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Innovative Approaches to E-Grocery: Analyzing Customer Satisfaction in Facebook Livestream Shopping

Karen Tien Wan Lin[1], Vincent Oh Kim Seng[2,*], Hasliza Hassan[1], Shaikh Fazlur Rahman[1]

[1]Faculty of Management, Multimedia University, Selangor, Malaysia
[2]Centre of Postgraduate Studies, Jesselton University College, Sabah, Malaysia
*Corresponding author: voks79@gmail.com (ORCiD: 0009-0000-2331-545X)

Abstract

The primary objective of this study is to examine the crucial determinants that influence customer satisfaction in Facebook livestream e-grocery shopping in Malaysia, with a particular focus on housewives as a significant consumer segment. A sample of 220 respondents was selected using simple random sampling, and the data was analyzed using the Statistical Package for the Social Sciences (SPSS). The analysis confirms the hypotheses that customer satisfaction in Facebook Livestream e-grocery shopping was influenced by factors such as product quality, security, website design, delivery service and e-service quality. Interestingly, three factors, including information quality, payment method, and product variety, were found to have no significant impact on satisfaction, diverging from previous studies. These findings underscore the importance of maintaining high product quality to enhance customer experience and satisfaction in e-grocery shopping through Facebook Live. This research contributes to the existing body of knowledge on e-grocery shopping within the context of social commerce by focusing on Facebook Live, which is recognized as a platform that remains relatively underexplored. Future research can then explore other social commerce sites and more general demographic populations to delve deeper into the culture of e-grocery shopping, further enhancing its positive value and growth.

1.0   Introduction

It has been widely noted that the grocery retail industry in Malaysia is one of the biggest profit-generating trades, undergoing a major transformation with a rising shift from conventional brick-and-mortar grocery shopping to e-grocery platforms. The e-grocery sector in Malaysia is projected to reach USD 1.9 billion by 2025, increasing at a compound annual growth rate (CAGR) of 18.7% (Statista, 2024). This particular trend also significantly reflects global market shifts, as online grocery sales are expected to contribute over 20% of total grocery sales worldwide by 2030 (McKinsey, 2023). Today, the rising implementation of digital platforms for grocery shopping is driven by technological advancements, shifting consumer preferences, and an increasing demand for convenience (Moorthy et al., 2025). Additionally, the COVID-19 pandemic significantly accelerated the growth of e-grocery services, as consumers sought safer and more convenient alternatives to physical store visits (NielsenIQ, 2022; Deloitte, 2022). Malaysian consumers have become increasingly accustomed to digital transactions, prompting retailers to invest heavily in enhancing their online platforms, logistics capabilities, and delivery efficiency (Moorthy et al., 2025). Moreover, the introduction of mobile payment solutions and the expansion of internet infrastructure across urban and semi-urban areas have also supported increased online grocery adoption (Bank Negara Malaysia, 2022). Consequently, the competitive landscape within the Malaysian grocery market is rapidly evolving, compelling traditional retailers to innovate and adapt in order to maintain their market positions amid growing digital competition (Moorthy et al., 2025).

A comparative analysis between traditional grocery shopping and e-grocery adoption reveals a steady decline in physical store visits, particularly among urban consumers. A survey conducted by iPrice (2023) found that 68% of Malaysians prefer web-based grocery shopping due to factors such as time efficiency, product variety, and promotional discounts. Meanwhile, traditional grocery shopping is becoming less popular due to concerns over traffic congestion, limited operating hours, and higher costs associated with physical stores. These statistics highlight the shifting consumer preferences that are fueling the rapid growth of e-grocery platforms. Furthermore, it has been noted that housewives often stimulate e-grocery shopping, as they frequently handle

household purchases. In Malaysia, particularly around 3 million housewives play a vital role by increasingly using platforms such as Facebook Live for online grocery shopping (SOCSO, 2023). Their active engagement justifies their inclusion in this study, as understanding their satisfaction is crucial for developing effective e-grocery business strategies and enhancing services. Hence, this study aims to examine the crucial determinants that influence customer satisfaction in Facebook livestream e-grocery shopping, with a particular focus on how product quality, security, website design, delivery service, e-service quality, information quality, payment method, and product variety influence customer satisfaction. By understanding these factors, this research seeks to provide insights that can help retailers improve their strategies in this emerging and competitive online market.

1.1   The Rise of Facebook Livestream in E-Grocery Shopping

Facebook Livestream has emerged as an innovative and engaging platform for e-grocery shopping, providing a real-time, interactive shopping experience. It enables sellers to showcase their products, interact with customers, and offer personalized promotions, thereby creating a more immersive and trust-building shopping environment. According to Hwa et al. (2023), livestream shopping enhances consumer engagement and increases perceived trust, which significantly influences purchase behavior. A study by Chen et al. (2022) also found that 74% of consumers who participate in livestream shopping are more likely to complete their purchases compared to traditional e-commerce users. However, despite the advantages of Facebook Livestream, the increasing number of e-grocery competitors and the complexities of managing a digital presence pose challenges in maintaining customer satisfaction. Retailers must continuously refine their strategies to retain customers and differentiate themselves from competitors. While e-grocery adoption and livestream shopping are rapidly growing, there is still a lack of research specifically addressing customer satisfaction in the Facebook Livestream e-grocery space.

