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FACULTY OF ACCOUNTANCY AND MANAGEMENT
UNDERGRADUATE FINAL YEAR PROJECT

Research Proposal Mark Sheet

Final Year Project Title:	The Role of Operational Efficiency in Enhancing Online Buyer Satisfaction.		
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No	Criteria	Excellent (8 - 10 marks)	Good (5 - 7 marks)	Fair (3 - 4 marks)	Poor (0 - 2 marks)	Awarded
1	Title and Abstract	Clear, concise, and informative; abstract summarizes all key elements effectively.	Clear and informative; abstract summarizes most key elements.	Title and abstract are clear but may miss some key elements.	Title and abstract are somewhat unclear or incomplete.	
2	Introduction/ Research Overview	Clearly articulated, comprehensive understanding of the research problem and context.	Adequate overview of the research topic, with some gaps in understanding or context.	Limited overview of the research topic, lacking depth or context.	Minimal or unclear overview of the research topic.	
3	Problem Statement	A clear, specific, and well-defined research problem was identified, including its significance and relevance.	Clearly stated problem, but may lack specificity or clarity in its significance.	Problem statement is present but lacks clarity, specificity, or relevance.	The problem statement is unclear or missing.	
4	Objectives	Concise and measurable objectives that align with the research problem and address key aspects of the study.	Objectives are stated but may lack specificity or alignment with the research problem.	Objectives are vague or do not align with the research problem.	Objectives are missing or not relevant to the research problem.	
5	Literature Review	Comprehensive review of relevant literature, demonstrating a thorough understanding of existing research and its relevance to the proposed study.	Adequate literature review, covering key sources but may lack depth or critical analysis.	Limited literature review, missing key sources or failing to demonstrate relevance to the proposed study.	Minimal or no literature review provided.	
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8	Organisation of the Proposal	Well-structured proposal with logical flow and clear headings/subheadings.	The proposal is organised but may lack coherence or consistency in structure.	Organization of the proposal is unclear or lacks logical flow.	The proposal is poorly organised and difficult to follow.	
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10	References	Extensive and relevant references, properly formatted.	Relevant references, mostly properly formatted.	References are relevant but formatting is inconsistent.	Few references, some may be irrelevant or improperly formatted.	
					Total	

THE ROLE OF OPERATIONAL EFFICIENCY IN
ENHANCING ONLINE BUYER SATISFACTION

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BACHELOR OF INTERNATIONAL BUSINESS (HONOURS)

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THE ROLE OF OPERATIONAL EFFICIENCY IN
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BY

LIEW XIN YING

A final year project submitted in partial fulfilment of the
requirement of the degree of

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- (2) No portion of this FYP has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.
- (3) Sole contribution has been made by me in completing the FYP.
- (4) The word count of this research report is 10,907 words.

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Date: 16 DECEMBER 2025

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DEDICATION

This paper is dedicated to Universiti Tunku Abdul Rahman (UTAR) for providing us a platform and opportunity to enhance and apply the knowledge we had learned in the past few years.

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LIST OF ABBREVIATION

APF	Accurate Order Processing and Order Fulfilment
CP	Competitive Pricing
ECT	Expectation-Confirmation Theory
GDP	Gross Domestic Product
MyDIGITAL	Malaysia Digital Economy Blueprint
OBS	Online Buyer Satisfaction
RCS	Responsive Customer Support
RRM	Return and Refund Management
RTT	Real-Time Tracking and Transparency
S	Sustainability
SERVQUAL	Service Quality Model
SPSS	Statistical Package for Social Sciences

PREFACE

This research study is carried out in part fulfilment of the requirement for the Bachelor of International Business at Universiti Tunku Abdul Rahman (UTAR). The title, "The Role of Operational Efficiency in Enhancing Online Buyer Satisfaction," is selected to examine how the role of operational efficiency affects the online buyer satisfaction in the Malaysian context. The convenience, variety, and competitive pricing offered by online retailers have reshaped consumer expectations, making service quality and operational performance increasingly important. Through this study, I have gained valuable insights into operational efficiency and online buyer satisfaction, as well as refined my research and analytical skills for future professional application.

ABSTRACT

Operational efficiency is crucial to improving online buyer satisfaction because the rise of e-commerce has increased competition among online retailers. This study examines the connection between online buyer satisfaction and operational efficiency in Malaysia's e-commerce market. A quantitative strategy was used, and online shoppers were given a structured questionnaire via Google Forms to complete. Real-time tracking and transparency, sustainability, accurate order processing and order fulfilment, return and refund management, competitive pricing, and responsive customer support are just a few of the important operational aspects that the study looks at. The findings show that, with the exception of real-time tracking and transparency, the majority of operational efficiency factors have a significant impact on online buyer satisfaction. These results emphasize how crucial dependable and customer-focused operational procedures are to raising customer satisfaction and maintaining competitiveness in the e-commerce sector.

Keywords: Online buyer satisfaction, Operational efficiency, E-commerce, Operational Management, Online Retailer

CHAPTER 1: RESEARCH OVERVIEW

1.1 Research Background

E-commerce's rise has drastically changed how people buy products all over the world, including in Malaysia (Melović et al., 2021). Online shopping is now a usual way for many customers to make purchases because the rising of internet penetration, widespread use of smartphones and the quick development of digital payment systems (Revindran et al., 2020). Online marketplaces, for instance, Shopee, Lazada and TikTok Shop have grown to be major players by providing customers with a large selection of goods at affordable costs and with easy ways to make purchase. However, millions of people use online shopping because it is convenient, but it also raises expectations for operational efficiency (Naszariah et al., 2021). Even though Malaysian e-commerce is still growing rapidly, there are still many difficulties in guaranteeing high customer satisfaction level. Although Malaysian consumers appreciate the ease and diversity of online shopping, there are also many unhappy with operational problems, for instance, delayed deliveries, insufficient tracking, product returns and slow customer service (Melović et al., 2021). These operational weaknesses bring attention to a significant gap between the actual service performance and customer expectations. Nowadays, buyers are more interested in quick delivery, precise order fulfilment, clear tracking and attentive customer support than they are in product variety and cost. Companies that ignore these requirements will have risk of losing customers to rivals who place a higher priority on operational excellence and harming their brand. According to the research of Jalil (2019), operational efficiency has become a major determinant of customer satisfaction and loyalty in the e-commerce sector.

The digital economy has emerged as a key driver of national development in Malaysia. According to the Malaysia Digital Economy Blueprint (MyDIGITAL), the digital economy will contribute 25.5% of the nation's gross domestic product (GDP) by 2025 (Economic Planning Unit, 2021). The growth of online commerce has been an important component in this expansion. However, growing acceptance leads to increased competition, as businesses must differentiate themselves not only through product offerings but also through service

efficiency. Operational failures, for instance, poor return procedures, delayed deliveries or a lack of customer service may significantly decrease customer satisfaction and result in bad reviews, decreased loyalty and even a loss of market share. In the context of Malaysia e-commerce, operational efficiency is often cited as a key factor of customer satisfaction.

Hence, it is crucial to look at how operational efficiency shapes online buyer satisfaction in Malaysia's e-commerce environment. The aim of this study is to investigate how various aspects of operational efficiency, such as pricing, customer service, sustainability, refund management and delivery performance affect customer satisfaction. Business can create strategies that increase customer retention, improve service quality and boost competitiveness in the digital economy by understanding these relationships.

1.2 Research Problem

E-commerce in Malaysia has grown quickly, opening up new opportunities for both consumers and businesses. Enhancing customer satisfaction is a top priority for businesses because it is critical to improving consumer experience satisfaction (Abdella, R. A., & Indradewa, R., 2024). However, this expansion has also brought about challenges that directly affect online buyer satisfaction. Although online shopping is convenient, many customers continue to struggle with operational inefficiencies, for example, inaccurate order fulfilment, delayed deliveries, trouble returning items and unresponsive customer support. These problems not only impact customer experiences but also put online retailers' reputations at risk because unhappy customers frequently post about their bad experiences on social media and review sites.

Although companies try to attract consumers with aggressive pricing and promotions, operational efficiency is still a key factor in determining the probability of customers make additional purchases from them (Tang My, S., & Nguyen Quoc Anh., 2025). Customers may overlook small price differences, where online shopping is very price-sensitive, but they are unlikely to stick with platform that continuously falls short of their service delivery standards (Berends & Gerpott, 2023). This indicates that operational efficiency is essential to maintaining long-term customer happiness and loyalty rather than just serving as a support function (Julian et al., 2024).

Operational efficiency shapes consumer experiences in Malaysia's e-commerce environment are lacking because previous studies on online buyer satisfaction have frequently focused on website usability, trust and payment security (Pavlou, 2003). It is suitable to fill this gap given the government's emphasis on digital transformation under the Malaysia Digital Economy Blueprint (MyDIGITAL). This study intends to give businesses useful insights to improve operational strategies by investigating how factors, such as real-time tracking, sustainability, fulfilment accuracy, refund procedures, pricing and customer support affect customer satisfaction (Regina Emiliana & Efawati, 2025). Without these improvements, online retailers face the danger of losing their consumers to rivals who place a higher value on effectiveness and customer satisfaction.

Many previous studies examined consumer trust, security, website design, and online marketing strategies as predictors of satisfaction. However, fewer studies have explicitly looked at the direct effects of operational elements on customer satisfaction, for example, real-time tracking, refund procedures and sustainability practices. Moreover, the environments of Western or developed nations are frequently the basis of current research, which may not accurately represent the particular difficulties and demands of Malaysian consumers, especially in a highly competitive and quickly expanding digital market.

1.3 Research Objectives

This study's objective is to examine how operational efficiency (real-time tracking and transparency, sustainability, accurate order processing and fulfilment, return and refund management, competitive pricing, and responsive customer support) influences online buyer satisfaction in Malaysia's e-commerce industry.

1.3.1 General Objective

This research study's primary goal is to investigate the role of operational efficiency (real-time tracking and transparency, sustainability, accurate order processing and fulfilment, return and refund management, competitive pricing, and responsive customer support) in enhancing online buyer satisfaction.

1.3.2 Specific Objective

The study's particular goal is to examine the key dimensions (real-time tracking and transparency, sustainability, accurate order processing and fulfilment, return and refund management, competitive pricing, and responsive customer support) of operational efficiency.

1.3.3 Research Questions

The research questions of this study are given below:

1. Does real-time tracking and transparency affect the online buyer satisfaction?
2. Does sustainability affect the online buyer satisfaction?
3. Does return and refund management affect the online buyer satisfaction?
4. Does accurate order processing and order fulfilment affect the online buyer satisfaction?
5. Does competitive pricing affect online buyer satisfaction?
6. Does responsive customer support affect the online buyer satisfaction?

1.4 Significance of the Study

This study is important for both academic and practical perspectives. From the perspective of academia, the study fills a gap in the literature on e-commerce and consumer behaviour, adding to the depth of existing research. Although previous studies have mostly examined factors, for instance, website usability, online trust and payment security, not many investigations have looked into how operational efficiency directly affects online buyer satisfaction (Pavlou, 2003). This research provides tangible evidence to the theoretical understanding of consumer satisfaction in the digital economy by examining operational factors, such as delivery performance, refund procedures, pricing and sustainability (Rashid & Rasheed, 2024). Additionally, the study provides methodological value by showing how quantitative analysis can test the complex connections between buyer satisfaction and operational efficiency through the use of multiple regression models.

From the practical perspective, the findings of this study will be valuable to e-commerce businesses operating in Malaysia. Operating efficiency has emerged as an important differentiation in the strong rivalry between online platforms, such as Shopee, Lazada and TikTok Shop. Businesses can more effectively allocate resources to increase customer satisfaction and loyalty by using the research's findings to understand which operational components customers value most (Revindran et al., 2020). For example, businesses can prioritise investing in logistics and reverse supply chain systems if customers place a higher value on return policies and delivery accuracy than on competitive pricing.

