MIX: Jurnal Ilmiah Manajemen

Management Scientific Journal
ISSN (Online): 2460-5328, ISSN (Print): 2088-1231
https://publikasi.mercubuana.ac.id/index.php/jurnal_Mix

Exploring Frugal Buying, Social Influence, and App Behavior in Online Food Shopping in Indonesia

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ABSTRACT

Objectives: *This quantitative study investigates the relationships among Frugal Buying Habits, Social Influence, Task-oriented app usage, Pleasure-oriented app usage, and Digital persuasion in the context of online food shopping via delivery apps in Indonesia.*
Methodology: *We employ an explanatory research design, testing hypotheses derived from existing literature. A purposive sampling method selects 300 active users of online food delivery apps. Structural Equation Modeling (SEM) with Smart PLS software analyzes the data.*
Findings: *Frugal Buying Habits are associated with both Task-oriented and Pleasure-oriented app usage. Social Influence strongly impacts Digital Persuasion. Task-oriented app usage positively correlates with Digital Persuasion while Pleasure-oriented app usage does not.*
Conclusion: *These findings highlight opportunities for app developers to cater to frugal consumers and leverage social influence, improving user experiences. Policymakers should consider regulating digital persuasion tactics for ethical practices. This research contributes to understanding online food shopping dynamics.*

Keywords: *Frugal Buying Habits; Social Influence; Task-oriented app usage; Pleasure-oriented app usage; Digital persuasion.*

Submitted:	Revised:	Accepted:
2023-09-21	2023-10-14	2023-10-18

Article Doi:
http://dx.doi.org/10.22441/jurnal_mix.2023.v13i3.007

p-ISSN: 2088-1231
e-ISSN: 2460-5328

INTRODUCTION

The digital landscape is undergoing significant growth on a global scale with Indonesia emerging as a key player in the Asian continent. With a population of 277.7 million and 204.7 million active internet users, Indonesia is poised for substantial digital economic growth (Datareportal, 2022). The proliferation of mobile phone users, indicated by the presence of 370.1 million cellular mobile connections in Indonesia in early 2022, reflects an upward trajectory in mobile application usage (Datareportal, 2022). In the context of online food shopping, the evolution of "shared-economy delivery models" has given rise to popular online food delivery platforms (Gunden et al., 2020). Platforms like Uber Eats, FavorDelivery, or DoorDash have revolutionized the way consumers interact with restaurants, providing a seamless experience for browsing, selecting, ordering, and receiving food orders (DoorDash, 2018). This trend has extended its influence to Southeast Asian countries, including Indonesia where several companies have introduced online food delivery platforms that offer convenience and security for ordering food and beverages without the need to leave one's home.

The Gross Merchandise Value (GMV) in the online food delivery market in Southeast Asia is projected to reach $49.7 billion by 2030. Key players like GrabFood, Foodpanda, and Go-Food collectively contributed to 84.8% of the market share in 2021 with GrabFood leading at 47.8% (Techinasia, 2022). Venture capital company 'Momentum Works' reported a remarkable 24.3% growth in Indonesia's food delivery services market share in 2021, solidifying its position as the largest food delivery market in Southeast Asia (Jakarta-Post, 2022). This growth was influenced by social restriction policies and the widespread adoption of work-from-home practices across various business sectors.

According to Statista (2021), Go-Food (Go-Jek) held the top spot in the online food delivery industry in Indonesia with a 25% usage share, closely followed by GrabFood with 20%. Other notable players included Yum Brands (KFC, Pizza Hut, Taco Bell) at 15%, Zomato at 10%, Domino Pizza and McDelivery (McDonald's) each at 5%, and various other online food delivery platforms at 15%. Notably, the dominant players were super-applications that offered diverse online services within a single app, reflecting the increasing competition with the emergence of new entrants like TravelokaEats, ShopeeFood, AirAsia Food, and others.

In this fiercely competitive online food delivery industry, companies must continually innovate and harness technology for sustainable growth. A crucial element in this endeavor is the strategic use of "persuasion" to expand user bases, ultimately driving transaction volume. "Persuasion" involves intentionally altering individual attitudes (Petty & Cacioppo, 1986) and behavior (Fogg, 2003), making it a vital concept in marketing and consumer psychology. While extensively studied in general marketing literature (Cyr et al., 2018), its application in the hospitality sector remained relatively unexplored (Bavik, 2016). For online food delivery platforms and restaurants within these systems to flourish, "persuasion" may hold the key to

p-ISSN: 2088-1231
e-ISSN: 2460-5328

aligning consumer goals with marketers' objectives (Gunden et al., 2020). Notably, literature or research related to "persuasion" in the context of food and beverage delivery services, particularly in Southeast Asia and Indonesia as a developing country, is limited, highlighting a critical research gap that warrants immediate attention.

Drawing inspiration from Fogg's theory of "persuasion" (2003) regarding persuasive information in information systems, this research aims to construct a conceptual framework that elucidates the interplay between consumers and persuasive information disseminated online, leading to consumer persuasion. Specifically, this study focuses on two primary predictors, namely task-oriented mobile app usage and pleasure-oriented app usage which exert a significant influence on consumer persuasion (Fogg, 2003). However, our study specifically delves into the realm of online food delivery applications, emphasizing their use on smartphones or mobile-based platforms. Interaction transpires as consumers engage with online food delivery applications and consume persuasive content presented within these applications.

