THE RELATIONSHIP BETWEEN PERCEIVED USEFULNESS, USER-FRIENDLINESS, RISK PERCEPTION AND TECHNOLOGY ACCEPTANCE ON PURCHASE INTENTIONS

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ABSTRACT

This study investigates the influence of Artificial Intelligence (AI) on consumer behaviour within Malaysia's online retail industry. Understanding how AI-related factors affect purchase intentions is crucial for retailers aiming to capitalize on technological advancements as the digital marketplace evolves. The study's objectives were to examine the roles of perceived ease of use, perceived usefulness, AI performance risk, and technology acceptance in shaping attitudes towards AI and to determine how these attitudes influence purchase intentions. The problem statement addresses the gap in existing literature regarding the impact of AI on consumer purchase behaviour, particularly within the context of an emerging digital economy like Malaysia's. With online retail rapidly integrating AI, there is a pressing need to understand the implications of this integration from a consumer perspective. A quantitative research methodology was employed, utilizing a survey distributed to a diverse group of Malaysian online retail consumers. Statistical analysis, including regression and correlation, was utilized to interpret the data, offering a robust examination of the relationships between the variables of interest. The financial analysis component aimed to correlate consumer attitudes towards AI with purchase behaviours to provide insights into potential revenue implications for online retail businesses. It explored the willingness of consumers to engage financially with AI-enhanced platforms and the likelihood of AI adoption influencing shopping frequency and expenditure. The study concluded that perceived usefulness and ease of use significantly impact consumer attitudes towards AI, influencing purchase intentions. AI performance risk was also positively correlated with purchase intentions, suggesting a complex relationship where perceived risks may drive consumer engagement under certain conditions. Based on these findings, the study recommends that online retailers in Malaysia focus on improving AI functionalities that enhance user experience, address AI performance risks transparently, and foster technology acceptance to optimize the benefits of AI in e-commerce. Overall, the study provides valuable insights into consumer AI acceptance. It offers a foundation for online retailers to develop strategies that align with consumer preferences and enhance their competitive edge in the digital marketplace.

Keywords: Perceived usefulness, perceived ease of use, performance risk, technology acceptance, attitude towards AI and purchase intentions

APPROVAL

This is to certify that this thesis conforms to acceptable standards of scholarly presentation and is fully adequate, in quality and scope, for the fulfilment of the requirements for the Doctor of Business Administration

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DECLARATION

I hereby declare that the thesis submitted in fulfilment of the DBA degree is my own work and that all contributions from any other persons or sources are properly and duly cited. I further declare that the material has not been submitted either in whole or in part, for a degree at this or any other university. In making this declaration, I understand and acknowledge any breaches in this declaration constitute academic misconduct, which may result in my expulsion from the programme and/or exclusion from the award of the degree.

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LIST OF ABBREVIATION

AI	Artificial Intelligence
AIA	Artificial Intelligence Anxiety
AIAS	Artificial Intelligence Anxiety Scale
AR	Augmented Reality
AVE	Average Variance Extracted
ATAI	Attitude towards AI
ATT	Attitude toward AI Worthiness
BSC	Brand Self-Connection
CAGR	Compound Yearly Growth Rate
C2C	Consumer-To-Consumer
DV	Dependent Variable
ESQ	E-Service Quality
e-WOM	Electronic Word-Of-Mouth
HTMT	Heterotrait-Monotrait
IV	Independent Variable
M	Mediator
M	Sample Mean
MSA	Modern Standard Arabic
NFI	Normed Fit Index
O	Original Sample
P	P Value
PME	Proportion Of Mediated Effect
PI	Purchase Intention

PU	Perceived Usefulness
PR	Performance Risk
PEOU	Perceived Ease of Use
PRI	Personal Inventiveness
PUO	Perceived usefulness of Online Reviews
R^2	R-Squared
SMEs	Small and Medium-Sized Enterprises
SEM	Structural Equation Modelling
SRMR	The Standardized Root Mean Square Residual
STDEV	Standard Deviation
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
TAT	Technology Attitudes
TA	Technology Acceptance
TPB	Theory of Planned Behavior
UTAUT	Unified Theory of Acceptance and Usage of Technology
VR	Virtual Reality
VBAM	Value-Based Adoption Model
VIF	Variance Inflation Factor
WPO	Willingness to Pay for Online