Moreover, the study also has implications for policy. the MyDIGITAL Blueprint is one of the initiatives the Malaysian government has put in place to promote sustainable business practices and boost the digital economy. This research offers evidence that can assist politicians in developing regulations that raise the standard for service quality in the e-commerce sector by emphasising the crucial role of operational effectiveness and sustainability in determining customer satisfaction.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

The theoretical and empirical basis of the study are provided by the literature review. It investigates at earlier studies on online buyer satisfaction and operational efficiency, discovers gaps in the body of knowledge and develops the conceptual framework that directs this investigation. The chapter begins with a discussion of relevant concepts that are frequently used to understand customer satisfaction, for example, the Service Quality Model (SERVQUAL) and the Expectation-Confirmation Theory (ECT). The operational efficiency aspects of e-commerce are then covered, including competitive pricing, responsive customer service, order fulfilment accuracy, sustainability, real-time tracking and return and refund management. The concept of online buyer satisfaction is then examined in the review, along with its definitions, factors that influence it, and connections to operational efficiency. Key findings and gaps are highlighted by synthesising previous empirical studies, especially in the Malaysian context.

2.1 Underlying Theories

This study uses two main theory which are the SERVQUAL model and Expectation-Confirmation Theory (ECT). Together, they provide a strong basis for understanding how operational efficiency influences online buyer satisfaction.

2.1.1 Service Quality Model (SERVQUAL)

One of the most popular frameworks for assessing service quality and how it affects customer satisfaction is the SERVQUAL model, developed by Parasuraman in 1998. Retailers can improve customer service and gain a better understanding of customer expectations and perceptions by using SERVQUAL, a short multiple-item scale with strong reliability and validity. The instrument's design allows it to be used with a variety of services. It identifies five dimensions: tangibles, assurance, responsiveness, empathy, and dependability. In contrast to the other three industries, the banking sector places a higher value on tangibles and a lower value on responsiveness. Empathy is the least important factor in all four conditions. The original purpose of the model was to measure the difference between customer expectations and service performance perceptions along the five key dimensions. SERVQUAL works best when used regularly to track service quality trends and in conjunction with other techniques for measuring service quality. Although SERVQUAL was initially developed for standard service industries, it is now extensively utilized in the digital and e-commerce sectors. If a retailer uses SERVQUAL to identify the most crucial aspects of service quality for its target markets and to evaluate its strengths and weaknesses in comparison to the competition on these particular dimensions, it certainly will have a sense of what its priorities should be with regard to service quality. Reliability and responsiveness are particularly important in online shopping because they have a direct impact on operational efficiency. While reliability demonstrates how accurately orders are fulfilled, reliability is related to customer service and problem solving. By modifying SERVQUAL, this study highlights operational elements that are crucial to online buyer satisfaction, such as tracking, returns, and customer support.

2.1.2 Expectation-Confirmation Theory (ECT)

Oliver (1980) first proposed Expectation-Confirmation Theory (ECT), a popular framework for understanding post-purchase behaviour and customer satisfaction. According to the theory, the degree to which perceived performance either exceeds or meets initial expectations determines customer satisfaction. Expectation, perceived performance, confirmation or

disconfirmation, and satisfaction are the four main components of ECT. Expectations are a customer's pre-purchase assumptions about the performance of a good or service. Expectations in e-commerce frequently centre on prompt delivery, clear tracking, and dependable return procedures. The customer's assessment of the real service results following a purchase is known as perceived performance. For instance, perceived performance falls short of expectations if a product is damaged or arrives late. When perceived performance is contrasted with expectations, confirmation or disconfirmation takes place. Positive confirmation happens when performance surpasses expectations, which results in satisfaction. If it doesn't meet expectations, there will be negative disconfirmation and discontent. The result of this comparison is satisfaction, which affects loyalty and repurchase intentions. Therefore, whether or not expectations are met is directly impacted by operational efficiency. Bhattacharjee (2001) expanded the model to include information systems continuity, demonstrating that happy users are more likely to remain with a platform or system. This study uses ECT to explain why effective operations, for example, precise delivery and prompt assistance are powerful indicators of customer satisfaction.

2.2 Review of Variables

This section reviews the dependent and independent variables of the study. It highlights how operational efficiency dimensions (real-time tracking and transparency, sustainability, accurate order processing and order fulfilment, return and refund management, competitive pricing, and responsive customer support) relate to online buyer satisfaction in the e-commerce context.

2.2.1 Online Buyer Satisfaction

Online buyer satisfaction is the degree to which the demands of a consumer for an online purchase are met or exceeded by the actual quality of the product and the service delivered

through e-commerce platforms. Oliver (1980) defines satisfaction as an emotional state that arises from comparison pre-purchase expectations and post-purchase experiences, a notion consistent with Expectation-Confirmation Theory (ECT). In an online shopping context, satisfaction is influenced by multiple dimensions, for example, website accessibility, payment safety, product quality, delivery speed, return policies, and customer support (Anderson & Srinivasan, 2003).

Research has established that online buyer satisfaction is an important factor of customer loyalty and repeat purchasing. Satisfied customers are prefer to engage in positive word-of-mouth, provide favourable reviews, and continue purchasing from the same platform (Anderson & Srinivasan, 2003). Conversely, dissatisfaction often leads to cart abandonment, negative feedback, or migration to competing platforms. Importantly, in highly competitive e-commerce markets such as Malaysia, satisfaction is not only shaped by promotional offers but also by operational efficiency factors, including delivery timeliness, order accuracy, and refund procedures (Rashid & Rasheed, 2024).

2.2.2 Real-Time Tracking and Transparency

Real-time tracking provides customers with visibility over their orders, reducing uncertainty and improving trust. Transparency in logistics and communication ensures buyers are informed about delivery times and potential delays, which enhances reliability (Lim et al., 2018). In e-commerce, these practices are crucial as they address consumers' need for control and reassurance when physical inspection is impossible.

Research indicates that lack of transparency is often a source of dissatisfaction, as customers may feel anxious or perceive service providers as unreliable (Do et al., 2023). By contrast, transparent logistics practices, including proactive communication about order status and accurate estimated delivery times, strengthen buyer confidence and encourage repeat purchases. In competitive online markets, platforms that invest in advanced tracking systems and integrate them with customer communication channels gain a significant advantage.

Furthermore, transparency extends beyond tracking to include clear information about return policies, costs, and delivery options. By offering real-time visibility and honest communication,

e-commerce businesses can not only meet customer expectations but also differentiate themselves through operational efficiency and reliability.

2.2.3 Sustainability

Sustainability involves eco-friendly practices, for example, using recyclable packaging, energy-efficient deliveries, and reducing carbon footprints. Increasingly, consumers—especially younger generations—value businesses that align with environmental and social responsibility (White et al., 2019). Integrating sustainability into operations not only addresses global concerns but also improves consumer perceptions of trustworthiness and long-term value. According to White et al. (2019), environmentally responsible practices not only reflect corporate social responsibility but also enhance customer satisfaction by aligning with consumers' growing environmental awareness.

In the context of e-commerce, younger generations, particularly Millennials and Generation Z, increasingly expect businesses to adopt sustainable practices (Nguyen et al., 2020). Research indicates that customers are more inclined to support and remain with businesses that show a dedication to sustainability, even if those practices result in slightly higher expenses (Testa et al., 2016). This indicates that sustainability plays a role in long-term loyalty, brand differentiation and customer satisfaction.

In keeping with international trends and government initiative, for example the Malaysia Digital Economy Blueprint (MyDIGITAL), which promotes sustainable digital growth, sustainability is becoming increasingly important to Malaysian online shoppers. E-commerce platforms can meet customer expectations, lessen their impact on the environment, and gain a competitive edge in a market that is becoming more environmentally conscious by incorporating sustainability into their operations and logistics.

2.2.4 Accurate Order Processing and Order Fulfilment

Accurate order processing and fulfilment represent the backbone of operational efficiency in e-commerce. This dimension includes both the internal process of handling orders correctly, for instance, confirming item availability, processing payments accurately, and packaging the right products, also the external process of delivering them in the correct quantity, condition, and timeframe. Errors at either stage, such as incorrect items, mismanaged payments, or delayed deliveries, often result in customer dissatisfaction and complaints (Rao et al., 2011).

Research emphasizes that the accuracy of order processing and fulfilment is a fundamental determinant of customer satisfaction. Ramanathan (2011) found that reliability in fulfilment strongly correlates with repurchase intentions, while Luo and Ye (2019) demonstrated that processing and delivery accuracy significantly improve trust in online retailers. In e-commerce, where buyers cannot physically verify products before purchase, efficient and error-free processing followed by accurate delivery is critical for building confidence. In Malaysia's highly competitive online shopping market, platforms that consistently deliver the right products, processed without errors, gain a substantial advantage in fostering loyalty. Thus, accurate order processing and fulfilment form an essential element of operational efficiency that directly influences online buyer satisfaction.

2.2.5 Return and Refund Management

Return and refund management is an essential operational factor that significantly affects online buyer satisfaction. In e-commerce, where consumers cannot physically inspect products before purchase, the likelihood of returns is higher compared to traditional retail. A clear, flexible, and efficient return policy reduces buyer uncertainty, builds trust, and increases purchase intentions (Janakiraman et al., 2016). Conversely, complicated or restrictive return procedures often create frustration, deter repeat purchases, and damage customer loyalty.

In Malaysia, where competition among platforms, for example, Shopee, Lazada, and TikTok Shop is intense, return and refund management has become a differentiating factor. By offering

fast refunds, clear communication, and convenient return logistics, online retailers can build stronger customer confidence. Thus, effective return procedures support long-term loyalty, positive word-of-mouth, and immediate satisfaction.

2.2.6 Competitive Pricing

Competitive pricing is a key factor influencing consumer buying decisions in e-commerce, especially in markets where price sensitivity is high. It refers to the ability of online retailers to set prices that are attractive relative to competitors while maintaining profitability. Research suggests that while low pricing can initially attract customers, long-term satisfaction and loyalty depend on the balance between price and service quality (Kim et al., 2007). This means that competitive pricing must be accompanied by efficient operations such as reliable delivery and effective customer support to create a sustainable advantage.

In Malaysia's highly competitive e-commerce sector, platforms, for example Shopee, Lazada, and TikTok Shop frequently use promotions and discounts to attract buyers. However, sustained success requires more than aggressive pricing. By integrating competitive pricing with strong operational efficiency, online businesses can ensure both customer acquisition and long-term satisfaction.

2.2.7 Responsive Customer Support

Responsive customer support is a vital operational factor in e-commerce that directly influences online buyer satisfaction. It refers to the ability of an online retailer to address customer inquiries, complaints, and issues promptly and effectively. Holloway and Beatty (2003) highlighted that responsiveness in service recovery is critical to restoring customer trust and mitigating dissatisfaction caused by operational failures such as delayed deliveries or

incorrect orders. In the online retail environment, where face-to-face interactions are absent, customer support often becomes the primary channel for building consumer confidence.

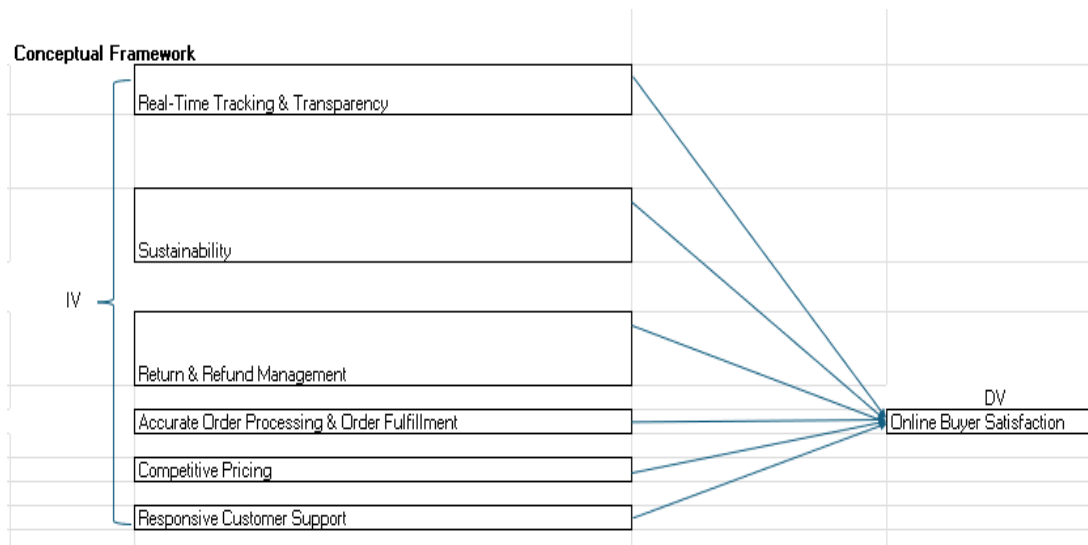
With the broaden choice of digital platforms, customer support is delivered through multiple channels, for example, live chat, email, call centres, and increasingly through AI-driven chatbots. Studies show that rapid and helpful responses enhance buyer satisfaction and positively affect loyalty intentions (Ladhari, 2009). Conversely, slow or unhelpful support can amplify dissatisfaction and lead to negative word-of-mouth.

