain the relationships between price efficiency and convenience with customer loyalty and trust. Even when models, such as, UTAUT2, the technology acceptance model, the theory of planned behavior, and innovation resistance theory have been applied in this research, academicians should re-examine the theories in the context of the rapidly-changing hotel supply chain, primarily the proliferation of drone technology in food delivery.

Based on the findings of this study, hotel managers and marketers must strive to provide adequate information on food delivery applications in order to increase price efficiency and convenience relative to traditional food and beverage services. Notably, price efficiency and convenience play an essential role in influencing consumer trust in food delivery technology. As a result, managers and marketers must acknowledge that there are active barriers (direct product characteristics) that may create negative user appraisals and psychological influences on consumers (Horta et al., 2021). A thorough understanding of the attributes of the innovation may enable product promoters to offer discounts and marketing initiatives that align with consumer interests, such as, lifestyle.

Because the field of hotel marketing is changing in a dramatic fashion, marketers ought to invest heavily in big data and analytics to capture real-time consumer responses through social media. One of the strategic advantages presented by food delivery applications to marketers include the opportunity to use cross-selling initiatives to enhance customer loyalty and trust (Nguyen et al., 2019). Product promotion strategies could entail incorporating customer voices (co-creation approaches) through social media interactions. As a result, hotel marketers may use new technologies to analyze user emoticons and online behavior in order to customize product and service offerings.

Hotel managers must engage in collaborative work relationship with food aggregators and third-party logistics providers. This research has confirmed the hypothesis that price efficiency and convenience of food delivery applications have a direct impact on customer trust and loyalty. As a result, aggregators should harmonize their supply chain elements with the aim of reducing the total logistical costs of delivering a product. At the same time, the collaboration should emphasize increasing user convenience to ensure that customer trust and loyalty are maintained. Some of the supply chain and logistical areas of collaboration between aggregators and hotel personnel include order management, planning, routing, and artificial intelligence (Xu & Huang, 2019). Positive aggregator-hotel relationships could increase the speed of delivery and lower costs, resulting in improved customer trust and loyalty.

6. Limitations and Future Direction

This study suffers from three limitations, relating to the generalizability of results, research length, and methodology. Firstly, although the findings of this study are generalizable in the sense that they can be applied in multiple contexts, some of the results are country-specific. For example, the majority of the sources included in this research collect data from developing countries, which include Thailand and China. As a result, marketers and aggregators could experience difficulties while implementing the recommended steps in developing countries. While drone technology appears as an emerging trend in the sector, some developing countries do not have the technical and information capacity to operationalize this technology.

Secondly, the researcher did not have adequate time to cover the issue of food delivery app in greater depth. As indicated previously, food delivery applications have caused dramatic changes in the hotel supply chain. Currently, there is a scarcity of models and research to investigate the issue, with the majority of sources being documented during the COVID-19 pandemic. This lack of information may have limited the researcher's ability to understand the interrelationships between theories and components.

Thirdly, the researcher relied heavily on a qualitative method of data collection, which may have suffered from a lack of statistical representation of data. While qualitative research has been applied successfully in analyzing the role of technology in promoting customer loyalty, this study should have adopted a mixed-method of research in order to enable complementarity. The lack of a statistical representation of the population sample and results may have resulted in misleading conclusions. Additionally, the study may have been biased because it relied on the experience of the researcher.

In the future, researchers should adopt a mixed-method of research to contextualize insights and enhance the generalizability of results. A mix-method research approach enables scholars to identify elements of complementarity in a given study. Since hotel marketers and managers operate within a complex ecosystem and supply chain, future researchers could be interested in understanding interactions between various supply chain components, which include sourcing, distribution, and customer service. In other words, researchers could use the results of this study to explore the interrelationships between the direct features of a technology and other areas of hotel supply chain and marketing. In such a case, future research could use a mixed-method of data collection to enhance meaningfulness, interpretability, and construct validity. Because a mixed-method of study adopts an expansionist approach, it may allow future researchers to increase the breadth and range of the research.

Moreover, future research should investigate the role of

emerging trends in food delivery applications and the potential impacts on price, convenience, and customer loyalty. Drone delivery is likely to cause dramatic changes in the way hotel marketers operationalize customer service operations and supplier relationships. With environmental sustainability emerging as a key feature of hotel marketing, future researchers may consider evaluating the role of drone delivery in managing environmental costs. Moreover, some of the theories applied, such as, the technology acceptance model and UTAUT2 may integrate a sustainability component. This approach could enable researchers to understand the impacts of drone delivery on trust of the food delivery application, particularly concerning safety because of the limited level of human interaction.

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