Previous studies conducted outside Southeast Asia have identified critical predictors influencing consumer persuasion. Gunden et al. (2020) empirically demonstrated that social influence and hedonic browsing strongly impact consumer persuasion, whereas utilitarian browsing exhibited no significant effect. Importantly, the utilitarian and hedonic facets were found to be substantially influenced by consumers' "frugal buying habits." These habits reflect consumers' beliefs that utilizing an online food delivery application can lead to cost savings by locating the best value deals from merchants on the platform. This dimension gains significance in Indonesia where online consumers are known for their price sensitivity (Handayani et al., 2020). Research by Handayani et al. (2020) revealed that the majority of respondents preferred online grocery shopping due to perceived cost savings. Additionally, the study underscored the meticulous price comparison habits of Indonesian consumers. From a business standpoint, pricing strategies, such as discounts and rebates, play a pivotal role in influencing consumer decisions in the online food and beverage domain. The restaurant industry, characterized by robust price fragmentation, underscores the importance of price-saving objectives in consumer food choices (Kotler et al., 2016).

Furthermore, social influence emerges as a key driver of online shopping behavior. Consumers often place greater trust in recommendations from family and close friends than in brand endorsements (Kotler et al., 2017). As life's pace accelerates, information spreads rapidly and attention spans shrink, consumers increasingly rely on their social networks for guidance. They actively connect, seek brand-related advice, and endorse products to their peers (Kotler, Kartajaya, et al., 2021). When purchasing goods, consumers leverage opinions and endorsements from friends and family work as credible sources of information, particularly for search-quality goods. In contrast, when engaging in services, consumers turn to online review platforms, direct communication with friends and family, and social media for guidance

p-ISSN: 2088-1231
e-ISSN: 2460-5328

(Zeithaml et al., 2021). While social influence has been explored in the context of hotel information systems (Morosan & DeFranco, 2016), its role in shaping behavior related to online food delivery systems remains underexplored, especially within the Southeast Asian context. Gunden et al. (2020) gave substantial attention to this predictor and successfully demonstrated that social influence strongly predicts consumer persuasion, as consumers rely on recommendations from close contacts to embrace online food delivery applications for ordering food and beverages.

In light of the aforementioned data and descriptions, this study primarily seeks to elucidate consumer persuasion within the framework of online food delivery applications in Indonesia, a nation boasting the highest digital economy potential in Southeast Asia. Specifically, this research investigates and dissects the key determinants or influencers of Indonesian online consumer behavior. Various consumer motivations underpin the use of online food delivery platforms, including the appeal of minimal wait times, a vast selection of food and beverage offerings, and the essential nature of food products. Therefore, understanding how consumers make decisions in the online food delivery environment becomes paramount. Consumer decision-making in this context exhibits unique characteristics, driven by motivational states (Gunden et al., 2020). This study also endeavors to analyze motivations that are posited to influence consumer persuasion, whereby the information accessible through online food delivery applications and the usage of these applications motivate consumers to alter their choices, experiment with new products or services, and shift away from traditional telephone-based food and beverage ordering methods.

Several key research gaps are evident in the context of online food shopping via delivery applications. Firstly, there's a need for more research on "digital persuasion" within Southeast Asia, particularly in Indonesia, to explore its dynamics in a unique cultural and economic environment. Second, understanding the specific influence of "pleasure-oriented app usage" on digital persuasion remains underexplored, necessitating further investigation into hedonic browsing behaviors. "Frugal buying habits" require a more nuanced examination of their impact on consumer decision-making in the Indonesian online food delivery sector. The role of "social influence" in the Southeast Asian context warrants further exploration. Additionally, ethical considerations surrounding digital persuasion tactics within online food delivery apps are an essential avenue for research. Finally, optimizing user experiences to cater to diverse consumer motivations and assessing the impact of digital persuasion tactics on consumer well-being provide valuable research opportunities for the industry and policymakers. Addressing these gaps will enhance our understanding of the intricacies of online food shopping in Southeast Asian markets.

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LITERATURE REVIEW

Frugal Buying Habits

In the digital era, consumers have become well-informed, leveraging the internet to compare product prices which extends beyond monetary considerations to include time and effort (Kotler, Pfoertsch, et al., 2021). Frugal buying habits, a key driver of online purchases, involve seeking economic benefits (Escobar-Rodríguez & Carvajal-Trujillo, 2014). This concept is integral to consumers' ability to compare online product prices (Punj, 2012).

In this study, we define frugal buying habits as consumers' efforts to find the best prices and offers on online food delivery service applications. This concept has been explored in various information systems contexts, including online food delivery services (Escobar-Rodr'iguez & Carvajal-Trujillo, 2014; Gunden et al., 2020). Our research extends the application of frugal buying habits to mobile application users while offering fresh insights.

Consumers use online food delivery platforms to compare products based on price and other attributes, driving them to make purchases when favorable prices are available (Ollila, 2011). Frugal buying habits emerge when consumers can achieve monetary savings through price comparisons on these platforms (Escobar-Rodríguez & Carvajal-Trujillo, 2013). This significantly influences consumers' search behavior when using online food delivery apps.

To gather the information needed, consumers intensify their search efforts on these platforms, leading to task-oriented and pleasure-oriented mobile app usage. These two usage motivations are characterized by aspects such as product information availability, price comparisons, efficiency (task-oriented), and enjoyment (pleasure-oriented) (Bilgihan et al., 2015; Park et al., 2012).

Digital persuasion is a concept rooted in consumer psychology and marketing, involving the intentional alteration of individual attitudes and behavior through digital channels (Fogg, 2003). It plays a vital role in the marketing and consumer psychology domains. While extensively studied in the general marketing literature (Cyr et al., 2018), its application in the context of online food and beverage delivery services, particularly in Southeast Asia and Indonesia as a developing country is limited, highlighting a critical research gap that warrants immediate attention.