In Malaysia, where competition among e-commerce platforms is intense, responsive customer support serves as a key differentiator. For instance, platforms such as Shopee and Lazada have invested in multi-channel support systems to improve customer experience. By ensuring quick resolution of issues and offering personalized assistance, e-commerce businesses can strengthen trust, enhance satisfaction, and encourage repeat purchases.

2.3 Conceptual Framework

This study's conceptual framework was created to illustrate the connection between operational efficiency and online customer satisfaction in Malaysia's e-commerce industry. The figure below shows framework identifies six key dimensions of operational efficiency which are real-time tracking and transparency, sustainability in logistics and operations, accurate order fulfilment, return and refund management, competitive pricing, and responsive customer support. The goals of the study and the inquiries in Chapter 1 serves as the foundation for this conceptual framework.

Figure 2.1 Conceptual Framework of the Research



Source: Developed for this research

2.4 Hypotheses Development

This section develops hypotheses linking operational efficiency dimensions (real-time tracking and transparency, sustainability, accurate order processing and fulfilment, return and refund management, competitive pricing, and responsive customer support) to online buyer satisfaction.

2.4.1 Real-time Tracking and Transparency and Online Buyer Satisfaction

Real-time tracking and transparency are important elements of operational efficiency in the e-commerce industry. They give customers access to information about their orders, for example, shipment status updates, estimated delivery times, and notifications of late delivery. According to research, consumers are more satisfied when they have clear information because they feel less uncertain and more in control (Lim et al., 2018). Transparency also helps to build trust

because customers view open communication from retailers as a sign of reliability and honesty. On the other hand, customers may become anxious and perceive the company as disorganised when they do not receive updates, even if the delivery arrives on time. According to Do et al. (2023), customers prefer retailers who consistently communicate order status, and transparency in logistics not only increases customer satisfaction but also improves customer loyalty. Additionally, real-time order tracking increases customer satisfaction and fosters brand loyalty (Dwivedi, M., & Dey, G., 2025). This aspect is particularly crucial in Malaysia, where online shoppers expect dependable and quick updates from platforms such as Shopee and Lazada. Thus, it is proposed that:

H1: There is a relationship between real-time tracking and transparency and online buyer satisfaction.

2.4.2 Sustainability and Online Buyer Satisfaction

Sustainability in operations and logistics has grown from an optional tactic to a demand from customers, especially in the e-commerce industry. It is becoming a more significant factor in many business-related areas (Choi, D, et al., 2019). Sustainability involves environmentally friendly methods, for instance, using recyclable packaging, optimizing delivery routes to minimize emissions, and adopting responsible sourcing practices. Research indicates that when evaluating overall satisfaction with online platforms, consumers, especially Millennials and Generation Z will place a growing emphasis on sustainability (White et al., 2019). Furthermore, Testa et al. (2020) claim that companies that implement green initiatives enhance their brand reputation and boost customer loyalty, even if these initiatives come at a slightly higher cost. Customers can choose an eco-friendly method of product delivery. Additionally, Choi (2019) also concluded that a sustainable e-commerce environment benefits not only the sustainability of online businesses but also policy-making and environmental protection because businesses generate economic value and prevent labour unrest.

The Malaysian government's focus on digital and sustainable growth through the MyDIGITAL blueprint emphasizes how crucial it is to match environmental values with operational strategies (Economic Planning Unit, 2021). In addition to increase user satisfaction,

sustainability sets platforms apart in an extremely competitive marketplace. Failure to implement sustainable practices may risk alienating environmentally conscious buyers, who are more likely to switch to platforms that prioritize eco-friendly operations. Hence, this study hypothesizes that:

H2: There is a relationship between sustainability and online buyer satisfaction.

2.4.3 Accurate Order Processing and Fulfilment and Online Buyer Satisfaction

Accurate order processing and fulfilment are essential operational elements that directly influence the customer's post-purchase experience. Order fulfilment involves the complete process from the time of purchase inquiry until the product is delivered to the customer who placed the order (Heuwinkel, M., 2022). Whereas fulfilment focuses on delivering the exact product in the right condition within the promised timeframe, order processing makes sure that transactions, payments and product selections are handled correctly before the product leaves the seller. According to research, one of the main reasons for e-commerce dissatisfaction is mistakes made at any stage, for example choosing the wrong product, making inconsistent payments and shipping the wrong items (Rao et al., 2011).

The significance of accuracy in both stages is highlighted by empirical data. While Luo and Ye (2019) demonstrated that order accuracy considerably boosts satisfaction and repurchase intentions, Ramanathan (2011) confirmed that dependable processing and fulfilment improve service quality perceptions and customer trust. Accurately managing processing and fulfilment is essential to keep customers in Malaysia's competitive e-commerce market, where consumers frequently compare platforms, for example, Shopee, Lazada, and TikTok Shop. Consumers are preferring to stick with a platform that regularly delivers the correct products on time and reduces processing errors. Therefore, accurate order processing and fulfilment are expected to play a decisive role in determining online buyer satisfaction.

H3: There is a relationship between accurate order processing and order fulfilment and online buyer satisfaction.

2.4.4 Return and Refund Management and Online Buyer Satisfaction

Return and refund management is an operational element that significantly influences post-purchase experiences. Online shopping is more risky than traditional retail because consumers are unable to inspect items before making a purchase. A flexible and transparent return policy provides reassurance, reduces perceived risk, and builds trust (Janakiraman et al., 2016). Gelbrich et al. (2017) showed that even when initial transactions do not go as planned, simple return procedures reduce discontent and fosters feelings of justice. Lim et al. (2018) discovered that effective return and refund policies boost customer satisfaction and promote repurchases in Southeast Asia, especially in areas where internet trust is still growing. Return and refund management is crucial to keeping customers in Malaysia due to high competition from different platforms, for example, Shopee, Lazada and TikTok Shop. Customers are more likely to stick with retailers who solve problems quickly and honestly. According to the research, customers become dissatisfied when the product they wish to purchase does not match what they see online or when the product information is incorrect (Öztürk, R., & Dündar, A. O., 2020). When their expectations cannot be fulfilled, customers want to return the goods they bought. On the other hand, inadequate refund policies frequently attract customers toward competing businesses. Therefore, it is expected that online buyer satisfaction will be directly impacted by return and refund management. According to these arguments, the hypothesis is:

H4: There is a relationship between return and refund management and online buyer satisfaction.

2.4.5 Competitive Pricing and Online Buyer Satisfaction

Competitive pricing is a well-known factor influencing consumer decisions in e-commerce. Although sales and discounts may attract customers at first, long-term satisfaction depends on how well prices match overall service quality. Zhao et al. (2021) stated that a satisfied customer will prefer to make repeat purchases if they feel that the value of the goods and services matches up with the prices. According to Kim et al. (2007), if operational effectiveness and service

delivery are consistently dependable, customers are willing to overlook minor price differences. Additionally, Saplina et al. (2020) discovered that when loyal customers perceive better service quality, their price tolerance increases. E-commerce sites regularly participate in price wars through flash sales, coupons, and free shipping offers in fiercely competitive markets including Malaysia.

However, price advantages by one another cannot guarantee customer satisfaction or loyalty in the absence of strong operational efficiency, for example, prompt delivery and precise fulfilment. Additionally, Kusdiantoro and Suci (2023) emphasize that although price affects repurchase, operational dependability is still just as important in determining customer satisfaction. This suggests that service excellence and competitive pricing should be taken into account. Therefore, it is hypothesized that:

H5: There is a relationship between competitive pricing and online buyer satisfaction.

2.4.6 Responsive Customer Support and Online Buyer Satisfaction

Responsive customer support is a critical component of e-commerce service recovery. Support channels, such as live chat, email, or call centres become essential when problems arise because buyers and sellers cannot communicate directly. According to Holloway and Beatty (2003), immediate problem-solving greatly improves customer satisfaction and reduces unfavourable experiences. Additionally, Ladhari (2009) proved that responsiveness increases customer loyalty by demonstrating the company's appreciation for its customers. Operational mistakes in e-commerce, for instance, incorrect items or delayed deliveries, are frequently unavoidable. Nevertheless, timely and supportive customer service can make up for these mistakes and win back customers' trust. Platforms such as Shopee and Lazada make significant investments in multi-channel support systems in Malaysia in order to keep their market share. Despite minor problems with operations, customers who receive quick resolutions of issues are more likely to express greater satisfaction and stay loyal. Thus, fast customer service protects long-term client relationships in addition to increasing immediate satisfaction. Based on these arguments, the hypothesis is proposed as:

H6: There is a relationship between responsive customer support and online buyer satisfaction.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This chapter explains the research methodology that will be used to investigate the role of operational efficiency in enhancing online buyer satisfaction. The research methodology covers, for example, sampling design, data collection methods, research design and proposed data analysis tool is essential in making sure the validity and trustworthiness of research results.

3.1 Research Design

The collection of techniques and approaches which has selected and used to carry out the investigation is known as the research design. The study design has made it possible for researchers to concentrate on the most productive studies. Both a survey and a quantitative research approach are used in the study. The process of using numerical values obtained from observations to describe and explain phenomena that the observations can reflect on is known as quantitative research (Taherdoost, H., 2022). A quantitative approach is suitable for this study because it enables the measurement of relationships between operational efficiency dimension, such as real-time tracking and transparency, sustainability, return and refund management, accurate order processing and fulfilment, competitive pricing and responsive customer support and also online buyer satisfaction. Structured questionnaires were used to gather data from Malaysian online customers through social media platforms, for instance, Facebook, Whatsapp and Instagram.

3.1.1 Descriptive Research

The researcher utilizes descriptive research as a method to characterize the specific features of the population or phenomenon. According to Grimes and Schulz (2002), a descriptive study is limited to describe the current distribution of variables and qualifying any causal or other hypotheses. Therefore, descriptive research comprises examining correlations between 2 or more variables or using observations to identify features of a specific occurrence. In addition, descriptive research is usually defined as fundamental research techniques that include some methods, for example, surveys, case studies, and observations so that the results can always be ensured to a more valid and reliable. Descriptive research also offers data that helps resolve neighbourhood problems as it offers useful information since the survey can be quantitative or qualitative or even verbal or nonverbally.

For this research, descriptive research will be used to provide insights into the relationships between the changes in online consumer satisfaction affected by the role of operational efficiency made by the business owners. The use of descriptive research is particularly suitable for this study to identify the relationship between operational efficiency dimensions, for example, real-time tracking and transparency, sustainability, order fulfilment and order accuracy, return and refund processes, competitive and customer support and online buyer satisfaction. These relationships can be effectively captured through descriptive methods, which allows the researcher to collect efficient data and summarize it in a meaningful way.

3.2 Sampling Design

This section is an overview of the target population, sampling techniques, and also sample size which were used in this study.

3.2.1 Target Population

The research population consists of online buyers in Malaysia. This group was selected because they represent the primary stakeholders in the e-commerce ecosystem and are directly impacted by operational efficiency factors, for instance, delivery timeliness, order accuracy, return and refund processes and customer support services. Malaysia e-commerce market has expanded significantly, with platforms, for example, Shopee, Lazada and TikTok Shop becoming dominant players in recent years. Consumers are increasingly shifting towards online shopping for convenience, competitive pricing and accessibility which making operational efficiency a critical determinant of satisfaction.