Most prior studies on e-commerce have focused on general online shopping experiences, neglecting the interactive and social aspects of livestream shopping (Lan,

2021). Additionally, research on e-grocery adoption has primarily examined logistics, pricing, and convenience, while factors such as security, product quality, and service reliability in a livestream setting remain underexplored (Lin & Zheng, 2023). While previous studies have examined customer satisfaction in online grocery shopping, limited research has focused specifically on Facebook Livestream as a growing e-commerce channel. Existing research primarily explores factors such as convenience, pricing, and product availability, but lacks an in-depth analysis of security concerns, delivery services, and interactive e-commerce engagement (Lan, 2021; Lin & Zheng, 2023). Based on the various empirical studies mentioned above, this study aims to bridge the gap by analyzing key determinants of customer satisfaction in Facebook livestream e-grocery shopping, providing insights into how businesses can enhance their sustainability in the e-commerce industry.

One of the main issues faced by e-grocery platforms is trust and security concerns. Consumers are often hesitant to make purchases via Facebook Live due to concerns about fraudulent transactions, data privacy, and misleading product information (Lai et al., 2023). Unlike traditional e-commerce platforms with verified sellers and secure payment gateways, Facebook Livestream transactions rely heavily on seller credibility, making trust a crucial factor in customer satisfaction. Another major challenge is delivery speed and service reliability. Unlike traditional online grocery stores that partner with logistics providers, many Facebook Livestream sellers manage their own deliveries, leading to inconsistent service quality. Delays, incorrect orders, and damaged goods have a significant impact on customer experiences, making the delivery service a critical determinant of satisfaction (Pan et al., 2017). Additionally, customer engagement trends in social media shopping have a significant impact on consumer satisfaction. The interactive nature of Facebook Livestream shopping allows for direct communication between buyers and sellers, but inconsistent service quality, poor response times, and unstructured promotional strategies can hinder satisfaction levels. E-service quality, including responsiveness, reliability, and overall user experience, plays a crucial role in shaping consumer perceptions of e-grocery shopping (Yoshua et al., 2023).

As a consequence, this study aims to address these gaps by examining the key determinants that influence customer satisfaction in Facebook livestream e-grocery shopping. By addressing these aspects, this research offers valuable insights for e-grocery industries seeking to enhance their service quality and customer retention strategies.

2.0   Literature Review and Hypotheses Development

2.1   E-Grocery in Malaysia

It has been clearly noticed that in 2023, the e-commerce industry accounted for almost 19% of retail sales globally, and this large number is expected to grow by 25% by 2027 (Statista, 2024). The e-grocery landscape in Malaysia has tremendously evolved in recent years, and it has also been noticed that this growth emerged during the COVID-19 pandemic. According to Hasanov and Khalid (2025), Malaysian consumers initially showed hesitance toward online grocery shopping due to concerns about product quality and delivery reliability. However, Dali et al (2019) documented a gradual shift in consumer behaviour, especially among urban professionals seeking convenience and time efficiency. In an in-depth study of Malaysian e-grocery adoption, Yeo et al. (2017) identified that shopping for groceries online remains a barrier, despite the quality of food still being a concern. It was also mentioned by Sulaiman et al. (2017) that there was a further substantial increase in e-grocery adoption across age groups, with first-time users reporting higher-than-expected satisfaction levels. A recent study by Jayaramman et al. (2019) highlighted the critical role of mobile technology in facilitating e-grocery shopping among Malaysian consumers, particularly through multi-vendor marketplace apps. Building on this evolving landscape, the emergence of social commerce platforms such as Facebook Live has introduced new dynamics into the online grocery ecosystem. Understanding these factors is essential for both academic and practical implications, as it can guide e-grocery vendors in designing strategies that enhance consumer satisfaction.

2.2   Theoretical Foundation

To better understand customer satisfaction, especially in Facebook Livestream e-grocery shopping, this investigation is underpinned by the Expectation-Confirmation Theory (ECT) and the Technology Acceptance Model (TAM). The ECT, initially proposed by Oliver (1980), posits that consumer satisfaction is mainly driven by the confirmation or disconfirmation of expectations following actual product or service experience. When customers' pre-purchase expectations are met or exceeded during their Facebook livestream e-grocery shopping experience, positive confirmation occurs, which leads to higher satisfaction and a greater likelihood of continued patronage (Bhattacherjee, 2001). More specifically, ECT has been developed by Oliver (1980) and advocates that consumer pleasure is determined by the degree to which their expectations are met or exceeded. When actual experiences align with prior expectations, satisfaction increases, reinforcing repeat purchases. In the context of Facebook Live e-grocery shopping, customers expect various benefits that can be obtained through the e-commerce experience. If the e-commerce platform is able to meet or exceed their expectations, customer satisfaction and loyalty are enhanced. This particular framework is especially relevant in the digital commerce context, where consumers often form expectations based on product descriptions, influencer endorsements, and peer reviews presented during live streaming sessions (Lim et al., 2022).

