

THE CAUSAL RELATIONSHIP IN INFLUENCING BUYING BEHAVIOR OF ONLINE FOOD DELIVERY IN THE BANGKOK AREA

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ABSTRACT

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The purpose of this paper is to conduct a study about determinants of demographic, psychological, and behavioral factors which influence the buying behavior of consumers of online food delivery in the Bangkok area. A quantitative and exploratory approach was followed in this research throughout the collection and analysis of data related to personal traits, satisfaction, and behavior. A sample of 448 respondents that was associated with online food delivery service in Bangkok was used. Moreover, Confirmative Factor Analysis (CFA) and Structural Equation Model (SEM) techniques were used to track the relationship among elementary traits, consumer satisfaction, and buying behavior. It was found that elementary trait influences consumers' satisfaction and buying behavior. Contextual society was also a significant factor while determining individual traits. In particular, consumer lifestyle, consumer behavior, and consumer response understanding are the crucial tools for marketing strategies and marketing implementation in this disruptive changing. Moreover, consumer insights can create consumer satisfaction strategy with a competitive advantage in the online food industry, including in enhancing the buying behavior of the regular consumer. This study comprises valuable data for entrepreneurs and other groups in digital age. Furthermore, this study was operationalized by developing and testing CFA, and SEM for validity and reliability as well.

Keywords: Online food delivery; trait; satisfaction; behavior; buying

1. INTRODUCTION

Global online food ordering and delivery services have been an emerging business since the rise of the digital economy, especially in developed countries in Europe and the US. As the food delivery market has increased with online ordering platforms, the customer has the facility to opt for various options, such as the ability to select the type of food, quality of food, a promotion, to search for restaurants and to compare prices. In 2019, the worldwide income for online food ordering was about 107.4 billion US dollars and is expected to grow to 164 billion US dollars by 2024.

In 2020, the income in the online food delivery segment accounted for 249 million US dollars under which the largest segment was owned by restaurant's consumer delivery services with a market volume of 191

million in US dollars. In addition, it is anticipated that an annual growth rate of 13.4% will be achieved and a forecast of US\$ 413 million is predicted in market volume by 2024 (Statista, 2020). In Asia, China had growth of 65% in 2017 (BLT, 2018) related to online food ordering services, and most of the revenue has been generated during the COVID-19 pandemic period, which was about US\$ 45,909 million (Statista, 2020). Also, for 90% of market share, food online orders were mostly ordered by smartphone (Kuijpers et al., 2020). So far, in Thailand, the total value of this market segment stood at 26 billion baht in 2017 and the total value of restaurant's market share was 397,000 million baht. Moreover, the total value of the food delivery market grew to 27,000 million baht, which contributes 7% to the restaurant market (Ratirita, 2018). Meanwhile, the growth of online food delivery was 18%, which shows the potential of this business model (GlobalLinker staff, 2019). This growth has proved to be an interesting investment opportunity for ordering online food delivery services as the revenue hit 31.7 billion baht and continues to rise dramatically.

The target market of this service covers generation X to millennials, especially in terms of gender where women are more likely to buy food than men. McKinsey & Company reports that 84% of the online food delivery service accounts for home delivery, 16% for office delivery, and almost 77% of people reorder with a platform service (BLT, 2018).

In addition to this, Blumtritt (2022) anticipated that the revenue in the eServices Online Food Delivery market worldwide will grow until 2024. According to Digital Market Outlook, the revenue of the eServices Online Food Delivery Segment Platform-to-Consumer Delivery worldwide is expected to be 96,864.4 million U.S. dollars in 2024.

Over the past few years, online food ordering trends have been increasing rapidly. The process of ordering online food and delivering it to consumers is considered as online food delivery. Due to the rise of technology, fast services are more achievable with superior smartphones providing the chance for food delivery to be very fast, and a wide variety of food types are available to be delivered to consumer's doorsteps. With the development of food delivery applications, consumers can register in a portal in order to make frequent ordering more convenient with less complexity. In 2018, the global online food ordering market reached US \$ 84.6 billion and in 2024, it is estimated that the market will further reach US \$164.5 billion.