The selection of Malaysian online buyers as the population is also justified by the rapid digitalization of commerce in the study. The Malaysia Digital Economy Blueprint (MyDIGITAL) highlights that digital trade is expected to contribute substantially to national GDP, underscoring the importance of consumer experience in sustaining this growth (Economic Planning Unit, 2021). People who have recently engaged in e-commerce transactions must be included in the population since the study examines buyer satisfaction and they can offer pertinent and accurate feedback on their experiences with online platforms.

3.2.2 Sampling Techniques

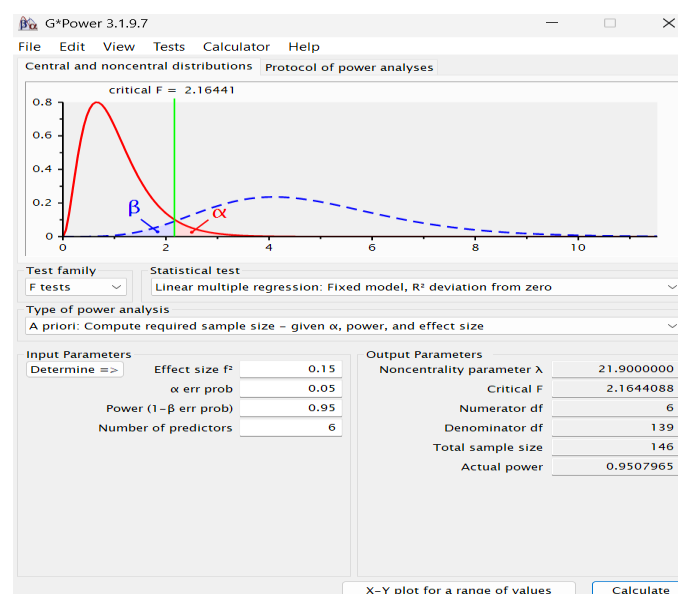
Convenience sampling was used in this study to gather information from online customers. This method chooses participants from the target population based on accessibility (Golzar et al., 2022). Convenience sampling was selected because it makes possible to collect data from respondents who are willing and able to participate in a timely manner. Convenience sampling enables data to be collected efficiently from respondents who are willing and able to take part in the study. This method is widely accepted in academic research, especially in consumer behaviour and e-commerce studies, which access to larger, random samples may be more difficult. Given the time and resource constraints of this research, this approach was practical and effective for gathering enough responses. Although convenience sampling has limitations,

for example, potential sampling bias and limited representativeness of the population, it was considered the most appropriate method given the scope of this project. Convenience sampling is commonly used in consumer behaviour and e-commerce studies, as it enables researchers to access diverse participants through online platforms at relatively low cost (Sekaran & Bougie, 2019). In this study, convenience sampling techniques is used because it offers a practical and efficient means of collecting data from Malaysian online buyers within the constraints of time, cost, and accessibility.

3.2.3 Sample Size

In quantitative research, choosing the appropriate sample size is important. The sample size is the percentage or subset of a population required to ensure that there is sufficient data to generalize the research's findings (Rahman, 2023). The sample size required for this study is determined using the G*power method. According to Rahman (2023), G*power is ranks as among the most popular techniques for figuring out the sample size. In social science or business research, it was advised to use 95 percent confidence levels with a 5% margin of error (Taherdoost, 2017).

Figure 3.1 Calculation using G*Power



Adapted from: Faul et al., (2009). Building Multiple Regression Models Interactively.

The smallest sample size that can be used is 146 with a 5% margin of error and a 95% confidence level. However, 200–500 sample sizes are a good range needed for covariance analysis, multiple regression analysis, or log-linear analysis (Israel, G. D., 1992). This is due to the fact that it can produce more accurate and precise results. Thus, 200 surveys were sent to Malaysian online shoppers in order to find out how operational efficiency affected their level of satisfaction.

3.3 Data Collection Method

This study used Google Forms to distribute a structured questionnaire for primary data collection. Online surveys were selected as the main way of gathering data because their accessibility, efficiency and can reach a wide pool of respondents across different geographic regions in Malaysia. With the rapid growth of digital adoption, online platforms such as Google Forms have become widely accepted for academic research as they allow convenient participation and instant data recording. For this research, Google Form provided easy access to a diverse pool of respondents across Malaysia. Links were shared through WhatsApp, Facebook, Instagram and email, reaching participants from different age groups, educational backgrounds and income levels. Moreover, with a final sample size of approximately 200 respondents, the data collected is sufficient for hypothesis testing using statistical analysis, making this technique suitable for the objectives of the study.

3.4 Research Instrument

According to Roberts and Stone (2003), a research instrument is a tool that is used to collect data regarding the concept of an attribute of interest. There are various types of research instruments such as interviews, questionnaires, experiments and more. This study used a structured questionnaire with items that were modified and taken from earlier research.

Questionnaires can be used repeatedly to measure differences between groups of people using research instruments (Birmingham, 2003).

3.4.1 Questionnaire Design

The information gathering process began with the development of a well-organised questionnaire that was split into two sections. Section A recorded demographic data, for example, gender, age, education level and income level, along with online shopping frequency. Section B measured both independent variables and dependent variables, including real-time tracking and transparency, sustainability, accurate order fulfilment, return and refund management, competitive pricing, responsive customer support and online buyer satisfaction. A five-point Likert scale with 1 denoting ‘Strongly Disagree’ and 5 denoting ‘Strongly Agree’, was used to rate each question in Section B. This scale was chosen because it is simple and useful in behavioural research also effective for capturing attitudes and perceptions.

Table 3.1 Number of Items in Questionnaire

Questionnaires	Number of Items
Demographic Information	6
Real- Time Tracking and Transparency (IV)	9
Sustainability (IV)	9
Return and Refund Management (IV)	9
Accurate Order Processing and Order Fulfilment (IV)	7
Competitive Pricing (IV)	5
Responsive Customer Support (IV)	10
Online Buyer Satisfaction (DV)	8

Source: Developed for this research

3.5 Construct Measurement

This section is an outline of the constructs' origin that was used in this study as well as the scale of measurements.

3.5.1 Origin of Constructs

Table 3.2 shows the sources of the construct measurements that were used for this study. The completed development questionnaire for this research was shown in Appendix A, where this study was using structured questions.

Table 3.2 Variables and Their Sources

Variables	Sources
Real-Time Tracking and Transparency	Vrhovac, Vijoleta, et al. (2023)
Sustainability	Jou, Yung-Tsan, et al. (2024)
Accurate Order Processing and Order Fulfilment	Ngo, Thi Thuy An, et al. (2025)
Return and Refund Management	Duarte, Paulo, et al. (2018)
Competitive Pricing	Theng Tong Sern, and Ananthalakshmi Mahadevan (2019)
Responsive Customer Support	Phau, Ian, and Graham Ferguson (2013)
Online Buyer Satisfaction	Vesel, Patrick, and Vesna Zabkar (2009)

Source: Developed for this research

3.6 Data Analysis Methods

According to Carlton and Brandt (2000), data analysis is the systematic method of using statistical or logical methods to characterize, illustrate, summarize and assess data. In research, it involves selecting suitable statistical tools to test hypotheses, identify relationships between variables, and draw meaningful conclusions. According to Hair et al. (2019), data analysis uses descriptive and inferential techniques, for instance, regression, correlation, ANOVA and t-test to turn raw data into insights. In addition to support decision-making, data analysis helps in testing hypotheses and determining the relationship between independent and dependent variables.

3.6.1 Multiple Linear Regression Model

A statistical method for examining the relationship between one dependent variable and 2 or more independent variables is multiple linear regression analysis. It is widely recognized as one of the most robust tools in social science research because it estimates the strength, direction, and significance of relationships while controlling for other variables (Cohen et al., 1988).

The importance of multiple regression lies in its ability to identify which independent variables significantly explain variation in the dependent variable, while controlling for the effects of other predictors. This reduces omitted-variable bias and enhances the accuracy of findings (Cramer, 2003). Moreover, multiple regression enables researchers to test complex models by incorporating mediators and moderators, thereby revealing indirect and conditional effects (George & Mallery, n.d.). It also generates predictive insights, which are particularly useful for decision-making in organizational and management contexts. Without robust regression analysis, research risks being subjective and lacking statistical generalizability (Sekaran & Bougie, 2016).

Figure 3.2 Multiple Linear Regression Model

$$y = b_0 + b_1x_1 + \dots + b_px_p + e,$$

Adapted from: Henderson and Velleman (1981). Building Multiple Regression Models Interactively.

where

y = dependent variable

b_0 = y-intercept

b_1x_1 = the regression coefficient (B_1) of the first independent variable (X_1)

e = model error

Figure 3.3 Multiple Linear Regression Equation

$\text{OBS} = b_0 + b_1 (\text{RTT}) + b_2 (\text{S}) + b_3 (\text{RRM}) + b_4 (\text{APF}) + b_5 (\text{CP}) + b_6 (\text{RCS}) + e$

Source: Developed for this research

Figure 3.3 shows the new multiple linear regression equation for this study where OBS is the online buyer satisfaction, the dependent variable for this study. Real-time Tracking and Transparency (RTT), Sustainability (S), Return and Refund Management (RMM), Accurate Order Processing and Order Fulfilment (APF), Competitive Pricing (CP) and Responsive Customer Service (RCS) are the independent variables for this study.

3.7 Reliability and Validity Tests

Several validity and reliability tests were carried out to guarantee the accuracy and consistency of the constructs measured in this research. Validity evaluates whether the constructs appropriately reflect the theoretical concepts they are meant to measure, while reliability refers

to the internal consistency of the measurement items (Hair et al., 2019). To ensure the validity and reliability of the research, a pilot test is carried out before the collection of the data.

3.7.1 Pilot Test

Table 3.3 Reliability Test Analysis

Variables	Number of Items	Cronbach's Alpha
Real-Time Tracking & Transparency (RTT)	9	0.957
Sustainability (S)	9	0.935
Accurate Order Processing & Order Fulfilment (APF)	9	0.950
Return & Refund Management (RRM)	7	0.929
Competitive Pricing (CP)	5	0.964
Responsive Customer Support (RCS)	10	0.955
Online Buyer Satisfaction (OBS)	8	0.948

Source: Developed for this research.

According to Table 3.3, the pilot test results obtained from 30 respondents indicate that all variables in this study achieved high internal consistency. When the Cronbach's Alpha value is greater than 0.7, the results showed that real-time tracking and transparency, sustainability, accurate order processing and fulfilment, return and refund management, competitive pricing, responsive customer support, and online buyer satisfaction are all consistent. According to previous study, Cronbach's Alpha should fall between 0.70 and 0.95.

3.8 Ethical Considerations

In order to protect participants' rights and maintain the study's integrity, ethical considerations are essential. This study complied to both Malaysia's Personal Data Protection Act (PDPA) 2010 and the ethical standards of Universiti Tunku Abdul Rahman (UTAR).

An informed consent statement was given to respondents prior to their participation in the Google Form survey. The statement outlined the study's objectives, the voluntary nature of participation, the estimated time needed to finish the survey and guarantees of confidentiality. Before beginning the questionnaire, respondents had to acknowledge their consent. In addition, they were made aware of their freedom to leave the study at any time and without consequence.

To ensure respondent anonymity, the survey did not collect personally identifiable information, for example, names, phone numbers or email addresses. Data collected was safely stored in password-protected files and used only for academic purposes. The raw data was only accessible by the researcher, and it will be removed in accordance with data retention guidelines once the project is finished.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

This chapter consists of discussions about the data collected for this study. The information collected will be examined to clarify how operational effectiveness contributes to increased online customer satisfaction. The outcomes of this study are analysed using both descriptive and inferential analysis. This chapter will also include an overview of hypothesis testing.

4.1 Descriptive Analysis

To interpret and explain the demographic profile of the respondents as well as some general data regarding their knowledge and use of virtual tourism, descriptive analysis was used in this research. This descriptive analysis section also explains the summary of the variables' descriptive statistics.