CHAPTER 1

INTRODUCTION

1.0   Chapter Overview

This chapter introduces the research, providing an overview of the study's context, background, problem statements, research questions, and objectives. It outlines the scope of the study and highlights its significance in contributing to both theoretical and practical aspects of the field. The background discusses the context of AI (Artificial Intelligence) adoption in Malaysia's online retail sector, considering the growth of e-commerce and the emergence of major players in the market. It addresses the need for AI integration to enhance customer experiences and optimize retail operations. The problem statements identify gaps and challenges related to AI adoption, consumers' perceptions of AI technologies, perceived risks, and their impact on purchase intentions. The research questions guide the investigation into the relationship between AI adoption and purchase intentions, focusing on factors influencing consumers' attitudes towards AI and perceived benefits and risks. The research aims to understand factors influencing technology acceptance, explore the role of attitude towards AI as a mediator, and identify practical implications for businesses and policymakers. The study includes Malaysia's Online Retail Sector, specifically focusing on online purchases made through applications or websites. The research contributes to the academic understanding of technology acceptance and consumer behaviour while providing practical insights for businesses and policymakers. The research expands knowledge by examining the role of perceived usefulness, user-friendliness, risk perception, and technology acceptance in shaping purchase intentions, with attitude towards AI as a mediator. The study's value lies in

guiding businesses to promote AI adoption, enhance customer experiences, and establish trust in AI technologies. Policymakers can also shape regulations for responsible AI integration. Key concepts such as perceived usefulness and technology acceptance are defined to ensure clarity and understanding. The chapter outlines the structure and flow of the thesis, guiding readers through its logical progression.

1.1 Background of Study

The Malaysian market for online shopping is quickly expanding to become one of the most important in Southeast Asia. Its growth is outpacing the region's more established and traditional markets, which is a significant accomplishment. The Malaysian e-commerce business is anticipated to grow by a whopping 20 percent in 2022 alone. The number of customers who want to do their shopping online is growing. In recent years, there has been a greater variety of payment options that consumers may choose from. All of these different things have played a role in online business growth. The first step in Malaysia's exploration of the online buying market was taken in 2004, with the launch of eBay Malaysia (Har et al., 2022).

Lazada and Zalora, both very large companies, launched their operations in Malaysia in 2012 and 2015, respectively. Shopee arrived on the scene in 2016. Shopee, presently ranked as the most popular e-commerce website in the country, has seen tremendous expansion and receives around 55 million visitors every month. The eCommerce market in Malaysia is projected to reach $10.19 billion in the United States in 2023 and $16.98 billion by 2027, growing at a compound annual growth rate of 13.6%. The country is actively working to match its regulatory requirements, product availability, payment methods, and delivery dates with those of more mature online shopping markets. This process is known as "catching up." (Yeo et al., 2022).

With projected sales of $8,567.1 million by 2023, Malaysia will overtake Chile to take the 33rd spot on the list of top markets for eCommerce. It is estimated that sales will expand at a compound yearly growth rate (CAGR 2023-2027) of 13.2 percent. That market volume would predictably reach $14,060.6 million by the year 2027. The growth rate of the worldwide eCommerce market was 9.6 percent in 2023, and Malaysia's market contributed to that growth rate. An increase of 10.0 percent is projected. Global eCommerce sales are projected to increase over the next few years, just as they have already done in Malaysia. E-commerce looks at five different marketplaces to determine the state of the e-commerce industry in Malaysia (Yeo et al., 2022). Electronics and Media is the largest market in Malaysia, responsible for 29.7 percent of all eCommerce sales in the country. It is followed by Toys, Hobbies, and Do It Yourself (12 percent), Furniture & Appliances (18.4 percent), Food & Personal Care (16.1 percent), and Furniture & Appliances (12 percent) (Har et al., 2022).