In the context of online food shopping in Indonesia, Hartono et al. (2023) explore customer engagement through live-streaming commerce. This research is crucial for understanding the dynamics of frugal buying, the influence of social interactions, and the behavior of consumers using shopping apps. Live streaming commerce, as investigated by Hartono et al. (2023), offers a unique opportunity for online food retailers to enhance customer engagement and build trust,

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e-ISSN: 2460-5328

as it allows customers to see products in real time, seek clarification, and interact with sellers, thereby influencing their buying decisions."

In a study conducted by Kusmaharani and Halim (2020) on the online impulse buying of Indonesian indie cosmetic products, it was found that online reviews and peer influence play a significant role in stimulating impulse buying behavior. The research highlighted how the hedonic value of online reviews influences browsing behavior, while the strength of ties with peers and identification with peer groups encourages peer communication, ultimately leading to the urge to buy impulsively and, subsequently, impulse buying behavior.

Previous research has shown that persuasive information presented digitally can influence consumer behavior (Fogg, 2003). In the context of online food delivery services, digital persuasion may involve various tactics, such as personalized recommendations, user reviews and ratings, limited-time offers, and social proof through user-generated content. These persuasive elements aim to encourage users to make purchasing decisions and engage with the platform.

Based on the above descriptions, the following hypotheses are proposed:

Hypothesis 1 (H1): *Frugal Buying Habits have a positive effect on task-oriented mobile app usage.*

Hypothesis 2 (H2): *Frugal Buying Habits have a positive effect on pleasure-oriented mobile app usage.*

Hypothesis 3 (H3): *Frugal Buying Habits have a positive effect on Digital Persuasion*.

Task-Oriented & Pleasure-Oriented App Usage

Browsing is the initial step in online shopping, motivating consumers to gather information and make informed decisions, encompassing price and quality comparisons (Park et al., 2012).

Research has explored two types of browsing: task-oriented mobile app usage and pleasure-oriented app usage, both relevant to impulsive buying behavior (Rezaei et al., 2016) and illuminating consumers' shopping experiences (Zheng et al., 2019).

Task-oriented mobile app usage prioritizes user-friendliness and efficient navigation, focusing on completing specific tasks (Bilgihan et al., 2015). This browsing aligns with consumers' basic needs during their searches, such as product information, price comparisons, and time efficiency. Task-oriented usage has been validated as a precursor to various online shopping behaviors (Gunden et al., 2020).

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e-ISSN: 2460-5328

In contrast, pleasure-oriented app usage emphasizes enjoyment and emotional experiences during online shopping (Park et al., 2012). It includes hedonically motivated interactions with information systems (Gunden et al., 2020), crucial in the hospitality and tourism industry, and now in online food delivery. Mobile apps use elements like gamification and appealing visuals to create pleasurable experiences for users.

Based on the above descriptions, this study proposes the following two hypotheses:

Hypothesis 4 (H4): *Task-oriented mobile app usage positively influences digital persuasion.*

Hypothesis 5 (H5): *Pleasure-oriented app usage positively influences digital persuasion.*

Social Influence

Social influence is a key concept, defined as the impact of one's social circle on their behavior (Gunden et al., 2020). It plays a pivotal role in information system adoption theory (Venkatesh et al., 2012). In our study, consumers' choices regarding online food delivery apps are significantly influenced by the preferences and recommendations of friends, family, or colleagues.

The research by Rachbini underscores that social support, encompassing emotional and informational assistance, significantly enhances three crucial dimensions of relationship quality: commitment, satisfaction, and trust. These findings are in line with prior studies that highlight the positive impact of social support on consumer loyalty (Rachbini, 2017, p. 341).

Consumers often use online food delivery services in social settings, recreating the dining experience at home or work, often with a company. These services allow consumers to evaluate multiple restaurants and food items through a rating system, emphasizing their pursuit of value, competitive prices, and other benefits. This often leads to brand loyalty and enthusiastic recommendations to others (Rachbini et al., 2020).

Technology is a powerful tool for behavior modification, fostering digital activism and social change (Kotler, Pfoertsch, et al., 2021). Consumers frequently share their purchasing experiences with friends or post reviews online. The evaluations of fellow consumers, such as star ratings and reviews, can influence consumer choices and persuasion, particularly in the context of online food delivery (Gunden et al., 2020).

Based on the aforementioned research and explanations, we propose the following hypothesis:

Hypothesis 6 (H6): *Social Influence positively impacts digital persuasion*.

Digital Persuasion

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The process of digital persuasion, especially in the context of online food shopping, is a dynamic and multifaceted phenomenon that has garnered significant attention in recent literature. Various theoretical perspectives emphasize the pivotal role of persuasive information in shaping consumer behavior and attitudes. Researchers concur that well-crafted persuasive content can effectively influence individuals, particularly in situations where direct interpersonal persuasion is absent (Gunden et al., 2020).

One compelling facet of digital persuasion is the exploration of indirect persuasion techniques. Gamliel & Herstein (2012) demonstrated the efficacy of indirect persuasion, wherein consumers are subjected to subtle and often subconscious persuasive efforts. Techniques such as framing and the foot-in-the-door method have been found to subtly influence consumer choices. Additionally, recent insights have shed light on self-persuasion, a concept in which consumers rely on self-generated information to alter their attitudes and decisions (Bernritter et al., 2017).

Santy & Iffan's (2023) study in Indonesia investigated how artificial intelligence and gamification influence online purchase intention among marketplace users, emphasizing the importance of digital personalization. Their findings show that artificial intelligence and gamification impact customer experience, which, in turn, affects online purchase intention. This study adds valuable insights to the e-commerce landscape.

In a 2022 study in Indonesia Nurjannah et al. (2022), examined E-CRM, customer experience, and their relationship with customer loyalty. Their research revealed that customer experience doesn't directly affect satisfaction or loyalty. Instead, customer satisfaction acts as a mediator between E-CRM and customer loyalty, highlighting the role of E-CRM and satisfaction in building and maintaining customer loyalty in e-commerce.