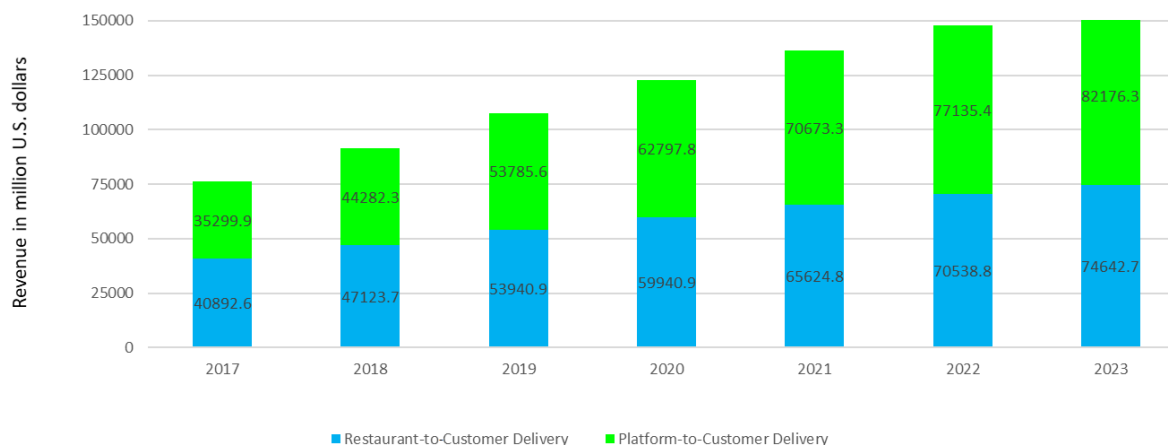


Figure 1: Revenue Forecast for the Online Food Delivery Market Worldwide (In Million US\$)

Source: Adjusted from Statista (2019)

Figure 1 indicates the increasing rate of revenue forecasted for the online food delivery for the market worldwide for both restaurant to customer delivery and platform to customer delivery services. The online food delivery annual growth rate since 2014-2018 has been over 10%, which is higher than the growth rate of the restaurant sector at the same time i.e., 3-4% per year (Kasikorn Research Center, 2019). Moreover, 63% of respondents believe that online food delivery has changed the behavior of consumers. In fact, the market share of restaurant revenue in the online food delivery market is estimated to be about 26 billion baht. In 2019, the online food delivery will amount to THB 33 -35 billion, about a 14% hike in 2018, while as in 2019, Thailand's total restaurant business value was about 8% (Kasikorn Research Center, 2019).

2. LITERATURE REVIEW

The study of consumer behavior comprises behavioral factors of individuals and organizations focusing on the selection of products and services. An individual or entrepreneur should emphasize on

consumer segmentation, customization of products and services to specific niche groups or individuals. Understanding consumer insight enables the firm to analyze the purchasing behaviors of a homogenous segment rather than perceiving the needs of a heterogeneous segment. In addition, using consumer behavior as a segmentation strategy aims to describe the response over consumer satisfaction by creating an outstanding advantage in the marketplace. Although mass marketing strategies are no longer effective, a selective segmentation strategy is considered significant for gaining a competitive advantage (Hollywood et al., 2007).

The influencing role of different factors on consumer behavior include such variables as demographic, geographical, behavioral, psychological, attitudinal, values, lifestyle, motivational and personal factors. Each segmentation strategy has limitations in its application and the choice of variables is usually determined by the context of the study (Meneely et al., 2009).

Personal factors

Personal factors are characteristics which can be split in term of age, occupation, income, lifestyle, personality, and self-esteem structures. These have an influence on the buying behavior of the consumer (Rani, 2014). Age is a crucial element in consumer decision making, which creates differences among various consumer behaviors. Occupation has a direct impact on the behavior of the buying consumer and it is found that income has a high influence on buying power (Rani, 2014). As a result, consumers with lower incomes are not able to order from online services frequently.