In addition to Complementing ECT, the Technology Acceptance Model (TAM) (Davis, 1989) extensively explains how users come to accept and use new technologies, highlighting the critical roles of perceived usefulness and perceived ease of use. According to Davis (1989), users accept and engage with technology based on two crucial perceptions: perceived usefulness (PU) and perceived ease of use (PEOU). For e-grocery shopping via Facebook Livestream, the platform must be easy to use, secure, and beneficial to consumers, ultimately enhancing their satisfaction with the platform. Particularly, if consumers perceive the platform as useful (e.g., offering better deals and interactive shopping) and easy to use (e.g., featuring seamless navigation and fast transactions), they are more likely to adopt and continue using it. In the pragmatic scenario of Facebook Livestream e-grocery shopping, TAM suggests that consumers' willingness to engage with this shopping channel depends on their perceptions of its

utility, such as convenience, time savings, and interactive engagement, as well as the system's user-friendliness (Venkatesh & Davis, 2000).

This notion aligns with Li et al. (2021), who found that perceived ease of use and usefulness have a strong influence on both initial adoption and ongoing satisfaction with social commerce platforms. Hence, the combination of ECT and TAM delivers a robust theoretical foundation for evaluating customer satisfaction in this novel retail environment. Theoretically, this particular approach captures both the psychological processes of expectation and confirmation (from ECT) and the technological determinants of acceptance and continued use (from TAM). This dual-theory perspective enables the study to holistically examine not only how customers' expectations are formed and confirmed, but also how technological perceptions influence their satisfaction and future behavioral intentions (Bhattacherjee, 2001; Lim et al., 2022). Hence, underpinned by both theories, this study aims to examine the impact of product quality, security, website design, delivery service, e-service quality, information quality, payment method, and product variety on customer satisfaction.

2.3   Hypothesis Development

2.3.1   Website Design

Web design plays a very crucial role in the success of an online shopping experience. According to a research study conducted by Guo et al. (2023), websites with well-structured layouts and easy navigation can increase user interaction and satisfaction. Similar to Saoula et. al. (2023), who also found that a lovely and straightforward website to navigate builds trust, leading to easier transactions. In addition, Cyr (2014) echoed this point by arguing unequivocally that website design features, including aesthetic appeal and navigation, have a significant impact on consumer loyalty and trust. Likewise, Hsieh et al. (2015) also note that observations of operators' websites can influence their cognitive actions, including a strong perception of the website, which in turn affects their satisfaction and trust. This notion is further supported by Gefen (2000), who also identified the significance of trust and familiarity in the case of e-commerce, with these

two factors being key to successful online transactions. Hence, based on the aforementioned empirical studies, the importance of website design as a means of enhancing user experience and satisfaction is evident. The following hypothesis is proposed below.

H1: Website design has a significant positive effect on customer satisfaction in Facebook Livestream e-grocery shopping.

2.3.2   Security

Security issues continue to be a significant deterrent to the adoption of online retail. Lai et al. (2023) note that as cybercrime rates increase, consumers expect secure payment gateways and robust data protection mechanisms. Singh et al. (2024) examined and explored consumers' perceptions of various security features on e-commerce websites and determined their impact on trust in these features. The key results indicated that information integrity and confidentiality had a positive effect on consumer trust, which in turn influenced their intention to use e-commerce websites. Likewise, Trang et al. (2023), in their research on the determinants of customer satisfaction in e-commerce settings, with security perception as a key focus, confirmed that security perception, customer service, and product information play a significant role in influencing customer satisfaction, underscoring the importance of having a secure e-commerce website. Additionally, Sofik Handoyo (2024) established through a meta-analysis that trust, perceived risk, and perceived security have significant impacts on consumers' e-commerce buying behavior. The research emphasized the importance of considering these crucial factors to manage them effectively, thereby achieving consumer trust and satisfaction.

Additionally, although there is no specific research on e-grocery shopping via Facebook livestreams, the general connection between security perceptions and customer satisfaction in online retail environments is well established. For example, Novialeta and Slamet (2020) emphasized that privacy and security issues have a negative impact on customers' intentions to shop online, highlighting the importance of robust security

measures in enhancing customer satisfaction. Additionally, Almugari et al. (2022) confirmed that security perception has a significant impact on trust and purchase intentions on online shopping websites. These studies collectively demonstrate that security issues take priority in enhancing customer satisfaction and building trust in online applications.

H2: Security has a significant positive effect on customer satisfaction in Facebook Livestream e-grocery shopping.