Measuring digital persuasion encompasses a diverse array of approaches, with studies employing various methods to assess its impact. However, the precision offered by behavioral measures has gained prominence in recent research. Behavioral measures are particularly adept at evaluating persuasion outcomes (Gunden et al., 2020). These outcomes typically relate to crucial dimensions such as purchase intention (Janssen et al., 2016), purchase choices (Hornik et al., 2017), and even tipping behavior (Bernritter et al., 2017). In line with this literature, our study seeks to operationalize digital persuasion by examining changes in online consumers' choices as a consequence of interactions with information embedded in online food delivery service applications.

Fogg (2003) introduced the concept of guided persuasion within the framework of online food delivery systems. He postulated that these systems guide consumers through sequential purchasing processes which can yield guided persuasion. By offering various product customizations and adjustments, online food delivery systems enhance the relevance of end

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e-ISSN: 2460-5328

products, ultimately persuading consumers to make specific choices. In our study, digital persuasion encompasses the experiences of consumers using online food delivery service applications. Interactions with the wealth of information available within these applications motivate consumers to alter their preferences, experiment with new products or services, and reduce their reliance on other methods such as telephone orders and dine-in services.

To provide a clear visual representation of the key concepts discussed in the literature review, we present Figure 1 which outlines the conceptual framework for this study. This framework is designed to elucidate the relationships between various variables that have been identified as crucial in understanding consumer behavior in the context of online food shopping and digital persuasion.

As depicted in Figure 1, the central concept is "Frugal Buying Habits," which plays a pivotal role in influencing both "Task-oriented Mobile App Usage" and "Pleasure-oriented App Usage." These mobile app usage patterns, in turn, impact "Digital Persuasion." Additionally, "Social Influence" is shown as an external factor that influences "Digital Persuasion." This framework serves as a foundational guide for our hypotheses and subsequent analysis, allowing us to explore the interplay between these factors and their impact on consumer behavior and digital persuasion.

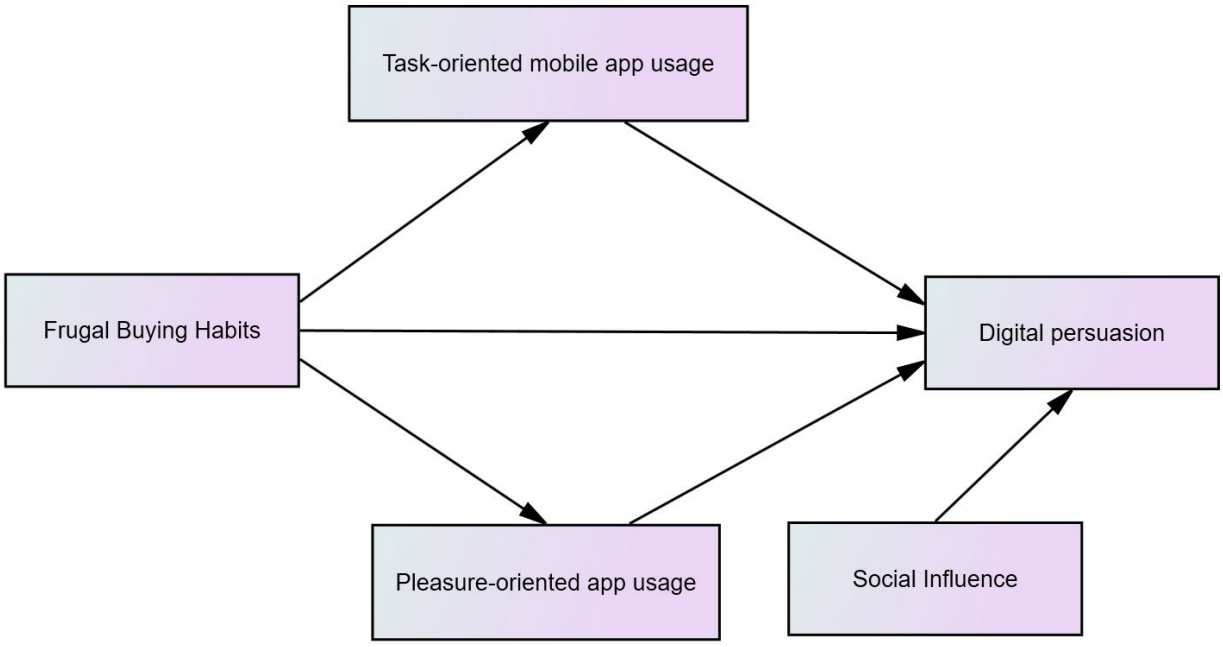

Figure 1: Conceptual Framework

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e-ISSN: 2460-5328

METHODOLOGY

The research in this study primarily follows a quantitative-based research approach. This approach aims to employ numerical data and statistical analysis to investigate the relationships and patterns among variables (Frugal Buying Habits, Social Influence, Task-oriented mobile app usage, Pleasure-oriented app usage, and Digital persuasion).

The research design utilized in this study is explanatory research. Explanatory research is chosen to test the proposed hypotheses which have been formulated based on existing literature and insights from prior studies. Additionally, this research design seeks to explore and explain the correlations and influences among the research variables, shedding light on the patterns, directions, and strengths of these relationships (Leedy. Ormrod, 2005).

Sampling in this study adopts a non-probability sampling method. This method is chosen for its ability to provide reliable insights that closely align with the research population. The sampling design further employs a purposive sampling approach where respondents are selected based on specific criteria established by the researcher. Among these criteria, participants are required to be active users of online food delivery service applications who have made purchases of food or beverages through these applications.