Khaniwale (2015) noticed that each person has their own elementary traits including uniqueness of characteristics such as personal lifestyle, age, career, revenue, education level, etc. All these have an influence on the consumer's decision and the consumer's buying behavior. Yakup and Jablonsk (2012) found that personal factors have also affected consumer preferences of selection in consumption and purchasing products or service with the passage of time. Factors associated with occupation impact the buying behavior of consumers related to their own choices in the decision process and buying behavior. In addition, revenue and expenditure level with spending money and decision making affects product or service choices. Yakup and Jablonsk (2012) agreed that the income of consumers has a significant impression in the selection and purchasing of a product or service, so entrepreneurs must plan marketing strategies for various groups of consumers.

Mowen (1993) classified four types of variables consisting of elemental traits as compound traits, situational traits, and surface traits in the group of personality and motivation using the following approach. This paper will analyse the personal factors and related attributes among consumers by ordering from online food delivery services in the Bangkok area focusing on element traits. The element traits which indicate the populous mention the Big Five personality traits and the materialism or material value scale (MVS) of personal performs as a facet of consumer behaviour that identified and developed by Richins (2004) as follows:

- Openness to experience mentions personal curiosity and new challenges faced;
- Consciousness measures concentration with consistency;
- Extraversion demonstrates comfort with other relationships;
- Agreeableness captures a person's tendency to comply with others;
- Neuroticism deals with flexibility to cope with stress and management;
- Material needs relate to how one perceives the material belongings as an important life attitude.

The Big Five personality traits are extraversion, agreeableness, consciousness, neuroticism, openness to experience, material needs, and these depict the principle of elemental traits of this paper as shown below in Figure 2.

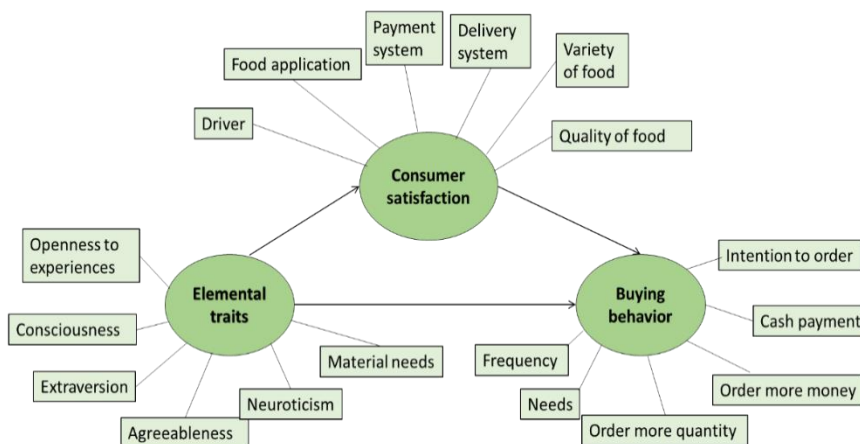


Figure 2: Conceptual Model
Source: Adapted from Wong et al. (2014)

This study aims to conduct a study on the determinants of demographic, psychological, and behavioral factors, and consumer satisfaction influencing buying behavior from online food delivery services in the Bangkok area, as shown in Figure 2. The research hypotheses are as follows:

- **H1:** Elementary factors influence consumer satisfaction through ordering from online food delivery services in the Bangkok area.
- **H2:** Consumer satisfaction influences buying through ordering from online food delivery services in the Bangkok area.
- **H3:** Elementary factors influence buying through ordering from online food delivery services in the Bangkok area.

Blackwell et al. (2001) defined consumer behavior as “the activities people undertake when obtaining, consuming, and disposing of product and service”. While Peter et al. (2006) stated, “it mentions human thoughts and attitudes, experience, and the performance they act in the consumption process. It is about the feedbacks from others, promotion mixed, price cooperation, features, attributes, packaging, and involves exchange processing”. Solomon (2009) observed that consumer behavior involves activities when individuals or groups selectively purchase, use, or dispose of products, services, ideas, or experiences to satisfy needs.