2.3.3   Information Quality

It is a large concern for consumers that they use product information to make informed choices. High-quality information can be characterized as accurate, detailed, and timely, enabling consumers to make informed choices and thereby enhancing their overall shopping experience. For instance, Tzeng et al. (2020) found that information quality, combined with product quality and savings, plays a crucial role in achieving customer satisfaction in online shopping processes. On the other hand, spreading false information or creating uncertainty can lead to mistrust and erode consumers' faith in e-grocery websites. Ghosh et al. (2023) examine the effect of misinformation on consumers during the COVID-19 pandemic era and show that the spread of misinformation created mass hysteria, resulting in irrational buying behavior and the hoarding of necessary items. Similarly, Bhat and Darzi (2021) highlight the significant connection between information quality and customer satisfaction in the case of online service quality. Both information quality and system quality, as per their research, are major determinants of consumers' satisfaction with a website and their willingness to perform e-commerce activities.

H3: Information quality has a significant positive effect on customer satisfaction in Facebook Livestream e-grocery shopping.

2.3.4   Payment Method

Various payment methods enable convenient payment and stimulate buyer confidence. Sudirjo et al. (2023) established that clients are more eager to buy on websites that offer flexible payment options, such as credit cards, online wallets, and cash on delivery. Based on Lopez et al. (2024), the willingness of consumers to buy online or offline is determined by the issues of transparency in payment and the mechanism adopted to resolve differences, which stipulates the requirement for flexible means of payment to meet the diverse needs of consumers. However, the presence of many payment channels does not necessarily translate to more consumer confidence. Confidence in the payment process itself is essential. Mofokeng (2021) emphasized that customer satisfaction and loyalty during online shopping conditions are primarily determined by perceived security. Secure payment gateways and the assurance that consumers have their financial data protected are fundamental to building confidence and repeat business. Some payment avenues may also differ based on demographics and the type of transaction. The Federal Reserve Bank survey (2023) indicated that while credit cards and debit cards are most frequently used for making purchases, a majority of consumers continue to use cash, mostly for face-to-face transactions. This agrees with the contention that e-commerce shopping websites should offer more than one Payment Avenue to accommodate different consumer segments.

H4: Payment methods have a significant positive effect on customer satisfaction in Facebook Livestream e-grocery shopping.

2.3.5   E-Service Quality

E-service quality encompasses various dimensions, including platform responsiveness, efficiency, and customer support. It has been found that prompt service and good problem-solving play a significant role in consumer satisfaction (Saleem et al., 2022). Meanwhile, low-quality service will provoke frustration and decreased customer loyalty, underscoring the importance of maintaining high service provision rates in internet-based services. A study by Rita et al. in 2019 on online consumer behaviour identified that

factors such as website design, privacy, and security, as well as order fulfilment, are key determinants of quality service, thereby affecting customer satisfaction and trust. Additionally, Yingying Ma (2021) claimed that the quality of live-streaming content and the quality of supporting e-services are among the most significant determinants of consumer satisfaction in this regard. This notion highlighted that the quality of e-commerce service plays an essential role in enhancing customer satisfaction throughout their shopping experience.

H5: E-service quality has a significant positive effect on customer satisfaction in Facebook Livestream e-grocery shopping.

2.3.6   Product Quality

Product quality plays a vital role in shaping customer satisfaction. Ghosh et al. (2023) note that freshness, proper packaging, and consistency are key concerns for online grocery shoppers. When these expectations are not met, customers often feel disappointed and may lose trust in the brand. Ali and Naushad (2021) highlight that poor quality not only affects the immediate shopping experience but also damages the brand's image in the long run. In contrast, consistently delivering high-quality products encourages repeat purchases, strengthens customer loyalty, and promotes positive word-of-mouth. In addition, Raja et al. (2023) emphasized that ensuring product quality is essential for companies to maintain customer satisfaction. When customers are satisfied with the quality, they are more likely to continue using the product in the future. Based on the empirical findings discussed, the following hypothesis is proposed:

H6: Product quality has a significant positive effect on customer satisfaction in Facebook Livestream e-grocery shopping.

2.3.7   Product Variety

Customers appreciate the offering of a variety of products to meet different needs. At the same time, product variety affects consumer preference and satisfaction, especially in

online food shopping. Customers typically choose those who offer a wide variety of products to meet various needs and preferences, which increases customer satisfaction and loyalty (Lestari & Manafe, 2023). Yet, product variety is intricately linked with customer satisfaction. Iyengar and Lepper (2000) illustrated that showing consumers too many options can produce a decision freeze, lower levels of motivation towards decision-making, and lower levels of satisfaction with their choices, a condition generally referred to as "choice overload.". In addition, Chernev et al. (2015) conducted a meta-analysis showing that product variety attracts consumers; however, excessive variety without proper regulation or simplification can lead to lower-quality decisions and consumer dissatisfaction. In the context of Facebook Live e-grocery shopping, striking the right balance by offering sufficient variety without causing choice overload is essential. Strategies such as clear product presentation, concise information, and personalized suggestions can help manage variety effectively, enhancing customer satisfaction and loyalty in virtual shopping environments.

H7: Product variety has a significant positive effect on customer satisfaction in Facebook Livestream e-grocery shopping.