4.1.1 Demographic Profile

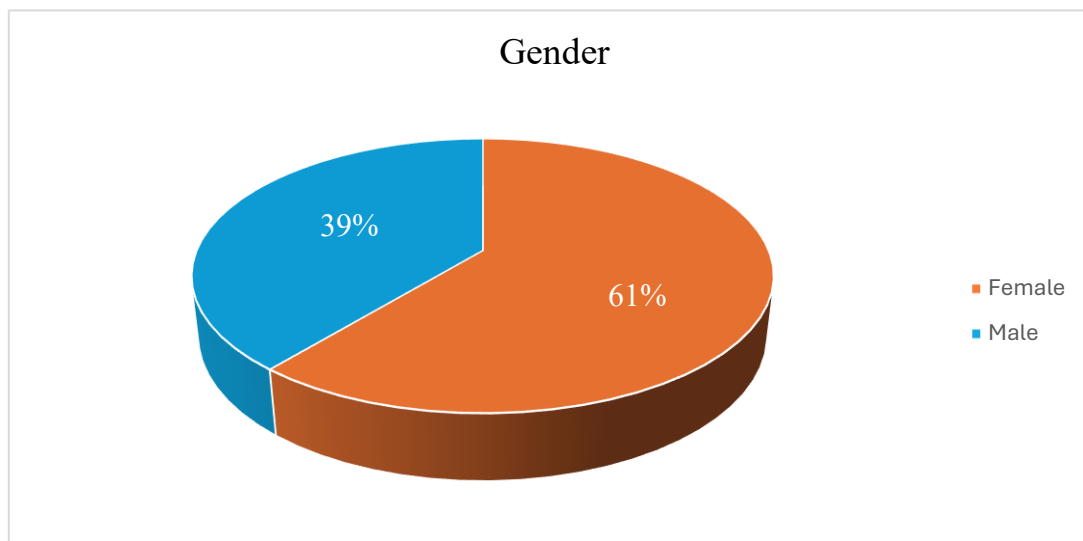
For this study, 200 responses have been collected from the participants. The demographic profile of the respondents, including gender, age, education level, employment status, income level, and frequency of online purchases, is summarized in Tables 4.1 to 4.6 and Figures 4.1 to 4.6.

Table 4.1 Respondents' Gender

Variables	Demographic	Frequency	Percentage (%)
Gender	Male	78	39
	Female	122	61
Total		200	100

Source: Developed for this research.

Figure 4.1 Respondents' Gender



Source: Developed for this research.

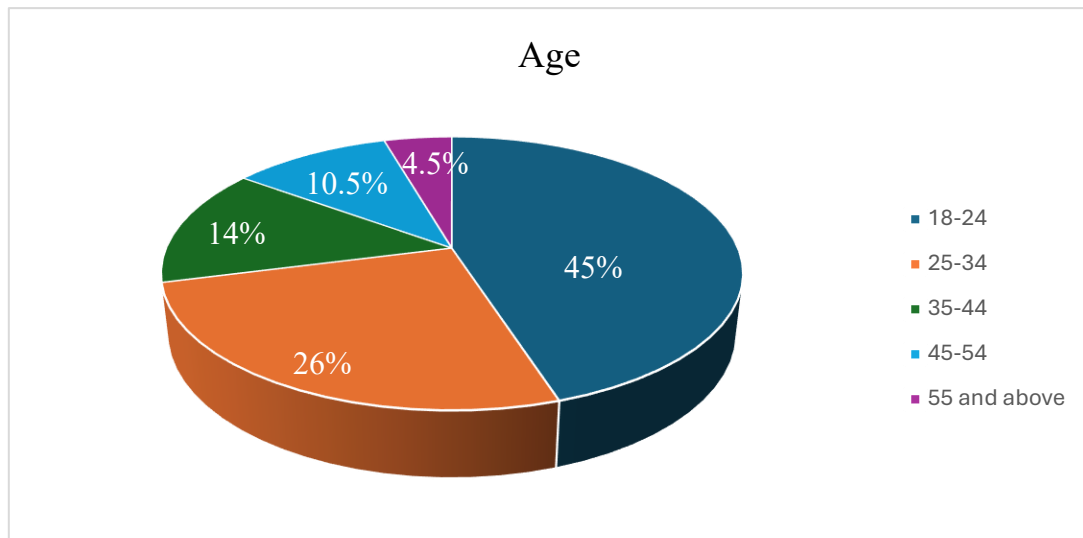
Table 4.1 and Figure 4.1 show that the majority of the respondents are female, with 61% (122 respondents) and 39% (78 respondents) being male.

Table 4.2 Respondents' Age

Variables	Demographic	Frequency	Percentage (%)
Age	18-24	90	45
	25-34	52	26
	35-44	28	14
	45-54	21	10.5
	55 and above	9	4.5
Total		200	100

Source: Developed for this research.

Figure 4.2 Respondents' Age



Source: Developed for this research.

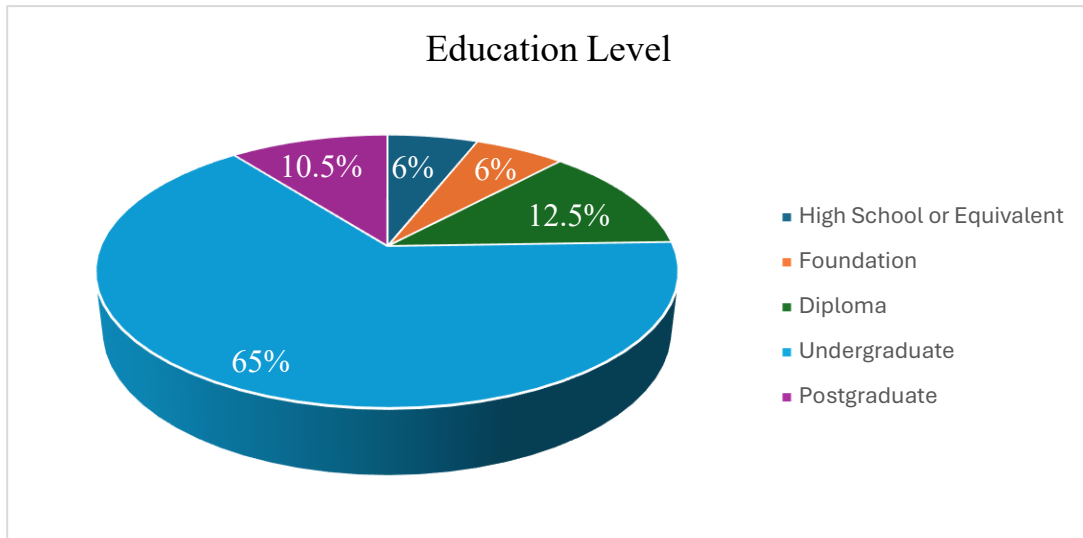
Table 4.2 and Figure 4.2 present the data for the age group. From the respondents, 90 (45%) were between the ages of 18 and 24, and 52 (26%) were between the ages of 25 and 34. Additionally, 28 respondents or 14% of the 200 respondents, were between the ages of 35 and 44, and 21 respondents, or 10.5% of the total, were between the ages of 45 and 54. With a frequency of 9 respondents (4.5%), those 55 years of age and older comprised the least number of participants in this study.

Table 4.3 Respondents' Education Level

Variables	Demographic	Frequency	Percentage (%)
Education Level	High School or Equivalent	12	6
	Foundation	12	6
	Diploma	25	12.5
	Undergraduate	130	65
	Postgraduate	21	10.5
Total		200	100

Source: Developed for this research.

Figure 4.3 Respondents' Education Level



Source: Developed for this research.

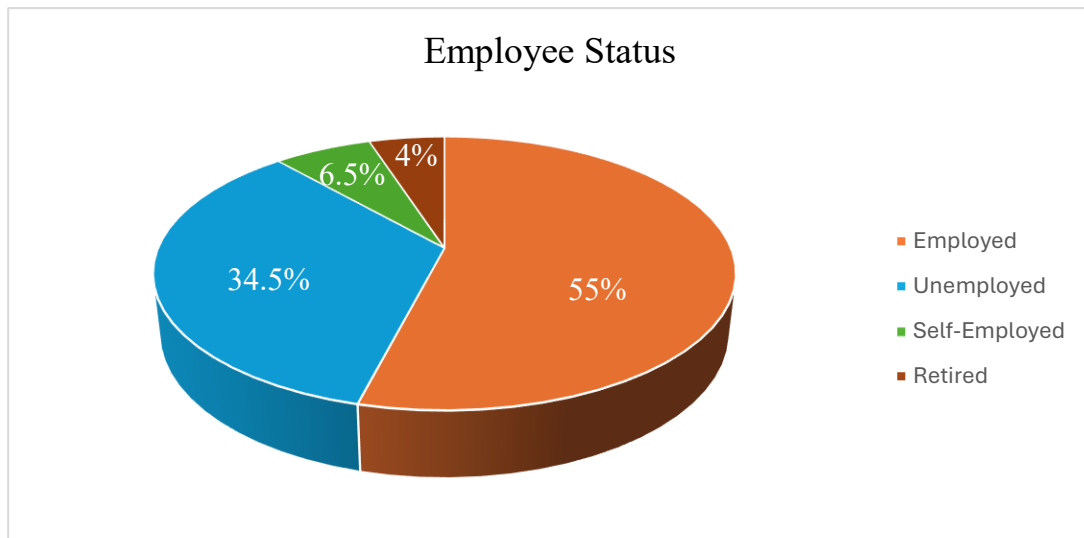
Data regarding respondents' levels of education is displayed in Table 4.3 and Figure 4.3. 130 respondents (65%) had undergraduate degrees, while 25 respondents (12.5%) had completed their education up to the diploma level. Additionally, the frequency of 12 (6%) respondents is the same for both foundation and high school or equivalent. Additionally, postgraduate has the frequency of 21 responders (10.5%).

Table 4.4 Respondents' Employee Status

Variables	Demographic	Frequency	Percentage (%)
Employee Status	Employed	110	55
	Unemployed	69	34.5
	Self-Employed	13	6.5
	Retired	8	4
Total		200	100

Source: Developed for this research.

Figure 4.4 Respondents' Employee Status



Source: Developed for this research.

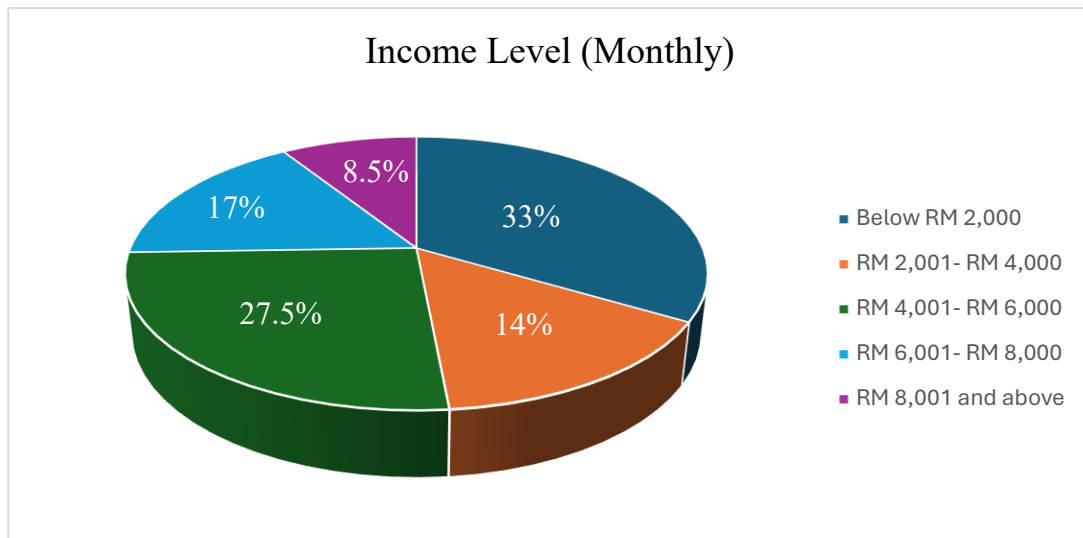
Table 4.4 and Figure 4.4 present the data regarding the employee status, with 110 (55%) of the respondents being employed and 69 (34.5%) being unemployed. Additionally, 13 respondents, or 6.5% of the sample, were self-employed, and 8 respondents, or 4% of the sample, were retired.