Overt behavior refers to observable and measurable responses from consumers; it is an external process and can be observed directly rather than being an internal psychological process (Peter and Olson, 2008). Marketer cited purchasing behavior and found in most cases that sales increased due to word of mouth, loyalty of consumers, frequency of purchasing, the quantity of product, the transaction of services, the reorder or repurchasing from both existing and new consumers, the maintained purchasing of existing consumers and the growth of online commerce leading to globalization. Although competition now is arduous, emerging from the thousands of web sites spanning throughout world, online commerce is a successful channel for shopping 24 hours a day. Consumers can receive the product and price information within seconds from any site, and more choices of products for comparison. On the other hand, consumers cannot touch products and there may be a lack of security in terms of privacy, payment, and quality of products. It is a source of disappointment for improvement. A good marketer ought to be recognized with superior consumer satisfaction.

Furthermore, when an entrepreneur prefers online commerce, it decreases the costs of operating a business, and it is a very specialized and customized business with real time purchasing. On the other hand, it faces fierce price competition, and potential conflicts with conventional retailers.

Overall feeling or attitude determines customer satisfaction or dissatisfaction related to the purchased product. A consumer engages in a process of evaluation, namely, consumer expectation and consumer perception. If consumer perception is higher than consumer expectation, then it leads to customer delightfulness whereas if consumer perception meets with expectation, then it leads to customer satisfaction, or otherwise, consumer dissatisfaction.

Online buying with social media

Many researchers have studied about e-commerce and concluded that online buying decisions are the rational processes with information processing for decision buying behavior (Verhagen and van Dolen, 2011). In addition, the evolution of the internet 2.0 has dramatically changed the way of carrying out transactions between sellers and buyers. Specifically, it indicates that social commerce is the branch of e-commerce that incorporates the use of social media in all types of commercial activities (Xiang et al., 2016). Moreover, 65% of social media users affirm that social networks influence their buying, and powerfully inspire their online buying behavior (PWC, 2016). Riegner (2007) mentioned that social media influencers affect consumers while buying, and these influencers lead to higher online buying than offline transactions.

3. RESEARCH METHODOLOGY

For data analysis, the models are tested by using a two-stage structural equation model. Initially, it uses Confirmatory Factor Analysis (CFA) to construct validity with convergent and discriminant validity. Then, for the validity of each construct setting, the items of each construct in path analysis are tested empirically with the research hypotheses in the second stage by use of a Structural Equation Model (SEM) (Chaudhuri and Holbrook, 2001).

The data for this research was taken from questionnaires with 448 respondents who order online food in the province of Bangkok. The three dimensions included in the instrument measurement checklist are:

- a) Elementary traits** in six elements: openness to experiences, consciousness, extraversion, agreeableness, neuroticism, and material needs.

b) Buying behavior of consumers in six dimensions: frequency of online food ordering, the need to reorder online food, the tendency to order food online with a greater amount of money, the tendency to order food online for a greater quantity of products, the preference of paying by cash, and the willingness to order food online.

c) Consumer satisfaction in six dimensions: satisfaction with the service from drivers, satisfaction with the service from online ordering applications, satisfaction with the service from payment systems, satisfaction with the service from the delivery system, satisfaction with the variety of food, and satisfaction with the quality of food.

Questionnaires consisting of 4 parts focused on demographic background details, and 3 dimensions as elementary traits, behavior, and satisfaction. Demographic background was collected from 448 respondents as part of data collection (see Table 1). Out of all respondents, approximately 62.3 percent of the respondents were female, and 37.7 percent were male. The data collected revealed a lack of diversity in people's race because almost all were Thai nationals, however, it does not affect the findings of the study. Large groups of respondents were with strong representation from the 41-60 years' age group (78.3%). Only 21.7% respondents were aged 20-40 years. The education profile of the survey respondents' sample was categorized by having a bachelor's degree related to the population of respondents.