2.3.8   Delivery Service

Speedy and reliable delivery is crucial in web-based online grocery shopping. This is especially true for platforms like Facebook Live e-grocery shopping, where efficiency and dependability in delivery services significantly influence customer satisfaction. Consumers expect their orders to arrive promptly and in good condition; delays or damaged goods can greatly diminish their overall experience. Gaetano et al. (2028) found that when delivery times extend from two to seven days, customer demand can drop by as much as 37.5%, underscoring the critical role of timely delivery in maintaining customer interest and satisfaction. Moreover, the quality of delivery service has a significant impact on brand image and customer loyalty. Delivery errors, delays, and product damage can negatively affect customer satisfaction, harm the brand's reputation, and disrupt cash flow (Toomey, 2022). Reema and Magnus (2020) further emphasize

that platforms offering fast and affordable delivery solutions gain a competitive advantage in retaining customers.

H8: Delivery service has a significant positive effect on customer satisfaction in Facebook Livestream e-grocery shopping.

2.4   Conceptual Framework of the Study

The diagram below gives a visual representation of the conceptual framework and hypotheses to be used in this study.
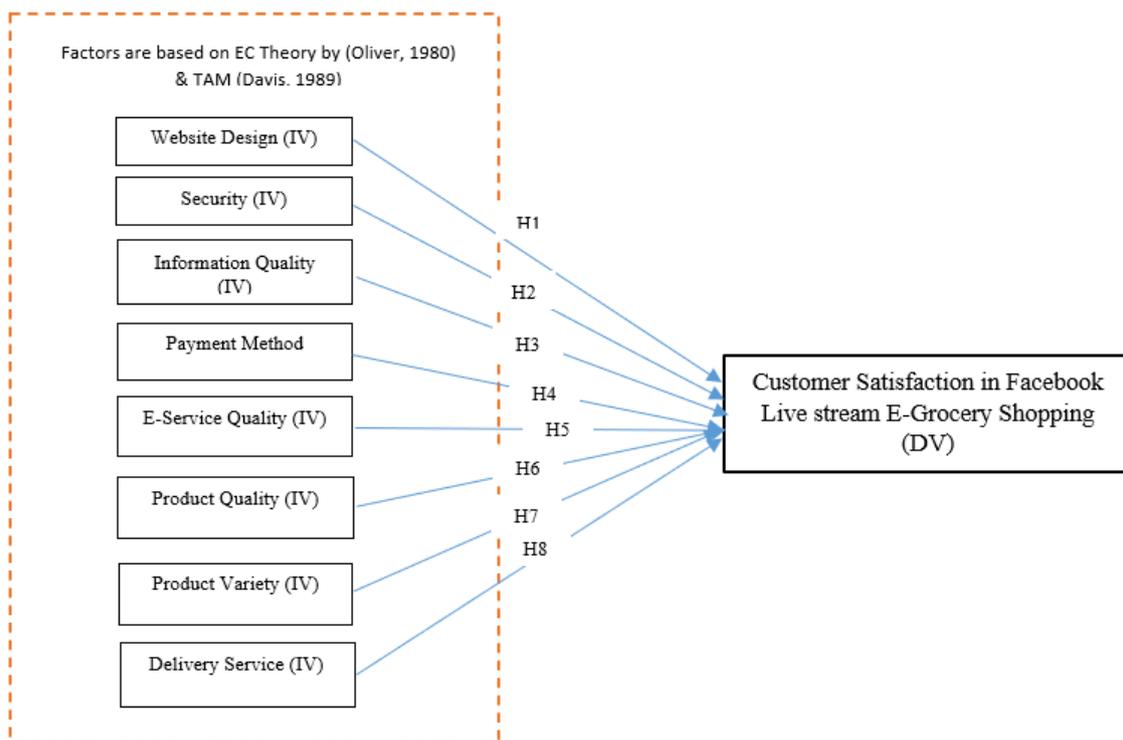

Figure 1: Research Framework

3.0   Methodology

3.1   Questionnaire Design

The present study employed a self-administered online survey via Google Forms to collect data for analysis. The questionnaire was carefully developed by adapting items from previously validated instruments used in recent studies on customer satisfaction in both e-commerce and social commerce contexts. The questionnaire was organized into three main sections: Section A consisted of three questions assessing demographic information; Section B comprised 23 questions related to the independent variables; and Section C included three questions measuring the dependent variable (customer satisfaction). Each independent variable, namely website design, security, information quality, payment method, e-service quality, product quality, product variety, and delivery service, was assessed using two to three items per construct, adapted from prior studies as summarized in Table 1 below. All questionnaire items were rated on a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), allowing for consistent and nuanced assessment of participants' perceptions.