Table 4.5 Respondents' Income Level (Monthly)

Variables	Demographic	Frequency	Percentage (%)
Income Level	Below RM 2,000	66	33
	RM 2,001- RM 4,000	28	14
	RM 4,001- RM 6,000	55	27.5
	RM 6, 001- RM 8,000	34	17
	RM 8,001 and above	17	8.5
Total		200	100

Source: Developed for this research.

Figure 4.5 Respondents' Income Level (Monthly)



Source: Developed for this research.

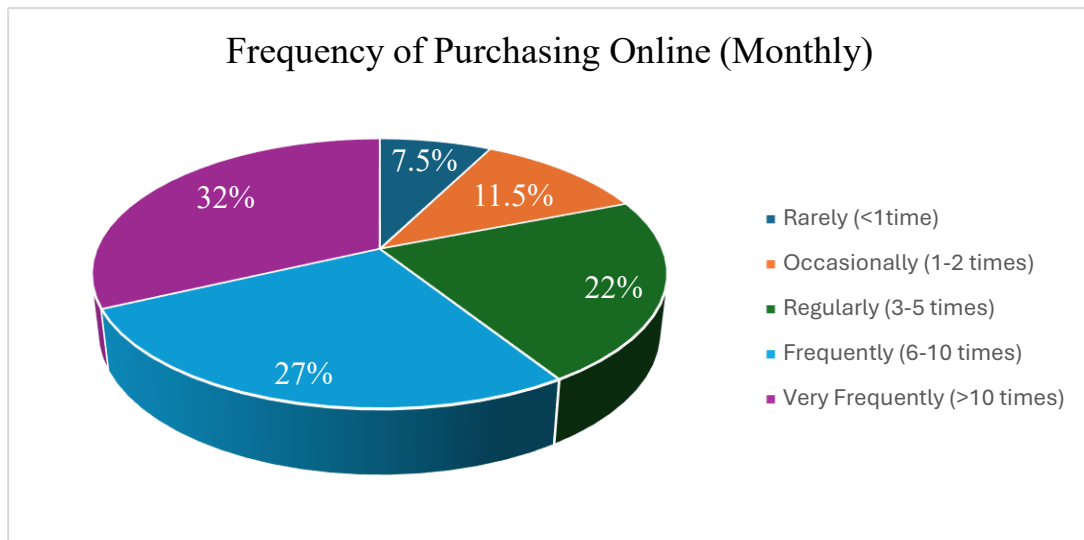
The income level of the respondents is displayed in Table 4.5 and Figure 4.5, where the majority of respondents, 66 respondents (33%), had incomes below RM 2,000. Additionally, 28 respondents (14%) and 55 respondents (27.5%) fall into the RM 2,001–RM 4,000 and RM 4,001–RM 6,000 income level categories, respectively. Aside from that, 34 respondents, or 17% of the sample, have an income between RM 6,001 and RM 8,000. Furthermore, only 17 respondents, or 8.5% of the total, reported having an income level above RM 8,000.

Table 4.6 Respondents' Frequency of Purchasing Online (Monthly)

Variables	Demographic	Frequency	Percentage (%)
Frequency of Purchasing Online	Rarely (< 1 time)	15	7.5
	Occasionally (1-2 times)	23	11.5
	Regularly (3-5 times)	44	22
	Frequently (6-10 times)	54	27
	Very Frequently (>10 times)	64	32
Total		200	100

Source: Developed for this research.

Figure 4.6 Respondents' Online Purchase Frequency (Monthly)



Source: Developed for this research.

The frequency of online purchases made by the respondents is displayed in Table 4.6 and Figure 4.6, with the majority of respondents reporting "very frequently," accounting for 32% of the total and 64 respondents. Additionally, 54 respondents (27%) mentioned shopping online "frequently," while 44 respondents (22%) reported shopping online "regularly." Aside from that, 23 respondents, or 11.5% of the sample, reported using the frequency "occasionally." Last but not least, 15 respondents, or 7.5% of the total, had a frequency of "rarely."

4.1.2 Descriptive Statistics

Table 4.7 Summary of Descriptive Statistics

Variables	Mean	Standard Deviation
Real-Time Tracking & Transparency (RTT)	3.5628	1.5143
Sustainability (S)	3.6050	1.5499
Accurate Order Processing & Order Fulfilment (APF)	3.5722	1.5210
Return & Refund Management (RRM)	3.4850	1.5309
Competitive Pricing (CP)	3.0730	1.4169
Responsive Customer Support (RCS)	3.5530	1.4936

Online Buyer Satisfaction (OBS)	3.5400	1.5260
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Source: Developed for this research.

The study's descriptive statistics were shown in Table 4.7. According to the results, sustainability (S) has the highest mean, which is 3.6050, with the majority of respondents choosing to agree with the statements under S, while competitive pricing (CP) has the lowest mean which is 3.0730, with the majority of respondents disagreeing with the statements under CP. In addition, the results showed that sustainability (S) has the highest standard deviation of all the variables with the result of 1.5499, indicating that the data collected are far from the mean, while competitive pricing (CP) has the lowest standard deviation of 1.4169, indicating that the data collected are near to the mean.

4.2 Inferential Analysis

The results of the responses received on the independent and dependent variables were interpreted and discussed in this study using inferential analysis. Multiple regression analysis and Pearson's correlation coefficient analysis were included in this section on inferential analysis.

4.2.1 Pearson's Correlation Coefficients Analysis

Table 4.8 Pearson's Correlation Coefficients

Constructs	Online Buyer Satisfaction	
	r	p-value
Real-Time Tracking & Transparency (RTT)	0.631**	< 0.001
Sustainability (S)	0.352**	< 0.001
Accurate Order Processing & Order Fulfilment (APF)	0.891**	< 0.001
Return & Refund Management (RRM)	0.187**	<0.001

Competitive Pricing (CP)	0.551**	<0.001
Responsive Customer Support (RCS)	0.774**	<0.001

** Correlation is significant at the 0.01 level (2-tailed)

Source: Developed for this research.

The Pearson's correlation coefficients for this study are presented in Table 4.8. The findings show that the independent variables, sustainability (S) and return and refund management (RRM), have a weak positive correlation with the dependent variable, online buyer satisfaction (OBS), with correlation values of 0.187 and 0.352. Additionally, the results showed that the independent variables (CP and RTT) and OBS had a slightly higher correlation, with correlation values of 0.551 and 0.631 accordingly. Additionally, the independent variables (RCS and APF) have a strong positive correlation with OBS, with correlation values of 0.774 and 0.891, respectively. Meanwhile, since all of the correlations are significant at the 0.01 level (2-tailed) and the constructs' p-values are below the significant level, it can be assumed that the correlations exist in the population.

4.2.2 Multiple Regressions Analysis

Table 4.9 Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.895 ^a	0.801	0.794	0.33760

a. Predictors: (Constant), RTT, S, APF, RRM, CP, RCS

Source: Developed for this research.

The multiple regression analysis model summary for this study is demonstrated in Table 4.9. The R-value was 0.895, the R Square was 0.801, the Adjusted R Square was 0.794, and the Standard Error of Estimate was 0.33760. The R Square value is 0.801, meaning that variations in real-time tracking (RTT), sustainability (S), accurate order processing and fulfilment (APF), return and refund management (RRM), competitive pricing (CP), and responsive customer support (RCS) account for 80.1% of the variation in online buyer satisfaction (OBS). Considering the number of independent variables and sample size, the study's adjusted R

Square value of 0.794 shows that variations in real-time tracking (RTT), sustainability (S), accurate order processing and order fulfilment (APF), return and refund management (RRM), competitive pricing (CP), and responsive customer support (RCS) account for 79.40% of the variation in online buyer satisfaction (OBS).

Table 4.10 ANOVA^a

	Sum of Square	df	Mean Square	F	Sig.
Regression	441.469	6	73.578	646.619	<0.001 ^b
Residual	21.961	193	0.114		
Total	463.430	199			

a. Dependent Variable: OBS

b. Predictors: (Constant), RTT, S, APF, RRM, CP, RCS

Source: Developed for this research.

The ANOVA table for this study appears in Table 4.10. The results showed a significant relationship between the independent variables (RTT, S, APF, RRM, CP, and RCS) and the dependent variable (OBS), with $F(6, 193) = 129.483$, $p = <0.001$.

Table 4.11 Coefficient

	Unstandardized Coefficient β	Std. Error	Standardize Coefficients Beta	T	Sig.
(Constant)	-0.150	0.152	-	-0.987	0.325
RTT	-0.157	0.137	-0.168	-1.146	0.253
S	0.698	0.126	0.746	5.540	<0.001
APF	0.394	0.118	0.413	3.339	<0.001
RRM	0.845	0.113	0.855	4.292	<0.001
CP	0.462	0.126	0.467	3.667	<0.001
RCS	0.487	0.073	0.476	6.659	<0.001

Source: Developed for this research.

The multiple regressions equation for this study was created based on Table 4.11 and is expressed as follows: $\hat{Y} = -0.15 - 0.157X_1 + 0.698X_2 + 0.394X_3 + 0.845 X_4 + 0.462 X_5 + 0.571 X_6$. The independent variables are real-time tracking (RTT), sustainability (S), accurate order processing and order fulfillment (APF), return and refund management (RRM), competitive pricing (CP), and responsive customer support (RCS). The results showed that real-time tracking had a negative beta value of ($\beta = -0.157$), indicating that the average OBS would decrease by 0.157 for every extra unit in RTT.

In addition, positive beta values of ($\beta = 0.698$), ($\beta = 0.394$), ($\beta = 0.845$), ($\beta = 0.462$), and ($\beta = 0.571$) have been identified for sustainability (S), accurate order processing and order fulfillment (APF), return and refund management (RRM), competitive pricing (CP), and responsive customer support (RCS). This suggests that when S increases by one unit, the average OBS will rise by 0.698; for every additional unit in APF, the average OBS will rise by 0.394; for every additional unit in RRM, it will rise by 0.845; for every additional unit in CP, it will rise by 0.462; and for every additional unit in RCS, it will rise by 0.571.

The findings also showed that every independent variable had a strong correlation with the dependent variable (OBS), with each variable's p-value being less than 0.05 (S, APF, RRM, CP, and RCS are all ($p < 0.001$) and RRT ($p = 0.253$)).

CHAPTER 5: DISCUSSION AND CONCLUSION

5.0 Introduction

The results from Chapter 4 were discussed in this chapter. Also, this chapter also discussed the study's limitations, implications, and recommendations for future research.

5.1 Discussion of the Study

In order to support the goals and hypotheses of the research, this section focuses on analysing the main conclusions from the previous chapter. The aim of this study is to examine the role of operational efficiency (real-time tracking and transparency, sustainability, accurate order processing and fulfilment, return and refund management, competitive pricing, and responsive customer support) in enhancing online buyer satisfaction.

200 responses have been collected from respondents all over Malaysia. According to the data collected, 61% of the respondents are female. Additionally, 45% of the respondents are between the ages of 18 and 24. Moreover, 65% of those who responded have an undergraduate degree. In general, 55% of those surveyed have a job. Furthermore, 33% of respondents earn less than RM 2,000, and 64% of respondents make "very frequently" monthly purchases online.

6 hypotheses are being tested to support the study, which was carried out to examine how operational efficiency can improve online buyer satisfaction. From the results, there were significant correlations between the dependent variable (online buyer satisfaction) and the independent variables (real-time tracking and transparency, sustainability, accurate order processing and fulfilment, return and refund management, competitive pricing, and responsive customer support).