Table 1: Demographic of Respondents

Status	N = 448	
	Number	Percentage
Sex		
Male	169	37.7
Female	279	62.3
Age		
20-40 years old	97	21.7
41-60 years old	351	78.3
Education		
Lower than a bachelor's degree	46	10.3
Bachelor's degree	402	89.7

4. FINDINGS

The aim of this research was to study the causal relationship in influencing buying behavior of online food ordering in the Bangkok area. The first step was to examine six dimensions of elementary trait factors: openness to experiences, consciousness, extraversion, agreeableness, and material needs perspective regarding influencing online food ordering, except for the neuroticism perspective, as shown in Table 2. From Table 2, 3 and 4, the level of scale is 1-1.80 is lowest, 1.81-2.60 is low, 2.61-3.40 is medium, 3.41-4.20 is high and 4.21-5.00 is highest.

Table 2: Mean, Standard Deviation of 6 Elementary Traits

Elementary traits	Results (n=448)		
	\bar{x}	S.D.	Result
1. Openness to experiences	4.04	0.68	high
2. Consciousness	4.06	0.71	high
3. Extraversion	4.00	0.75	high
4. Agreeableness	4.23	0.67	highest
5. Neuroticism	3.40	1.11	medium
6. Material needs	3.71	0.82	high

Table 3: Mean, Standard Deviation of Consumer Satisfaction with Online Food Ordering

Satisfaction	Level of opinion		
	\bar{x}	S.D.	Result
1. Service from driver	3.54	1.16	high
2. Online food ordering application	3.58	1.18	high
3. Payment system	3.58	1.17	high
4. Delivery system	3.64	1.12	highest
5. Variety of food	3.58	1.16	high
6. Quality of food	3.52	1.14	high

Table 4: Mean, Standard Deviation with Buyer Behavior of Online Food Ordering

Buyer behavior	Level of opinions		
	\bar{x}	S.D.	Result
1. Frequency of online food ordering	2.89	1.46	medium
2. Need of online food reordering	3.11	1.40	high
3. Tendency to order with more money	3.04	1.41	medium
4. Tendency to order with more quantity	3.29	1.38	highest
5. Payment with cash	3.04	1.40	high
6. Willingness to order	3.12	1.40	high

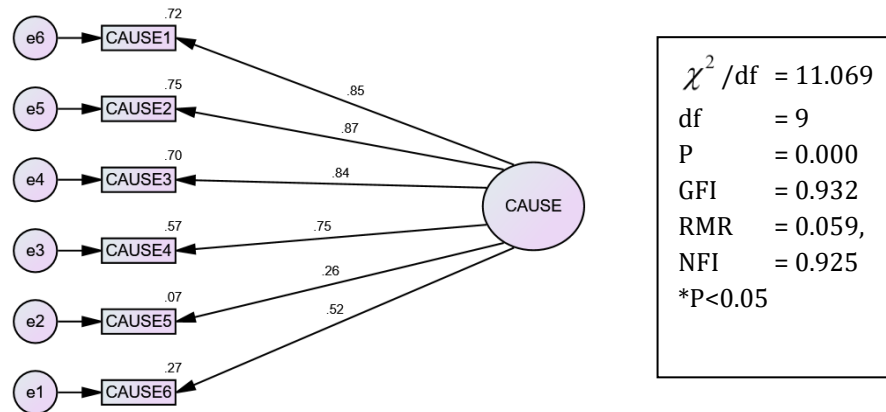


Figure 3: Confirmatory Factor Analysis (CFA) of Elementary Trait Model for Online Food Ordering Model

Figure 3 depicts the CFA of elementary traits in 6 elements. The traits are openness of experiences, consciousness, extraversion, agreeableness, neuroticism, and material needs. Survey results found that all elements are harmonious except the neuroticism aspect (factor loading=0.26). Consciousness (factor loading=0.87), openness to experiences (factor loading=0.85), extraversion (factor loading=0.84), agreeableness (factor loading=0.75), and material needs (factor loading=0.52) have influenced the consumer satisfaction in this industry respectively.