To gather data, the study utilizes Google Forms for distributing online questionnaires. Data collection spans from April 2023 to June 2023, allowing for a comprehensive pool of responses from eligible participants. The research employs the Structural Equation Model (SEM) technique, facilitated by Smart PLS software for data analysis. SEM is chosen due to its suitability for analyzing complex models with multiple constructs. This study involves a sample of 300 respondents. Generally, Structural Equation Modeling (SEM) necessitates a minimum sample size of 150 respondents for models containing up to seven constructs (Hair et al., 2019). The number of respondents obtained for this study meets this requirement.

The sample of 300 respondents for this study was obtained from the population of individuals who use online food delivery applications in Indonesia. Data was collected through Google Forms with the online questionnaires being distributed via various social media platforms. The use of social media allowed us to reach a diverse group of participants who met the criteria of active users of online food delivery apps in Indonesia. This approach facilitated a comprehensive and representative sample for our research, ensuring that the data collected accurately reflects the population of interest.

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e-ISSN: 2460-5328

Research Questionnaire

The study employs a set of indicators to measure each variable effectively. These indicators have been drawn from prior studies that have empirically tested and demonstrated their validity and reliability. Specifically, the Frugal Buying Habits variable is measured using indicators adopted from the research of Escobar-Rodríguez & Carvajal-Trujillo (2013) and Gunden et al. (2020). The Task-oriented mobile app usage and Pleasure-oriented app usage variables are derived from the study conducted by Park et al. (2012). The Social Influence variable is adopted from previous research by Venkatesh et al. (2012). Finally, for the Digital persuasion variable, the researcher refers to the studies of Gunden et al. (2020) and Atwood and Morosan (2015) to select appropriate indicators. The questionnaire statement items corresponding to each variable can be found in Table 1.

RESULTS AND DISCUSSION

Descriptive Statistics

The survey data reveals valuable insights into the demographic and behavioral profiles of the 300 participants. In terms of gender distribution, the study included 108 male participants, constituting 36.0% of the sample, while the remaining 192 participants were female, accounting for 64.0%. When examining the age groups of the respondents, a substantial portion, comprising 54.3%, falls below the age of 20. Additionally, 33.0% fall within the age bracket of 20 to 39 years, while 10.3% are aged between 40 and 54, and a smaller fraction of 2.3% are aged over 54 years. In regards to education, 46.3% have completed high school, 33.3% possess a diploma or bachelor's degree, 11.7% have pursued master's or doctorate degrees, and 8.7% hold other educational qualifications.

When it comes to the residential region of the participants, a significant majority, constituting 83.3%, reside in the Jakarta, Bogor, Depok, Tangerang, and Bekasi (JABODETABEK) areas, reflecting the urban concentration of the sample. Other regions include West Java/Banten, Jawa Tengah/DIY (Central Java/Yogyakarta), Jawa Timur (East Java), Kalimantan, Maluku, Papua, Sulawesi, and Sumatra.

Furthermore, the data sheds light on the income distribution of the participants, with 57.0% indicating that they do not currently have personal income. Among those with income, 19.0% report earnings of less than or equal to 5 million IDR, 12.7% earn between 5 million and 15 million IDR, 7.7% earn between 15 million and 25 million IDR, and 3.7% earn more than 25 million IDR per month. These findings provide a comprehensive overview of the study's participant demographics, setting the stage for further analysis of their online food delivery behaviors and preferences.

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Validity and Reliability Test

The research constructs were rigorously evaluated for both validity and reliability using a range of indicators and statistical measures. The outcomes affirm the adequacy of the constructs, encompassing Frugal Buying Habits, Task-oriented mobile app usage, Pleasure-oriented app usage, Social Influence, and Digital persuasion, in terms of their validity and reliability. Notably, the loading factors for all indicators are notably high, signifying their strong alignment with their respective constructs. Furthermore, the composite reliability (CR) values for each construct surpass the recommended threshold of 0.7, signifying robust internal consistency. Additionally, the average variance extracted (AVE) values which gauge convergent validity, exceed the acceptable threshold of 0.5, indicating that these constructs effectively account for the variance in their respective indicators. These findings collectively underscore the reliability and validity of the measurement model, instilling confidence in the data collection process and affirming the suitability of the constructs for subsequent structural analysis. The assessment was conducted using a five-point Likert-type scale, encompassing responses ranging from "Strongly disagree" (1) to "Strongly agree" (5), aligning with established research standards.

Hypothesis testing

The purpose of presenting a diagram is to provide an overview of the relationship between variables clearly and concisely. It allows the reader to visualize the relationship and understand the nature of the relationship between variables. Figure 2 is presented to illustrate the relationship between variables.