The online retail industry in Malaysia has experienced significant growth, surpassing traditional markets in the region. As the market continues to expand, the role of AI has become increasingly prominent, offering numerous benefits to retailers and consumers. AI is revolutionizing customer experiences by enabling personalized recommendations based on customer behaviour and preferences. With the integration of AI-powered chatbots and virtual assistants, retailers can provide real-time customer support, enhancing satisfaction and engagement. Moreover, the rise of voice-activated devices allows for hands-free shopping experiences through AI-enabled voice assistants (Har et al., 2022). Additionally, AI-driven augmented reality (AR) and virtual reality (VR) technologies enable virtual try-ons and product visualization, empowering customers to make informed decisions (Yeo et al., 2022).

Beyond customer experiences, AI is optimizing retail operations. By analyzing historical sales data and current trends, AI algorithms assist in inventory management, minimizing stockouts and overstocking, thereby streamlining supply chain operations. Through demand forecasting, retailers can anticipate customer needs and plan inventory and pricing strategies accordingly (Rahman, et al., 2021). Dynamic pricing based on AI algorithms allows retailers to adjust prices in real-time, ensuring competitiveness and responsiveness to market changes. AI also plays a crucial role in fraud detection, analyzing transactions and customer behaviour to identify and prevent fraudulent activities, safeguarding retailers and consumers.

In driving purchase intentions, AI offers personalized marketing campaigns, tailoring content and offers to individual customers, increasing the likelihood of conversions. By analyzing social media data, AI provides valuable insights into customer sentiment, preferences, and trends, facilitating targeted marketing campaigns and product promotions (Fong, 2023). Additionally, AI-powered visual recognition systems enable customers to search for products using images, leading to an improved shopping experience and encouraging impulse purchases. Retailers can also leverage AI to analyze customer feedback and reviews, gaining insights into customer satisfaction and areas for improvement.

Despite the many advantages of AI in the online retail industry, there are challenges to consider. Ensuring data privacy and security is critical, as AI heavily relies on customer data. Retailers must build trust and comply with regulations to protect customer information adequately (Fong, 2023). Implementing AI solutions can be complex, requiring expertise and investment, and integration with existing systems may present challenges. A skilled workforce capable of effectively developing, maintaining, and utilizing AI technologies is essential for successful AI adoption.

Ethical considerations are paramount in AI-powered decision-making to avoid biases that could negatively impact customer experiences (Rahman, et al., 2021).

AI is increasingly vital in Malaysia's online retail industry, offering unprecedented opportunities to enhance customer experiences, optimize operations, and drive purchase intentions. Embracing AI technologies will enable retailers to cater to the evolving needs and preferences of tech-savvy consumers, gaining a competitive edge in the market (Thoti et al., 2023). Nevertheless, businesses must navigate challenges such as data privacy, integration complexity, skill gaps, and ethical considerations to leverage AI effectively and sustain the remarkable growth trajectory of the Malaysian e-commerce market. By doing so, Malaysia can continue positioning itself at the forefront of e-commerce innovation in Southeast Asia.

Lazada Malaysia is one of the largest and most popular e-commerce platforms in Southeast Asia, including Malaysia. It offers a wide array of products, including electronics, fashion, home goods, and more. Lazada has gained a substantial customer base and is known for its frequent sales and promotions. Shopee Malaysia is another prominent player in the Malaysian e-commerce market. Known for its user-friendly interface and competitive pricing, Shopee attracts a large number of visitors each month. It features various product categories, including electronics, beauty, fashion, and lifestyle products (Rahman, et al., 2021).

Zalora Malaysia, on the other hand, is a specialized fashion e-commerce platform offering a vast collection of clothing, shoes, accessories, and beauty products. It focuses on trendy and contemporary fashion items, catering to a younger demographic. Previously known as 11street, the platform has since been rebranded as PrestoMall. It features an extensive range of products, including electronics, home appliances, fashion, and more (Thoti et al., 2023).

Lelong.my is one of Malaysia's oldest and most established online marketplaces. Operating as a C2C (Consumer-to-Consumer) platform, it allows individuals and businesses to sell a wide variety of products. Hermo, on the other hand, is a specialized beauty and skincare online retailer offering a curated selection of beauty products from various brands. It has gained popularity among beauty enthusiasts for its authenticity and wide range of products (Fong, 2023).