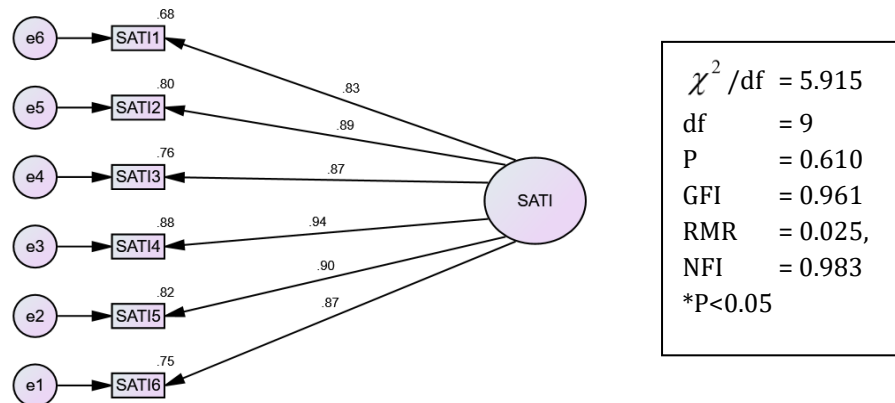


Figure 4: Confirmatory Factor Analysis (CFA) of Consumer Satisfaction for Online Food Ordering Model

From Figure 4, the CFA of buyer behavior in 6 elements are the frequency of online food ordering, the need of online food ordering, the trend to order with more quantity, tendency to order with more quantity, cash payment, and the intention to order food online. Survey results found that there is trend to order online food in greater quantities, a greater amount of money (factor loading=0.93), the willingness to order (factor loading=0.92), the need to order food online (factor loading=0.91), the frequency of ordering (factor loading=0.87), and cash payment (factor loading=0.80).

Table 5: Statistics of 17 Observed Variables

Observed variables	Kolomogorov-Sminov test			
	SK	KU	Stat	P
Elementary traits				
1. Openness to experiences	-0.646	0.630	0.110	.000*
2. Consciousness	-0.729	0.669	0.108	.000*
3. Extroversion	-0.666	0.483	0.102	.000*
4. Agreeableness	-1.183	2.622	0.130	.000*
5. Material needs	-0.367	-0.195	0.083	.000*
Satisfaction				
6. Driver	-0.543	-0.407	0.211	.000*
7. Food order application	-0.685	-0.252	0.236	.000*
8. Payment system	-0.600	-0.311	0.208	.000*
9. Delivery system	-0.705	-0.104	0.222	.000*
10. Variety of food	-0.664	-0.242	0.235	.000*
11. Quality of food	-0.599	-0.195	0.225	.000*
Behavior				
12. Frequency of food online ordering	0.059	-1.382	0.174	.000*
13. Need to order	-0.176	-1.247	0.184	.000*
14. Tendency to order food with greater quantity	-0.381	-1.112	0.184	.000*
15. Tendency to order food with a greater amount of money	-0.196	-1.224	0.187	.000*
16. Cash payment	-0.162	-1.290	0.202	.000*
17. Willingness to order	-0.192	-1.226	0.185	.000*

In Table 5, the statistics of the observed variables can be seen and the research results of the elementary trait, consumer satisfaction, and behavior of online food ordering can be observed. A normal distribution is measured with Skewness and Kurtosis (Hair, 2011), this study is based on criteria at -3 to $+3$.

Table 6: Results of the Relationship between Observed Variables with KMO Index and Bartlette's Test of Sphericity

Statistics of variables	Statistics	
Kaiser-Mefer-Olkin Measure of Sampling Adequacy: KMO	0.940	
Bartlette's test of Sphericity	Approx.Chi-square	7451.733
	df	153
	Sig.	.000

From Table 6, KMO should not be lower than 0.6 and in this study, it is higher than 0.6, i.e., $KMO=0.94$, $Sig=0.00$. It can be concluded that the observed variable is not an identity matrix, and Bartlette's test of Sphericity $Sig. < 0.05$ and KMO is lower than 0.6.

The relationship between observed variable matrices of Pearson Product Moment (PE) analyses the parameter of the personal elementary trait model, satisfaction, and the behavior of online food ordering of the buyer. It consists of the observed variable by using an interval scale and ration scale of about 17 factors as shown in Table 5.