5.1.1 Overview of Hypotheses Testing Result

Table 5.1 Results of Hypotheses Testing

Items	Hypotheses Description (H1)	Significant	Results
H1	There is a relationship between real-time tracking and transparency and online buyer satisfaction.	0.253	Not Supported
H2	There is a relationship between sustainability and online buyer satisfaction.	<0.001	Supported
H3	There is a relationship between accurate order processing and order fulfilment and online buyer satisfaction.	<0.001	Supported
H4	There is a relationship between return and refund management and online buyer satisfaction.	<0.001	Supported
H5	There is a relationship between competitive pricing and online buyer satisfaction.	<0.001	Supported
H6	There is a relationship between responsive customer support and online buyer satisfaction.	<0.001	Supported

Source: Developed for this research.

The findings of this study's hypothesis testing are shown in Table 5.1. The relationship between the independent variables (real-time tracking and transparency, sustainability, accurate order processing and fulfilment, return and refund management, competitive pricing, and responsive customer support) and dependent variable (online buyer satisfaction) is the focus of a total of six hypothesis tests. Since each variable's p-value was less than the significant level of 0.001, the table showed that all of the research's hypotheses were accepted.

5.1.1.1 Relationship between Real-Time Tracking & Transparency and Online Buyer Satisfaction

According to H1, online buyer satisfaction has a poor correlation with real-time tracking and transparency. As stated in the result, the p-value is 0.253, which is greater than 0.05, and the β -value is -0.168. This finding implies that while customers appreciate delivery updates, their level of satisfaction may not be significantly influenced by tracking information alone. Lim et al. (2018) found that delivery visibility improves perceived control. However, other research suggests that tracking does not always turn into satisfaction when other operational elements, for example, delivery speed or item accuracy have a greater influence towards customer satisfaction (Ballou & Buernetas, 2003). Handley and Benton (2011) argued that customers may value tracking tools, but order accuracy and timeliness have a greater impact on customer satisfaction. Nevertheless, the results of H1 suggest that real-time tracking and transparency do not significantly affect online buyer satisfaction and do not have a positive relationship with it.

5.1.1.2 Relationship between Sustainability and Online Buyer Satisfaction

According to H2, there is a significant correlation between online buyer satisfaction and sustainability. Based on the results, this hypothesis is supported because the p-value is lower than 0.001 and the β -value is 0.746. Thus, sustainability can improve the satisfaction of online shoppers. According to White (2019), consumers prefer companies that use eco-friendly practices increasingly more. Furthermore, Geldermann et al. (2016) concluded that sustainability initiatives improve consumer attitudes and perceived value. These studies indicate that favourable customer assessments and satisfaction are directly affected by sustainability. H2 is therefore approved.

5.1.1.3 Relationship between Accurate Order Processing and Fulfilment and Online Buyer Satisfaction

H3 findings indicate a positive relationship between accurate order processing and fulfilment and online buyer satisfaction, with a β -value of 0.413 and p-value of <0.001 . This result highlights the role of accurate order processing and order fulfilment in shaping consumers' post-purchase evaluations. Accurate order processing including customers' orders are recorded correctly, payments without errors and correct items are prepared for shipment while order fulfilment ensures timely delivery in good condition. According to Ramanathan (2011), one of the best measures of online shopping satisfaction is fulfilment reliability. Furthermore, according to Geldermann et al. (2016), trust and repurchase intentions are directly increased by precise delivery and item fulfilment. In Malaysia' e-commerce market, accurate order processing and fulfilment are important due to high competition and consumer price sensitivity. This result demonstrates how much Malaysian customers depend on error-free processing, as incorrect or delayed orders continue to rank among the most common grievances in local online shopping. H3 is therefore supported.

5.1.1.4 Relationship between Return and Refund Management and Online Buyer Satisfaction

According to H4, online buyer satisfaction is significantly correlated with return and refund management. The findings shown that the hypothesis is supported because the β -value is 0.855 and the p-value is <0.001 . The outcome also emphasized how crucial post-purchase service quality is influencing consumers' perceptions of their overall online shopping experience. The failure of consumers to physically inspect products prior to purchase in the e-commerce sector raises the perceived risk of online transactions. Therefore, a transparent, adaptable and effective return and refund procedure becomes an essential customer assurance mechanism. As stated by Janakiraman (2016), generous and clear return policies boost customer confidence and the likelihood that a purchase will be made. Other than that, easy returns boost customer loyalty and reduce post-purchase anxiety (Gelbrich et al., 2017). These studies support the current findings by proving how effective return procedures can turn potentially unfavourable experiences into favourable assessments. In Malaysia, trust in online transactions is still

developing, but simple refunds comfort customers and have a major impact on satisfaction levels. Consumers are more likely to stick with platforms that resolve issues quickly and fairly. Customers tend to be disappointed and may move to competing platforms when refunds are delayed or return procedures are difficult. Based on the Expectation-Confirmation Theory (ECT), consumers are more likely to be satisfied when their expectations about efficiency and fairness in returns are satisfied (Oliver, 1980). This prove that H4 is supported.

5.1.1.5 Relationship between Competitive Pricing and Online Buyer Satisfaction

The findings of H5 shows that competitive pricing has a positive significant relationship with online buyer satisfaction, with the β -value of 0.467 and p-value of <0.001 . Competitive pricing attracts customers and influences their perception of value for money. However, perceived price fairness in relation to service quality and overall shopping experience also contributes to customers satisfaction, rather than only low prices. According to Kim et al. (2007), consumers' attitudes and loyalty are greatly impacted by perceived value fairness. Xia et al. (2004) further highlighted that consumers are price-sensitive and that their satisfaction is highest when fair pricing is paired with trustworthy service. These studies support the current findings by emphasizing how pricing is a key factor in determining satisfaction. Customers in Malaysia often expect competitive pricing, where e-commerce platforms regularly engage in aggressive price competition through promotions and discounts. However, customer satisfaction will decrease when pricing is seen as deceptive, for example, when there are unexpected or hidden fees. This shows that Malaysian customers value discounts, their level of satisfaction is influenced by both operational quality and pricing. To put it briefly, H5 is accepted.

5.1.1.6 Relationship between Responsive Customer Support and Online Buyer Satisfaction

H6 stated that responsive customer support has a positive relationship with online buyer satisfaction. The results have shown that the β -value is 0.557 while the p-value is <0.001 , which

explained that this hypothesis is supported. Customer support frequently becomes the main channel through which customers seek assistance when problems arise because online transactions lack face-to-face interaction. According to Holloway and Beatty (2003), efficient service recovery is essential to online buyer satisfaction, especially in the case of operational errors. Additionally, the study of Ladhari (2009) showed that behavioural intentions and satisfaction are strongly influenced by responsiveness. These studies confirm that responsive customer service is a significant predictor of satisfaction, especially in digital retail settings. In Malaysia's competitive e-commerce landscape, issues such as delayed deliveries, incorrect items or refund disputes are common. Consumers prefer to remain loyal and forgive service errors when they receive prompt and helpful responses. On the other hand, inadequate or slow support can increase disappointment and result in negative feedback or platform switching. Thus, H6 is accepted.

5.2 Implications of the Study

The study's results and conclusions were utilized to look into how operational efficiency might improve online customer satisfaction. The study's findings may have practical and theoretical implications.

5.2.1 Practical Implications

The outcomes of this study have numerous major implications for e-commerce enterprise, logistics companies and policy makers in Malaysia.

First, the findings show that not every component of operational efficiency has an equal impact on online customer satisfaction. For example, this study found that real-time tracking and transparency were less significant, which implies that consumers may now consider tracking to be a feature rather than a service that provides value. E-commerce businesses should keep away from overinvesting in tracking features alone and instead concentrate on improving the

areas that have a major impact on customer satisfaction, for instance, accurate order processing, responsive support and competitive pricing.

Furthermore, the significant benefits of accurate order processing and fulfilment emphasize the importance of improving warehouse operations, quality control, and courier coordination. This is due to the fact that one of the most frequent complaints from customers in Malaysia is fulfilment errors. The business may drastically reduce customer dissatisfaction and avoid a bad reputation by enhancing these systems. Also, the major effect of sustainability implies that consumers place a high priority on environmentally friendly behaviour. By using environmentally friendly packaging, providing carbon-neutral delivery choices, or encouraging green logistics collaborations, e-commerce platforms can take advantage of this.

Additionally, the benefits of return and refund management show how a simple and clear reverse logistics procedure can boost confidence and promote repeat customers. Companies should offer simple return instructions, quick refund processing and standardize return policies. Moreover, it was discovered that responsive customer service and competitive pricing were important predictors of satisfaction. Platforms must thus achieve a balance between price promotions and the ability to offer immediate help when problems occur. When viewed as a whole, these insights help companies prioritize resources and create more customer-focused operational strategies that foster lasting relationships.

5.2.2 Theoretical Implications

This study strengthens our understanding of operational efficiency in relation to online buyer satisfaction, which makes a significant contribution to academic research. The findings extend the use of the Expectation-Confirmation Theory (ECT), which holds that customer satisfaction results from actual performance that either fulfils or exceeds expectations. The significant results for independent variables, for example, accurate order processing and order fulfilment, returns and refund management, competitive pricing and responsive customer support shows that these operational elements are important factors that influence expectation confirmation in online shopping environment. In another way, the minor impact of real-time tracking and

transparency implies that when certain operational features are standardized, they might no longer have an impact on satisfaction, adding complexity to the ECT framework.

The study also confirms aspects of the SERVQUAL model by showing that the dimensions of reliability (accurate fulfilment), responsiveness (customer support), and assurance (refund processes) remain critical to satisfaction in digital retail environments. This study highlights the changing aspects of service expectations in e-commerce and expands theoretical understanding by incorporating operational efficiency variables into standard service quality theories. Additionally, this research adds new empirical evidence supporting the role of back-end operations in shaping consumer satisfaction in the Malaysian online sector, as operational efficiency has been understudied in comparison to factors, such as trust and website quality.

5.3 Limitations of the Study

The first limitation of the study is the use of a convenience sampling method limits the generalisability of the findings. The sample may not accurately represent the entire population of Malaysian online shoppers because it favours those who are more accessible or active on digital platforms. Besides, the use of self-reported data could lead to response bias because participants may give socially acceptable responses or might not accurately recall their prior online shopping experiences.

In addition, the study only focuses on Malaysian consumers, which restricts the results' applicability to other cultural or economic contexts. Expectations for customer service responsiveness, sustainability practices and logistics standards may vary between nations. Fourth, only 6 aspects of operational efficiency were looked at in the study. Even though these variables are extremely important, the model did not account for other elements that might have an impact on customer satisfaction, for example, delivery speed, last-mile logistics, courier professionalism, warehouse automation or stock availability.

5.4 Recommendations for Further Research

The first suggestion is that future research should use probability sampling techniques to increase representativeness and generalisability across different segments of online shoppers. Deeper understanding of segment-specific behaviours may be obtained by incorporating stratified sampling based on age, income or frequency of shopping. Additionally, future research may broaden the scope of operational efficiency variables by including areas such as delivery speed, warehouse automation, last-mile delivery performance, or the impact of courier companies.

Besides, comparative research between various nations or areas would be beneficial too. Such research could show how consumer perceptions of operational efficiency are influenced by cultural, economic or technological differences. Furthermore, qualitative techniques such as interviews or focus groups could enhance quantitative findings by offering deeper insights into customer expectations, frustrations and opinions of operational performance.

Another recommendation is to investigate potential mediators or moderators such as trust, perceived risk, or customer expectations. These factors could enhance theoretical understanding and have an impact on how operational efficiency impacts customer satisfaction. Moreover, a longitudinal design may be used in future studies to investigate how platform policy modifications or operational enhancements impact user satisfaction over time. Monitoring these developments can provide a more complete picture of consumer behaviour as e-commerce changes quickly.

5.5 Conclusion

This chapter reviewed the study's main findings. The results show that accurate order processing, sustainability, return and refund management, competitive pricing, and responsive customer support all significantly enhance consumer satisfaction. However, real-time tracking and transparency were found to have no significant impact, indicating that some operational features may no longer be contributors to satisfaction but rather have become standard expectations.

This study emphasized how important operational excellence is to be preserving long-term customer trust, promoting repeat purchases, and maintaining competitive advantage in Malaysia's dynamic e-commerce industry.