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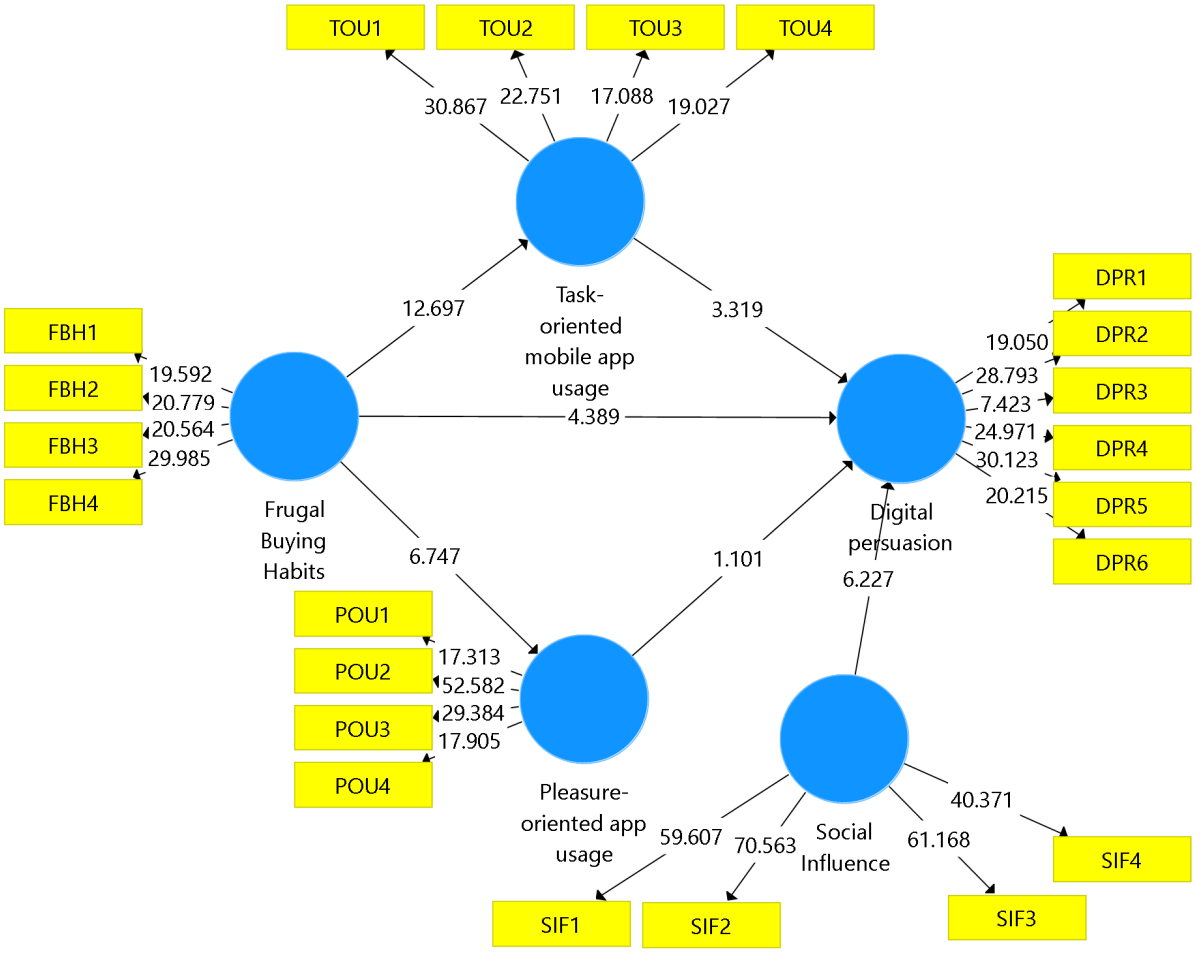

Figure 2 The relationship between variables

Table 1 below shows the results of hypothesis testing for the path coefficients between constructs in the research model. The null hypothesis for each test is that there is no significant relationship between the two constructs, and the alternative hypothesis is that there is a significant relationship.

Table 1. Path CoefficientsMean, STDEV, T-Values, P-Values

	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Decision
Frugal Buying Habits -> Digital persuasion	0.247	0.056	4.389	0.000	Accepted

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Frugal Buying Habits -> Pleasure-oriented app usage	0.345	0.051	6.747	0.000	Accepted
Frugal Buying Habits -> Task-oriented mobile app usage	0.595	0.047	12.697	0.000	Accepted
Pleasure-oriented app usage -> Digital persuasion	-0.064	0.058	1.101	0.272	Rejected
Social Influence -> Digital persuasion	0.349	0.056	6.227	0.000	Accepted
Task-oriented mobile app usage -> Digital persuasion	0.212	0.064	3.319	0.001	Accepted

Hypotheses testing was conducted to assess the relationships between the variables in the study and the results are summarized in the following paragraph. Path coefficients, mean values, standard deviations (STDEV), t-statistics, and p-values were examined to determine the significance of these relationships.

First, the path from Frugal Buying Habits to Digital Persuasion yielded a path coefficient of 0.247. When compared to the sample mean (M) of 0.244, the standard deviation (STDEV) of 0.056, and the calculated t-statistic of 4.389, it resulted in a remarkably low p-value of 0.000, indicating a statistically significant positive relationship.

Next, the path from Frugal Buying Habits to Pleasure-oriented app usage demonstrated a path coefficient of 0.345. In comparison to the sample mean (M) of 0.348 and the standard deviation (STDEV) of 0.051, the associated t-statistic of 6.747 generated an exceedingly low p-value of 0.000, signifying a statistically significant positive relationship.

The path from Frugal Buying Habits to Task-oriented mobile app usage revealed a path coefficient of 0.595- which was notably higher than the sample mean (M) of 0.600 and the standard deviation (STDEV) of 0.047. The resulting t-statistic of 12.697 produced an extremely low p-value of 0.000, indicating a highly statistically significant positive relationship.

Conversely, the path from Pleasure-oriented app usage to Digital persuasion exhibited a path coefficient of -0.064. Despite a slight deviation from the sample mean (M) of -0.062, the relatively low standard deviation (STDEV) of 0.058 and the resulting t-statistic of 1.101 led to a p-value of 0.272, indicating a lack of statistical significance in this relationship.

Moving on, the path from Social Influence to Digital persuasion yielded a path coefficient of 0.349, exceeding the sample mean (M) of 0.352 and the standard deviation (STDEV) of 0.056. The corresponding t-statistic of 6.227 resulted in a notably low p-value of 0.000, signifying a statistically significant positive relationship.