Figure 5 shows the results of the elementary trait, satisfaction, and the behavior of online food ordering in the Bangkok area where P is 0.110, which is greater than 0.05. This model can test these data consistencies with conceptual framework. The determined index of structural equation consideration at or over 0.09 found that $GFI=0.921$, $NFI=0.959$, $RFI=0.950$, $IFI=0.973$, $CFI=0.973$ are consistent with these data. All of these data pass the criteria while the determined index is less than 0.05 of $RMR=0.045$, i.e. it also passes the criteria. It concludes that the elementary trait influences satisfaction, satisfaction influences buyer behavior, and the elementary trait influences buyer behavior.

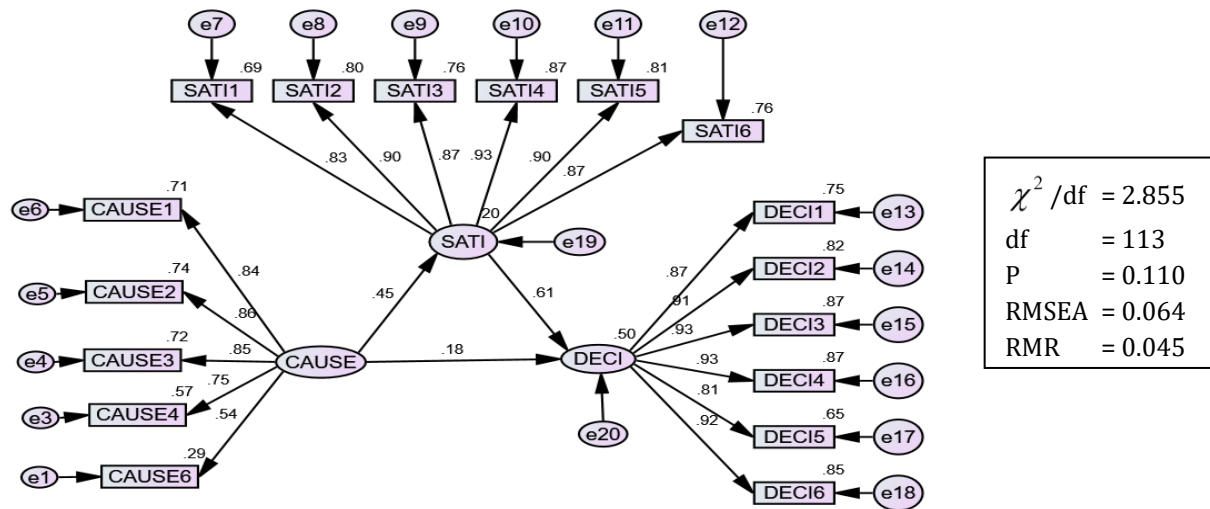


Figure 5: Structure of Elementary Trait, Satisfaction, and Behavior of Online Food Ordering

Table 7: Assessment of Comparable Index between Independent Degrees of Two-Consistency

Index	Value between	Theory	Consistency of criteria	Statistics value
χ^2/df	<3	consistency	under3	2.855
GFI	0to1	consistency	>0.9	0.921
NFI	0to1	consistency	>0.9	0.959
RFI	0to1	consistency	>0.9	0.950
IFI	0to1	consistency	>0.9	0.973
RMR	0to1	consistency	<0.05	0.045

Table 8: Causal Relationship Analysis Results within Personal Trait, Satisfaction through Influencing Online Food Ordering Equational Model in Bangkok Area

Dependent variables	Independent variables			
	Relation	(CAUAE)	(SAT)	(DECI)
Satisfaction (SAT)	direct	0.45*	-	-
	indirect	-	-	-
	total	0.45*	-	-
Decision (DECI)	direct	0.18*	0.61*	-
	indirect	0.28*	-	-
	total	0.46*	0.61*	-

*Significant at 0.05

Table 7 indicates that the analyzed results of GFI, NFI, RFI, IFI, and RMR are consistency of criteria. (Hair et al., 2011). Table 8 shows the analyzed results about the equational model of personal elementary traits, satisfaction through influencing online food ordering equational model in the Bangkok area. The results indicate that personal elementary traits influence satisfaction in online food ordering, consumer satisfaction influences buyer behavior, and elementary trait indirectly influence buyer behavior for ordering food online in the Bangkok area.