Table 1: Instruments of this Study

Variables	Number of Items	Source
Website Design (WD)	3	Guo et al. (2023)
Security (S)	3	Lai et al. (2023)
Information Quality (IQ)	3	Shian-Yang et al. (2020)
Payment Method (PM)	2	Sudirjo et al. (2023)
E-Service Quality (EQ)	3	Prashar and Kalotra (2021)
Product Quality (PQ)	3	Ghosh et al. (2023)
Product Variety (PV)	3	Lestari and Manafe (2023)
Delivery Service (DS)	3	Pan et al. (2017)

3.2   Sampling and Target Population

The target population for this study was specifically housewives in Malaysia who had experienced shopping for groceries via Facebook livestream at least once. Housewives

were selected because they significantly influence household grocery purchases and frequently engage with Facebook livestream shopping platforms (Hussain & Hwa, 2023). According to SOCSO (2023), housewives represent a substantial demographic, comprising around 3 million individuals and thus constitute a critical segment for the e-grocery sector. A non-probability purposive sampling technique was employed to ensure the selection of respondents with relevant Facebook livestream e-grocery shopping experiences. This purposive sampling approach ensured targeted and meaningful participation aligned with the research objectives. A sample size calculation was conducted using G*Power analysis, specifying a medium effect size ($f^2 = 0.15$), a power of 0.80, and an alpha level of 0.05. Based on these parameters, a sample of at least 210 respondents was necessary. However, to enhance reliability and validity, data collection exceeded this minimum requirement, resulting in a total of 220 responses. This approach aligns with recommended practices established in prior studies (Chirasathit, 2022; Hussain & Hwa, 2023; Guo et al., 2012).

4.0   Results

The present study examined the factors influencing customer satisfaction among 220 housewives engaged in Facebook livestream e-grocery shopping. The analysis revealed that product quality, security, website design, delivery service, and e-service quality were significant predictors of customer satisfaction. In contrast, information quality, payment method, and product variety did not show a significant effect. The demographic profile of the respondents was diverse, with 60% aged between 31 and 45 years and 18.2% aged 45 to 60 years. Educational backgrounds varied, with 45.9% holding a Bachelor's or Associate's degree and 36.4% having completed secondary education. The sample comprised 44.5% Chinese, 41.8% Malay, and 13.7% Indian participants, providing a comprehensive context for interpreting customer satisfaction patterns within this population.

4.1   Reliability and Correlation Analysis

The reliability of the constructs used in the questionnaire was assessed using Cronbach's Alpha, with all constructs exhibiting values greater than 0.70, thereby confirming high internal consistency. The overall Cronbach's Alpha score for the questionnaire was 0.823. To further explore the relationships among the variables, Pearson correlation analysis was performed. The results demonstrated significant positive correlations between customer satisfaction and product quality (r = 0.507, p < 0.01), security (r = 0.420, p < 0.01), website design (r = 0.353, p < 0.01), and delivery service (r = 0.271, p < 0.05). However, product variety was not significantly correlated with customer satisfaction (r = 0.039, p > 0.05), indicating that its impact in this context may be limited.

4.2   Multiple Linear Regression Analysis

To determine the impact of the independent variables on customer satisfaction, multiple linear regression analysis was conducted. The regression model accounted for 46.1% of the variance in customer satisfaction (R^2 = 0.461), indicating a substantial explanatory power. The analysis confirmed that product quality, security, website design, delivery service, and e-service quality were significant contributors to customer satisfaction in Facebook livestream e-grocery shopping. In contrast, information quality, payment method, and product variety did not have a significant effect. These findings provide valuable insights for e-grocery retailers seeking to enhance customer satisfaction by prioritizing key service and quality factors. Detailed regression results are presented in Table 2.

Table 2: Multiple Linear Regression Results

Independent Variable	Beta (β)	t-value	p-value	Significance
Product Quality	0.227	3.691	0.000	Significant
Security	0.198	3.099	0.002	Significant
Website Design	0.171	2.885	0.004	Significant
Delivery Service	0.169	2.622	0.009	Significant
E-Service Quality	0.134	2.014	0.045	Significant

Independent Variable	Beta (β)	t-value	p-value	Significance
Information Quality	0.078	1.339	0.182	Not Significant
Payment Method	-0.101	-1.827	0.069	Not Significant
Product Variety	0.039	0.676	0.500	Not Significant

5.0   Discussion

In the context of Facebook livestream e-grocery shopping, this study found that information quality, payment method, and product variety did not significantly impact customer satisfaction, contrary to prior research, which has often emphasized these as critical determinants in traditional e-commerce environments. Shian-Yang et al. (2020) emphasized the importance of providing detailed and accurate product information to enhance customer satisfaction. However, in the interactive, real-time setting of livestream shopping, consumers can receive immediate demonstrations and directly engage with sellers, thereby reducing their reliance on static information sources (Samah, 2025; Shian-Yang et al., 2020). Similarly, while Sudirjo et al. (2023) found that diverse payment options positively influence satisfaction, the current findings suggest that Malaysian consumers perceive payment methods as largely standardized, prioritizing transaction security and simplicity over payment options (Lai et al., 2023). As for product variety, Lestari and Manafe (2023) previously argued for its positive effect on satisfaction, yet the present results indicate that e-grocery shoppers are more concerned with quality, freshness, and reliability—often supplementing their needs through multiple platforms if required (Samah, 2025; Lestari & Manafe, 2023).