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Finally, the path from Task-oriented mobile app usage to Digital persuasion showed a path coefficient of 0.212 which was slightly lower than the sample mean (M) of 0.214. With a standard deviation (STDEV) of 0.064, the calculated t-statistic of 3.319 led to a p-value of 0.001, indicating a statistically significant positive relationship.

In summary, the hypotheses testing results confirmed significant positive relationships between Frugal Buying Habits and Digital persuasion, Frugal Buying Habits and Pleasure-oriented app usage, Frugal Buying Habits and Task-oriented mobile app usage, Social Influence and Digital persuasion, as well as Task-oriented mobile app usage and Digital persuasion. However, no statistically significant relationship was observed between Pleasure-oriented app usage and Digital persuasion. These findings provide valuable insights into the interplay of these variables within the context of online food delivery applications.

Based on the Table 1 above, here are the structural equations:

1. Digital Persuasion (DPR) = 0.247*FBH + 0.349*SIF + 0.212*TOU - 0.064*POU + ε

2. Pleasure-oriented App Usage (POU) = 0.345*FBH + ε

3. Task-oriented Mobile App Usage (TOU) = 0.595*FBH + ε

The findings of the study provide significant insights into the relationships between various factors within the context of online food delivery applications. The analysis revealed a statistically significant positive relationship between Frugal Buying Habits and Digital persuasion. This suggests that individuals who exhibit frugal buying habits, such as seeking cost-effective deals and comparing prices from various restaurants/merchants within the online food delivery application are more likely to be influenced and persuaded by the digital information available in the app.

Another noteworthy finding is the statistically significant positive relationship between Frugal Buying Habits and Pleasure-oriented app usage. This indicates that individuals with frugal buying habits also tend to derive pleasure from using online food delivery applications. They may enjoy searching for cost-effective deals and exploring various restaurant options within the app, contributing to a pleasurable experience.

The study uncovered a highly significant positive relationship between Frugal Buying Habits and Task-oriented mobile app usage. This implies that individuals who prioritize cost-saving measures and efficient shopping behaviors are more likely to utilize the app in a task-oriented manner. They may actively seek information, compare prices, and make efficient choices when ordering food and beverages.

Surprisingly, no statistically significant relationship was found between Pleasure-oriented app usage and Digital persuasion. This suggests that while some users may derive pleasure from

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using the app, this pleasure does not necessarily translate into being strongly persuaded by the digital information available within the application when making food choices.

The study established a significant positive relationship between Social Influence and Digital persuasion. This highlights the impact of social factors, such as the opinions and recommendations of important individuals in one's life, in influencing and persuading users when using online food delivery applications. Friends and family influence plays a significant role in decision-making.

Lastly, a significant positive relationship was identified between Task-oriented mobile app usage and Digital persuasion. Users who approach the app with a task-oriented mindset, focusing on efficient and practical aspects of food ordering, are more likely to be persuaded by the digital information and content available within the application.

Given the positive relationship between Frugal Buying Habits and Digital persuasion, policymakers and app developers should consider strategies to encourage and support frugal behaviors within online food delivery applications. This can be achieved by highlighting cost-saving options, providing clear price comparisons, and offering discounts or promotions, as previous research has indicated the significance of price-related factors in online consumer behavior (Escobar-Rodríguez & Carvajal-Trujillo, 2014).

Recognizing the impact of Social Influence on Digital persuasion, policymakers, and businesses can focus on leveraging the social aspect of app usage. Encouraging users to share their experiences, reviews, and recommendations with friends and family within the app can enhance persuasive elements. This aligns with the findings that social influence plays a crucial role in shaping consumer choices (Venkatesh et al., 2012).

As Task-Oriented Mobile App Usage positively influences Digital persuasion, app developers should prioritize a user-friendly and efficient interface. This involves streamlining the app's navigation, ensuring easy access to relevant information, and facilitating quick and hassle-free ordering processes. Research supports the idea that utilitarian features influence online consumer behavior (Bilgihan et al., 2015).

While no significant relationship was found between Pleasure-Oriented App Usage and Digital persuasion, businesses can still enhance the overall user experience by incorporating pleasurable elements, such as gamification, appealing visuals, and interactive content. These features can contribute to user satisfaction and engagement, even if they don't directly impact persuasion (Ozturk et al., 2016). To refine app features and content, continuous monitoring of user behavior and feedback collection is crucial. This aligns with previous research emphasizing the importance of user feedback in improving online platforms (Atwood & Morosan, 2015).

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By implementing these policy and practice implications, businesses and policymakers can enhance the persuasive capabilities of online food delivery applications, ultimately influencing users' food choices and promoting efficient and cost-effective consumption.

The novelty of this research lies in its investigation of the interplay between Frugal Buying Habits, Social Influence, App Behavior (Task-oriented and Pleasure-oriented mobile app usage), and Digital Persuasion within the context of online food shopping through online food delivery applications. While previous studies have explored various aspects of online consumer behavior and the factors influencing it, this research contributes novelty through several key aspects.

The study narrows its focus to the unique context of online food delivery applications. While previous research has addressed online shopping behavior in general, this research delves into the specifics of online food shopping, which involves distinct user motivations and behaviors.

The research integrates and examines multiple variables, including Frugal Buying Habits, Social Influence, Task-oriented, and Pleasure-oriented app usage, and Digital Persuasion. By considering these factors simultaneously, the study provides a comprehensive understanding of how they interact and influence each other within the online food shopping environment. The study investigates the role of Digital Persuasion within the online food delivery app context. Understanding how digital platforms persuade users to make specific choices regarding food orders is a relatively novel area of research, particularly when combined with other influential factors.

The research not only contributes to theoretical knowledge but also offers practical implications for app developers and policymakers. It suggests strategies for enhancing user experience and persuasion within these apps, which can have a tangible impact on the food delivery industry. The study encompasses respondents from various geographic locations within Indonesia, providing insights into how online food shopping behaviors may vary across regions. This adds a dimension of regional diversity that has not been extensively explored in previous research.