PG Mall is a growing e-commerce platform in Malaysia, known for its wide product range and frequent promotions. It aims to support local businesses and offers a diverse selection of products. FashionValet focuses on modest fashion and offers a collection of clothing, accessories, and beauty products. It caters to a niche market and has gained popularity both locally and internationally. It is important to note that GemFive, previously operating as an e-commerce platform, provided various product categories, including electronics, fashion, and lifestyle items.

1.2 Problem Statement

As Malaysia's e-commerce market continues its rapid expansion, online retail is quickly becoming one of the largest sectors in Southeast Asia. In 2022 alone, the Malaysian e-commerce market experienced a remarkable growth rate of 20%, outpacing traditional established markets in the region (Thoti et al., 2023). The sector's projected revenue for 2023 is estimated at US$ 8,567.7 million, placing it ahead of several other countries in market size, including Chile. Moreover, by 2027, the market volume is expected to reach US$ 14,060.6 million, indicating a compound annual growth rate (CAGR 2023-2027) of 13.2% (Har et al., 2022).

As the Malaysian e-commerce market grows, the role of artificial intelligence (AI) in shaping consumer behaviours and purchase intentions gains significance. Currently, the online retail sector is dominated by several major players, with Shopee

leading the way as the most visited e-commerce platform in the country, attracting approximately 55 million visitors per month. The increasing popularity of AI-powered technologies, such as recommendation engines, chatbots, and personalized marketing, highlights the growing reliance on AI to deliver enhanced customer experiences and optimize retail operations (Thoti et al., 2023).

Despite the evident integration of AI in the online retail industry, the precise relationship between perceived usefulness, user-friendliness, risk perception, technology acceptance, and purchase intentions, particularly concerning consumers' attitudes toward AI, remains a critical knowledge gap. As of 2023, the online retail industry's projected revenue is anticipated to reach US$ 10.19 billion, indicating the sector's significant economic impact on Malaysia's economy (Fong, 2023). To capitalize on this growth and better serve consumers, understanding how consumers' attitudes toward AI technologies influence their purchase intentions is paramount for e-commerce retailers and policymakers (Ho et al., 2022).

Therefore, this research aims to explore and analyze the complex interplay between perceived usefulness, user-friendliness, risk perception, and technology acceptance on purchase intentions in Malaysia's online retail sector. Adopting the Technology Acceptance Model (TAM) as the theoretical framework, this study provides comprehensive insights into the factors influencing consumers' decision-making when considering AI-driven online retail platforms. The study will target a diverse sample of consumers engaged in fully online purchases, examining their attitudes and perceptions toward AI in the context of their shopping experiences.

As Malaysia's online retail industry experiences rapid growth and increasing consumer preference for online shopping, understanding the factors influencing purchase intentions becomes crucial for retailers and policymakers (Ho et al., 2022).

While previous research has explored various elements impacting purchase decisions, there remains a gap in understanding the relationship between perceived usefulness, user-friendliness, risk perception, and technology acceptance on purchase intentions, with a specific focus on the role of attitude toward artificial intelligence (AI) in the context of the online retail sector of Malaysia.

The integration of AI technologies has become prevalent in online retail, promising to enhance customer experiences, optimize operations, and drive purchase intentions. However, the impact of consumers' attitudes toward AI on their purchase intentions in the Malaysian context has not yet been comprehensively explored. Therefore, this research aims to address this gap by investigating how consumers' perceptions of the utility and user-friendliness of AI technologies, their risk perception associated with AI adoption, and their overall technology acceptance influence their purchase intentions in the online retail environment of Malaysia.

By employing the Technology Acceptance Model (TAM) as the theoretical framework, this study seeks to provide valuable insights into the dynamics between consumers' attitudes toward AI and their purchase intentions. The research will specifically target consumers engaged in fully online purchases, from browsing to checkout and payment, and exclude cases involving a combination of online and physical store payment (Ho et al., 2022).

The findings of this study will have significant implications for both academic and practical perspectives. Academic stakeholders can better understand the interplay between technology acceptance, AI attitude, and purchase intentions in the Malaysian online retail sector. Meanwhile, e-commerce retailers and policymakers will benefit from actionable insights to enhance their AI-driven strategies, optimize user experiences, and bolster purchase intentions among consumers.