5. IMPLICATIONS AND CONCLUSIONS

This study analyzed the causal relationship in influencing the buying behavior of online food ordering in the Bangkok area. It depicts the cues that an online food retailer can specify their website and system to stimulate online food orders. Many group interviews were conducted for identification of the possible external cues of online food ordering on mobile applications. It was observed that six personal elementary traits emerged as indicators of online food buying. Among those traits, the agreeableness trait has the strongest influence on online food buying followed by consciousness, openness to experiences, and material needs, except neuroticism. Moreover, the elementary traits factor has 45% consistency with satisfaction of buyer, and consumer satisfaction has 61% consistency with willing to buy. Also, the quality of food, the variety and

payment system items influence the decision to buy food online. According to the analysis, satisfaction tempts consumers to order more, and personal elementary traits also have 18% influence on buyer behavior.

These satisfaction strategies cover the variety of marketing strategies, promotions, coupons with purchases, free of charge delivery, ease of payment, or idea cues including new menus, a variety of types of food, and discounts. The findings of the study suggest that ordering online food can make different categories of the external stimuli on websites and mobile applications more than others. Consumer insight and consumer behavior play an important role. Data from the questionnaire surveys leads to appropriate marketing strategies with psychological factors, lifestyles, and decision making that lead to buying or rebuying finally.

6. RECOMMENDATIONS AND FURTHER RESEARCH

Sales promotion is a prominent strategy that focuses on quantity and spending money for buying support merchants in impulse buying as well as assist consumers in their ordering decisions that can increase sales. Moreover, website of the stores ought to appeal to consumers through content and food pictures, including food orientation, food description, raw materials, and upcoming new food items or menus. The technical and descriptive comparison of products and others' reviews are also important.

The main responsibility of food entrepreneurs is the development of a system developer. System and mobile application developers increase the visual attraction, emotional appeal, and innovative perspectives. Online food applications which are friendly, convenient, and easy to use make consumers happy, joyful, and enthused to stimulate immediate online buying. Furthermore, understanding the consumer mindset is crucial and includes consumer insight related to traits, which are influenced by online merchants in reviewing selling strategies and consumers' purchase ordering process. In particular, an online marketing strategy aims to increase online sales volume and marketers should analyze potential consumers' behavior and design strategies in respect to the frequency with which they return to reorder from the same restaurant. Specifically, online sellers must consider how to use online monetary sales promotions absolutely for new users and non-monetary promotions with a package-based model, or an individual based model with ordering to enhance their subscription strategy. In order to encourage online impulse buying, entrepreneurs may use strategies like cross selling (stimulating online shoppers to purchase complementary and related products) and up-selling (motivating online shoppers to buy a comparable higher-end product).

Realizing the steep increase in online food buying trend, the present study has explored the critical factors and the principal aim was to assess the consistency theory with these variables. The study aims to focus on a topic which assessed the consumer satisfaction in six dimensions, and the behavior of the buyer in six dimensions. Elementary traits and satisfaction are defined as the main drivers for ordering online food delivery. The research employed a well-established SEM after conducting consistency tests to validate the structural equation.

Furthermore, this study clearly concludes the consumer experiences through a consumer's journey. It features website presentation, friendly order processing, payment method selection, fast delivery system, transportation monitoring with a driver, or even feedback posting in services for peers or influencers. Prominently, the integration approach of these issues in the current study provides a useful and complete guide for online food ordering.

This study revealed that the consumer satisfaction strategy is also an interesting factor to enhance consumer retention and loyalty with frequency as the consumers buy products or service spontaneously with impressed experiences. The results disclose that individual elementary traits understanding has a strong significant relationship with buying behavior as well.

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