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APPENDICES

Appendix A: SURVEY QUESTIONNAIRES



UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF ACCOUNTANCY AND MANAGEMENT (FAM)

BACHELOR OF INTERNATIONAL BUSINESS (HONOURS)

UKMZ 3016 RESEARCH PROJECT

**A STUDY OF THE ROLE OF OPERATIONAL EFFICIENCY IN ENHANCING
ONLINE BUYER SATISFACTION.**

SURVEY QUESTIONNAIRES

Dear participant,


I am an undergraduate student of Bachelor of International Business (Honours) at Universiti Tunku Abudul Rahman (UTAR), and I am currently conducting my research project on '**The Role of Operational Efficiency in Enhancing Online Buyer Satisfaction**'. Your valuable insights will make a significant contribution to this research.

Your cooperation and support are needed to complete the questionnaire; The survey will take approximately 10-15 minutes. Neither your personal information nor personal identity will be revealed. Your participation will be anonymous, and all the information will be kept confidential and for academic purposes only.

Your participation is **entirely voluntary**, and we sincerely appreciate your time and honest input.

Should you have any enquire, please do not hesitate to contact me via the information given below.

Liew Xin Ying

 liew0221@utar.my

Thank you once again for your precious time in participating this study.

Your faithfully,

Liew Xin Ying

Student of

Faculty of Accounting and Management

Universiti Tunku Abdul Rahman (UTAR)

SCREENING QUESTIONS

Acknowledgement of Notice

In compliance with the Personal Data Protection Act 2010 (“PDPA”), UTAR is dedicated to safeguarding the confidentiality, security, and accuracy of your provided personal information. Your data will only be analyzed for academic purpose, and UTAR pledges to dispose of it in accordance with our retention policy once it is no longer necessary.

- I have been notified and that I hereby understood, consented and agreed per UTAR above notice.
- I disagree; my personal data will not be processed.

Section A: Demographic Information

Please provide the following demographic information to help me analyze responses effectively. Your response are critical to the accuracy and relevance of my research. All information collected is strictly confidential.

1. Gender
 - Male
 - Female
2. Age
 - 18 – 25 years old
 - 26 – 35 years old
 - 36 – 45 years old
 - 46 – 55 years old
 - 56 years old and above
3. Education Level
 - High School or Equivalent
 - Foundation
 - Diploma
 - Undergraduate (eg. Degree)
 - Postgraduate (eg. Master/ PhD)
4. Employee Status
 - Employed
 - Unemployed
 - Self-employed
 - Retired
5. Income Level (Monthly)
 - Below RM 2,000
 - RM 2,001 – RM 4,000
 - RM 4,001 – RM 6,000
 - RM 6,001 – RM 8,000
 - RM 8,000 and above

6. How often do you purchase products online?
- Rarely (< 1 time per month)
 - Occasionally (1 – 2 times per month)
 - Regularly (3 – 5 times per month)
 - Frequently (6 – 10 times per month)
 - Very Frequently (> 10 times per month)

Section B: Construct Measurement

This section explores the roles of operational efficiency in enhancing online buyer satisfaction through six distinct parts: **Real-Time Tracking & Transparency, Sustainability, Return & Refund Management, Accurate Order Processing & Order Fulfilment, Competitive Pricing and Responsive Customer Support.**

Please rate the following statement on a scale of 1 to 5.

Strongly Disagree (SD)	Disagree (D)	Neutral (N)	Agree (A)	Strongly Agree (SA)
1	2	3	4	5

Independent Variables:

1. Real- Time Tracking & Transparency

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I like to track the delivery of what I ordered.	1	2	3	4	5
I will change vendors if they poorly handle their deliveries.	1	2	3	4	5
I would like to know where my package is at the moment.	1	2	3	4	5
I check the status of the shipment as it travels towards me.	1	2	3	4	5
Contact with package delivery people is a pleasant experience for me.	1	2	3	4	5
I don't care who delivers my package.	1	2	3	4	5
I look forward to the delivery of something I ordered.	1	2	3	4	5

I am eagerly awaiting the delivery of the ordered items.	1	2	3	4	5
I am happy to order goods from vendors with whom I have no problems with former deliveries.	1	2	3	4	5

2. Sustainability

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The type of packaging I use is eco-friendly and has a good environmental impact.	1	2	3	4	5
I know that plastic-packaging contributes to pollution.	1	2	3	4	5
I look forward that someday delivery vehicles will also become eco-friendly.	1	2	3	4	5
I prefer recyclable materials and packaging rather than the non-recyclable ones.	1	2	3	4	5
Sustainable packaging increases customer sales.	1	2	3	4	5
Online sellers should prepare environmentally friendly packaging.	1	2	3	4	5
It is important to use sustainable packaging.	1	2	3	4	5
I know the importance of sustainable production and packaging.	1	2	3	4	5
Vehicles used to deliver items contribute to carbon dioxide emission.	1	2	3	4	5

3. Accurate Order Processing & Order Fulfilment

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Deliveries consistently contain the correct items.	1	2	3	4	5

The quantity of items delivered is always accurate.	1	2	3	4	5
Delivered products match the order specifications (model, colour, etc.).	1	2	3	4	5
The product I ordered was delivered with appropriate protection.	1	2	3	4	5
Product is rarely damaged due to shipping method.	1	2	3	4	5
Product is rarely damaged due to handling by the shipping unit.	1	2	3	4	5
It is easy to report order discrepancies to the seller.	1	2	3	4	5
The seller offers satisfactory solutions for order discrepancies.	1	2	3	4	5
Overall, the seller provides strong support in resolving product issues.	1	2	3	4	5

4. Return & Refund Management

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
It was easy to take care of returns and exchanges with the retailer.	1	2	3	4	5
Does not take care of product exchanges and returns promptly.	1	2	3	4	5
Any after-purchase problems I experience are quickly resolved by the retailer.	1	2	3	4	5
Undamaged delivered goods.	1	2	3	4	5
I can return products for free when I shop online.	1	2	3	4	5
The return process is easy when I shop online.	1	2	3	4	5

I can return products within a specified time when I shop online.	1	2	3	4	5
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5. Competitive Pricing

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Price discount is important.	1	2	3	4	5
Promotion price on various products is important.	1	2	3	4	5
Affordable price is important.	1	2	3	4	5
Reasonable price is important.	1	2	3	4	5
I made the right decision to choose to buy online.	1	2	3	4	5

6. Responsive Customer Support

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am pleased with the courtesy I received.	1	2	3	4	5
I received timely service.	1	2	3	4	5
The employees are competent.	1	2	3	4	5
It is easy for me to get the help I need.	1	2	3	4	5
The operating hours are convenient for me.	1	2	3	4	5
The employees treat me as a valued customer.	1	2	3	4	5
I can count on them to treat me fairly.	1	2	3	4	5
Customer support takes time to undertake my needs.	1	2	3	4	5
I received help promptly.	1	2	3	4	5
The organization delivers what it promises.	1	2	3	4	5

Dependent Variable:

1. Online Buyer Satisfaction

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am willing to put in extra effort to buy from this retailer.	1	2	3	4	5
I am proud to tell the others that I buy from this retailer.	1	2	3	4	5
For me, this retailer is the best alternative.	1	2	3	4	5
I expect to stay with this retailer for a long period of time.	1	2	3	4	5
I would recommend this retailer to the others.	1	2	3	4	5
I buy from this retailer on a regular basis.	1	2	3	4	5
This retailer stimulates me to buy repeatedly.	1	2	3	4	5
I have truly enjoyed buying from this retailer.	1	2	3	4	5

Appendix B: ETHICAL APPROVAL LETTER



UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)
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Re: U/SERC/78-600/2025

16 October 2025

Dr Fitriya Binti Abdul Rahim
Head, Department of International Business
Faculty of Accountancy and Management
Universiti Tunku Abdul Rahman
Jalan Sungai Long
Bandar Sungai Long
43000 Kajang, Selangor

Dear Dr Fitriya,

Ethical Approval For Research Project/Protocol

We refer to your application for ethical approval for your students' research project from Bachelor of International Business (Honours) programme enrolled in course UKMZ3016. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

No.	Research Title	Student's Name	Supervisor's Name	Approval Validity
1.	Exploring the Relationship Between AI Competency and Employment Hope Among Final-Year Undergraduates	Wong Shu Hui	Dr Low Mei Peng	16 October 2025 – 15 October 2026
2.	Examining the Knowledge Gap of Undergraduates' Awareness of the Consumer Protection Act 1999 in Relation to Influencer Marketing	Lim Jia Yu	Dr Tan Pei Meng	
3.	Examining the Drivers of AI technologies for Academic Productivity Among Higher Education Students	Esther Lee Ke Xin		
4.	E-waste Recycling Behavior	Teh Wai Quan	Dr Low Mei Peng	
5.	The Dark Side of Digital Learning: Investigating Technostress, Academic Disengagement, and Self-Perception of Academic Performance Among University Students	Weline Chong Wei Ling		
6.	Determinants of Firm Performance Among Malaysian SMEs in Cross-Border E-Commerce	Lee Yee Heng	Dr Farah Waheeda Binti Jalaludin	
7.	The Influence of E-Commerce Live Streaming Features on Consumer Trust and Purchase Intention in Malaysia	Lai Jing Yu		
8.	The Role of Operational Efficiency in Enhancing Online Buyer Satisfaction	Liew Xin Ying	Dr Komathi a/p Munusamy	
9.	Examining the Drivers of Employee Job Performance in the Malaysian Service Industry	Chong Yen Yi	Dr Cheah Lee Fong	
10.	Understanding E-waste Recycle Practice in Malaysia through the lens of Behavioral Reasoning Theory	Tan Wei Yan	Dr Low Mei Peng	
11.	Brewing Preference: A Study on Consumer Purchase Intention Towards ZUS Coffee	Kong Carol	Dr Law Kian Aun	

Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
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Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288 Fax: (603) 9019 8868
Website: www.utar.edu.my



The conduct of this research is subject to the following:

- (1) The participants' informed consent be obtained prior to the commencement of the research;
- (2) Confidentiality of participants' personal data must be maintained; and
- (3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.
- (4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

Should the students collect personal data of participants in their studies, please have the participants sign the attached Personal Data Protection Statement for records.

Thank you.

Yours sincerely,

Professor Dr Zuraidah Abd Manaf
Chairman
UTAR Scientific and Ethical Review Committee

c.c Dean, Faculty of Accountancy and Management
Director, Institute of Postgraduate Studies and Research

Appendix C: SPSS RESULTS

Reliability Statistics

Cronbach's Alpha	N of Items
.957	9

Reliability Statistics

Cronbach's Alpha	N of Items
.935	9

Reliability Statistics

Cronbach's Alpha	N of Items
.929	7

Reliability Statistics

Cronbach's Alpha	N of Items
.950	9

Reliability Statistics

Cronbach's Alpha	N of Items
.964	5

Reliability Statistics

Cronbach's Alpha	N of Items
.955	10

Reliability Statistics

Cronbach's Alpha	N of Items
.948	8

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	441.469	6	73.578	646.619	<.001 ^b
	Residual	21.961	193	.114		
	Total	463.430	199			

a. Dependent Variable: OBS

b. Predictors: (Constant), RCS, CP, RTT, APF, RRM, S

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.895 ^a	.801	.794	.33760

a. Predictors: (Constant), RCS, CP, RTT, APF, RRM, S

Descriptive Statistics

	N	Mean	Std. Deviation
RTT	200	3.5628	1.51433
S	200	3.6050	1.54995
APF	200	3.5722	1.52102
RRM	200	3.4850	1.53086
CP	200	3.0730	1.41694
RCS	200	3.5530	1.49364
OBS	200	3.5400	1.52604
Valid N (listwise)	200		

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.150	.152		-.978	.325		
	RTT	-.157	.137	-.168	-1.146	.253	.062	16.129
	S	.698	.126	.746	5.540	<.001	.042	23.813
	APF	.394	.118	.413	3.339	<.001	.044	22.727
	RRM	.845	.113	.855	4.292	<.001	.056	17.857
	CP	.462	.126	.467	3.667	<.001	.465	2.151
	RCS	.487	.073	.476	6.659	<.001	.048	20.833

a. Dependent Variable: OBS