Conversely, the regression analysis in this study identified product quality as the strongest predictor of customer satisfaction ($\beta = 0.227$, $p < 0.001$), underscoring the ongoing importance of product quality in online grocery purchases, which is consistent with the findings by Ghosh et al. (2023). Security ($\beta = 0.198$, $p = 0.002$) and website design ($\beta = 0.171$, $p = 0.004$) were also significant, supporting the existing literature on the importance of secure transactions and user-friendly interfaces (Lai et al., 2023; Guo et al., 2023). Furthermore, delivery service ($\beta = 0.169$, $p = 0.009$) and e-service quality ($\beta = 0.134$, $p = 0.045$) were significant contributors, highlighting the importance of timely deliveries and responsive customer support, as evidenced in studies by Pan et al.

(2017) and Yoshua et al. (2023). Collectively, these results demonstrate that the unique, interactive, and immediate nature of livestream platforms can reshape the factors influencing customer satisfaction, shifting the emphasis away from traditional predictors, such as information quality, payment variety, and product assortment, toward practical service dimensions. The model explained 46.1% of the variance in customer satisfaction ($R^2 = 0.461$), indicating a moderate yet meaningful level of explanatory power and reinforcing the importance of further research into the evolving landscape of livestream e-commerce and its cultural and contextual determinants.

6.0   Implication

6.1   Theoretical Implications

This study makes a substantial contribution to theory by extending and supporting existing consumer behavior models in the context of social trade. First, it extends the Expectation-Confirmation Theory (ECT) by demonstrating that not all consumer expectations contribute equally to satisfaction in e-grocery livestream shopping. Traditional applications of ECT suggest that when consumer expectations align with actual experiences, satisfaction increases. However, this study reveals that these factors no longer hold significant influence in real-time with interactive environments. Instead, factors such as product quality, transaction security, website design, delivery service, and e-service quality emerge as more salient predictors of consumer satisfaction. This shift suggests that customer expectations are increasingly shaped and satisfied through immediate engagement, visual demonstrations, and interpersonal trust, rather than static information or broad payment flexibility. This insight challenges conventional ECT assumptions and underscores the need for further investigation into how expectations evolve in dynamic and interactive e-commerce environments.

Second, this research supports the Technology Acceptance Model (TAM) by confirming that website design has a significant influence on customer satisfaction, thereby reinforcing the TAM construct. Moreover, security, delivery service, and e-service quality were identified as key drivers of customer satisfaction on Facebook

livestream platform adoption. These findings align with prior TAM research while highlighting the distinct factors that influence consumer acceptance in a livestream shopping context. By applying TAM in a novel setting, this study contributes to a broader understanding of technology adoption in emerging social commerce platforms.

6.2   Practical Implications

The findings of this study provide valuable guidance for practitioners and online retailers operating in the Facebook livestream e-grocery sector. First, the strong influence of product quality highlights the need for sellers to prioritize the freshness, reliability, and overall quality of products offered during livestream sessions (Ghosh et al., 2023). Retailers should consider implementing real-time quality demonstrations and transparent sourcing practices to further reassure customers. Second, the significant role of transaction security emphasizes the importance of investing in secure payment gateways and robust data protection measures, as security concerns remain paramount in shaping customer trust and satisfaction (Lai et al., 2023). User-friendly website design is also crucial; features such as intuitive navigation and engaging interfaces can enhance the livestream shopping experience and reduce customer friction (Guo et al., 2023).

Moreover, the importance of delivery service and e-service quality suggests that prompt, reliable delivery and responsive customer support are key to customer retention (Yoshua et al., 2023). Retailers should consider partnering with trusted logistics providers and providing training to support staff to handle customer inquiries efficiently. Interestingly, factors such as information quality, payment method variety, and product variety, which are typically significant in traditional e-commerce (Shian-Yang et al., 2020; Sudirjo et al., 2023; Lestari & Manafe, 2023), were not significant in this context. This suggests that the interactive, real-time, and social nature of livestream platforms may shift consumer priorities, echoing Samah's (2025) observation that direct engagement reduces dependence on static product information. Practitioners should therefore focus resources on enhancing live interaction, service reliability, and core transaction features, rather than expanding product range or payment options.

6.3   Managerial Implications

The results of this study offer several actionable insights for e-grocery retailers utilizing Facebook Live as a sales platform. First, retailers must prioritize security and trust-building measures to enhance customer confidence in their transactions. Given that security significantly influences customer satisfaction, businesses should invest in secure payment gateways, robust fraud detection systems, and transparent return and refund policies. Additionally, implementing seller verification processes and providing transparent pricing can further strengthen trust and encourage repeat purchases. Second, live engagement through interactive demonstrations proves to be more effective than static product descriptions. Since information quality had little to no effect on customer satisfaction, this suggests that consumers rely more on real-time product displays, Q&A sessions, and seller interactions rather than written descriptions. Retailers should leverage storytelling techniques, provide live demonstrations of product usage, and actively engage with potential buyers to enhance the shopping experience.