Several limitations should be acknowledged in this study. Firstly, the research employed a non-probability sampling method, specifically purposive sampling, to target active users of online food delivery apps. While this approach was chosen to capture insights from individuals familiar with the subject matter, it unintentionally excluded individuals who either do not use these apps or use them infrequently. This sampling bias could limit the generalizability of the study's findings to a more diverse population of online consumers.

Secondly, the study examined Digital Persuasion as a singular construct without delving into the specific mechanisms and strategies used for digital persuasion within online food delivery applications. A more detailed analysis of the tactics and content employed for persuasion could

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provide a more nuanced understanding of this critical aspect of the online food shopping experience.

Lastly, the research assumed unidirectional relationships between variables, treating them as independent influences on each other. However, it is essential to acknowledge the potential for endogeneity, which implies reciprocal influences among these variables. Future studies could benefit from employing advanced statistical techniques to explore and address potential endogeneity issues, offering a more comprehensive and accurate analysis of the complex interplay among Frugal Buying Habits, Social Influence, App Behavior, and Digital Persuasion within the context of online food shopping.

CONCLUSION

In conclusion, this study has explored the intricate nexus of Frugal Buying Habits, Social Influence, App Behavior (Task-oriented and Pleasure-oriented mobile app usage), and Digital Persuasion in the context of online food shopping through online food delivery applications. Through comprehensive data analysis and hypothesis testing, several key findings and insights have emerged.

Firstly, it was evident that Frugal Buying Habits significantly influence Task-oriented mobile app usage and Pleasure-oriented app usage. Consumers who tend towards frugality are more likely to engage in both utilitarian and hedonic browsing behaviors when using online food delivery apps. This suggests that users seek both cost-saving deals and pleasurable experiences when making food orders through these platforms.

Secondly, Social Influence was found to exert a substantial impact on Digital Persuasion. Individuals who are influenced by important people in their lives, such as family and friends, are more susceptible to digital persuasion tactics employed by online food delivery apps. This implies that recommendations and opinions from close circles play a crucial role in shaping consumer choices within this context.

Thirdly, Task-oriented mobile app usage was positively associated with Digital Persuasion. Users who primarily engage in utilitarian browsing behaviors are more likely to be persuaded by the information and features provided by these apps. This suggests that app developers can enhance persuasion strategies to target task-oriented users effectively.

However, Pleasure-oriented app usage did not demonstrate a significant direct impact on Digital Persuasion, indicating that hedonic browsing behaviors may not directly influence persuasion within this context.

These findings have important implications for both the online food delivery industry and policymakers. App developers can tailor their platforms to align with the preferences and

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behaviors of frugal consumers, recognizing the influence of social networks and the importance of effective persuasion strategies. Policymakers can also consider the potential regulatory aspects of digital persuasion tactics within such apps to ensure ethical and transparent practices.

This research sheds light on the complex dynamics of online food shopping through online delivery applications. It highlights the role of frugality, social influence, and utilitarian app usage in shaping consumer behaviors and provides valuable insights for industry stakeholders to optimize user experiences and persuasion strategies. As the online food shopping landscape continues to evolve, understanding these factors becomes increasingly critical for both business success and consumer well-being.

The research findings presented in this study offer significant managerial implications for stakeholders in the online food delivery industry and policymakers:

- ✓ Tailoring App Development: App developers should recognize the importance of catering to frugal consumers. Understanding that users seek cost-saving deals and pleasurable experiences can guide developers in designing user-friendly interfaces that promote both utilitarian and hedonic browsing. By addressing the needs of frugal buyers, developers can enhance user experiences and engagement.

- ✓ Leveraging Social Influence: The strong impact of social influence on digital persuasion suggests that app developers and marketers should actively encourage user referrals and recommendations within their platforms. Implementing features that facilitate sharing and reviews by friends and family can lead to increased user adoption and engagement. Building on social connections can be a powerful strategy to drive user conversion.

- ✓ Optimizing Persuasion Strategies: Recognizing the positive correlation between task-oriented app usage and digital persuasion, developers can fine-tune their persuasion strategies to effectively target this user segment. Providing comprehensive product information, price comparisons, and efficient features can be particularly appealing to task-oriented users. Developers should continually refine and optimize these aspects of their apps.

- ✓ Ethical Considerations: Policymakers should consider regulating digital persuasion tactics within online food delivery apps to ensure ethical and transparent practices. Guidelines and regulations can help prevent potentially manipulative tactics that exploit users' decision-making processes. Ethical standards in digital marketing and persuasion should be promoted and enforced.

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- ✓ Consumer Education: As online food shopping continues to grow, consumer education initiatives can help users make informed choices. Guiding how to evaluate online food delivery options, navigate app features, and recognize persuasive techniques can empower consumers to make decisions that align with their preferences and values.

Future research in the field of online food shopping in Indonesia should consider exploring the impact of cultural and regional variations on consumer behavior, investigating the long-term effects of frugal buying habits and app behavior on customer loyalty, and addressing ethical concerns related to digital persuasion tactics. Comparative studies between different countries or regions can provide valuable cross-cultural insights, and research should also delve into the health and well-being implications of online food shopping. As technology evolves, assessing the impact of emerging technologies like artificial intelligence and augmented reality, as well as the role of user experience and interface design, is essential. Sustainability and environmental considerations should also be integrated into future research to understand their influence on consumer choices within the online food delivery context. This holistic research approach can contribute to a more comprehensive understanding of online food shopping dynamics, ultimately benefiting both businesses and consumers in Indonesia.

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