Third, fast and reliable delivery services, along with strong customer support, should be key business priorities. Delivery service was found to be a significant predictor of customer satisfaction, reinforcing the need for efficient logistics partnerships, transparent tracking systems, and adherence to promised delivery timelines. Furthermore, providing responsive customer service, whether through chatbots, dedicated support teams, or post-purchase assistance, can help mitigate customer concerns and enhance satisfaction. Fourth, these findings guide policymakers and industry regulators. By understanding the factors that drive satisfaction in e-grocery livestream environments, authorities can develop standards and consumer protection policies tailored to this rapidly growing digital market (Rahman et al., 2024). Ensuring fair trading practices, transparent disclosures, and secure transaction environments will further protect consumers and promote market sustainability.

Fifth, payment flexibility does not necessarily enhance satisfaction, but transaction security plays a crucial role. The findings suggest that simply offering multiple payment options does not significantly impact consumer satisfaction, as most e-grocery platforms already provide standard payment methods. Instead, retailers should

focus on enhancing transaction security, ensuring compliance with data protection regulations, and integrating fraud prevention mechanisms to maintain consumer trust. By prioritizing security over payment variety, businesses can foster stronger relationships with customers and enhance long-term retention. Ultimately, this research provides a blueprint for practitioners seeking to improve consumer satisfaction and gain a competitive advantage in the evolving field of livestream e-grocery retailing. By prioritizing product quality, security, usability, logistics, and service responsiveness, industry players can more effectively address consumer expectations and strengthen their market position.

6.4   Research Limitations and Future Research Directions

This study has several limitations that should be acknowledged. First, the study sample exhibited demographic bias, as 44.5% of respondents were Chinese, which may limit the generalizability of the findings to other racial groups in Malaysia. While the study provides valuable insights into housewives' engagement with Facebook Livestream e-grocery shopping, it does not account for potential differences in shopping behaviors among diverse ethnic and socioeconomic groups. Additionally, income levels were not examined, which could be a crucial determinant of purchasing behavior and affordability in e-grocery shopping. Future research should incorporate a more representative sample to explore variations in customer satisfaction across different demographic and economic segments. Second, the study was limited in its platform scope, focusing exclusively on Facebook Livestream while overlooking other emerging social commerce platforms such as TikTok Shop and Shopee Live. With the increasing popularity of alternative digital shopping channels, consumer engagement, trust, and satisfaction may vary depending on platform-specific features. Since different platforms offer unique engagement mechanisms—such as influencer-driven promotions on TikTok Shop and integrated marketplace models on Shopee Live—future studies should compare customer experiences across multiple livestream shopping platforms to provide a more comprehensive understanding of e-grocery shopping trends.

Third, the study's sample was restricted to housewives, as they are traditionally responsible for household grocery purchases and are more likely to engage with livestream promotions. However, this approach excludes younger demographics and working professionals, who may also be active participants in e-grocery shopping. Given that digital shopping behaviors are evolving with generational shifts, future research should investigate how younger consumers, particularly Gen Z and millennials, interact with livestream e-commerce and whether their purchasing decisions are influenced by different factors such as convenience, digital literacy, and social influence. Expanding the scope to include a broader range of consumers will enhance the applicability of findings and provide deeper insights into the diverse landscape of e-grocery shopping. Fourth, based on the findings and constraints of this current analysis, several potential directions for future research can be explored to deepen the understanding of customer satisfaction in e-grocery livestream shopping. First, comparative studies across different social commerce platforms, such as TikTok Shop and Lazada Live, can offer insights into the varying consumer engagement and purchasing behaviors. Since each platform has unique interactive features—such as influencer-driven marketing on TikTok Shop and the integration of established e-commerce ecosystems on Lazada Live—understanding how these differences impact customer satisfaction can inform platform-specific business strategies.

Fifth, future research could explore the role of AI-driven recommendations and chatbots in enhancing customer satisfaction in e-grocery shopping. AI-powered algorithms personalize shopping experiences by suggesting products based on consumer preferences, while chatbots facilitate real-time customer support. Investigating the effectiveness of these technologies in building consumer trust, enhancing convenience, and increasing conversion rates could provide valuable insights for retailers seeking to optimize their digital strategies. Sixth, examining the influence of perceived social influence, such as peer reviews and influencer marketing, on trust and satisfaction in e-grocery livestream shopping is another critical area of research. As social commerce relies heavily on community engagement and recommendations, understanding how user-generated content, influencer endorsements, and livestream interactions affect consumer decision-making could shed light on the psychological drivers of trust in online grocery shopping.

Finally, investigating income-based consumer behaviors could provide a more nuanced understanding of how budget-conscious consumers perceive Facebook Livestream e-grocery shopping. Since affordability, promotional discounts, and cost-saving opportunities are key considerations for price-sensitive consumers, exploring how different income segments interact with livestream promotions, bundle deals, and loyalty programs could offer valuable insights into e-grocery business strategies. Future studies that incorporate diverse consumer segments across income brackets can contribute to a more inclusive understanding of livestream shopping dynamics in the e-grocery sector.

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