EXAMINING THE ANTECEDENTS OF PERCEIVED ENJOYMENT AND FLOW EXPERIENCE IN IMPULSIVE PURCHASES BEHAVIOR DURING TIKTOK LIVE STREAMING: A STUDY FROM THE PERSPECTIVE OF TIKTOK USERS

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BY

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MAY 2024

DECLARATION

I hereby declare that:

(1) This undergraduate FYP is the end result of my own work and that due acknowledgment has been given in the references to ALL sources of information be they printed, electronic, or personal.

(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 19433 words.

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Date: 29 April 2024

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DEDICATION

This final year project is dedicated to my esteemed supervisors, Dr. Tang Kin Leong, whose invaluable assistance was pivotal in its completion. Additionally, I extend this dedication to my family and friends whose unwavering support and encouragement were instrumental throughout this endeavor.

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LIST OF ABBREVIATIONS

SOR	Stimulus Organism Response
PLS-SEM	Partial Least Square Structural Equation Modelling
R^2	R-square
β	Standardized Beta
VIF	Variance Inflation Factor
AVE	Average Variance Extracted
ATT	Attractiveness
EXP	Expertise
TP	Telepresence
ITT	Interactivity
PE	Perceived Enjoyment
FE	Flow Experience
IPB	Impulse Purchase Behavior

PREFACE

This research was conducted under the requirement of Universiti Tunku Abdul Rahman to complete the degree study of Bachelor of International Business (Honours). Besides, due to the improvement of Internet Technology, social media platforms such as TikTok have begun offering businesses the opportunity to conduct live streams for selling products. Therefore, for the success of local marketers and businesses, it is very important to investigate consumer behavior like impulse purchase behavior in the live streaming of TikTok. Unfortunately, the research related to the characteristics of TikToker that can drive consumers to make impulse purchases is insufficient and limited in Malaysia. As a result, it was suggested to conduct a research study on antecedents of perceived enjoyment and flow experience in impulsive purchase behavior in the context of TikTok Malaysia.

ABSTRACT

Due to the rapid growth of the e-commerce market in Malaysia, TikTok has become one of the popular platforms that Malaysian consumers to make online purchases. Consequently, it is very important to delve into the factors driving Malaysian consumers to purchase during the TikTok live streaming. Therefore, the purpose of this study is to examine the antecedents of perceived enjoyment and flow experience in impulsive purchase behavior from the perspective of TikTok users which are attractiveness, expertise, telepresence and interactivity. In addition, this research has collected a total of 388 sets of questionnaires from Malaysian consumers who had previously experienced in purchasing through TikTok live streaming. Besides, this study specifically targets individuals from Generation Z and Y residing in the Klang Valley region. In addition, SMART PLS is being used to test the proposed hypothesis and data analysis.

Furthermore, the Stimulus Organism Response (SOR) model was used as a theoretical model in this research to investigate the impact of attractiveness, expertise, telepresence and interactivity on perceived enjoyment and flow experience, ultimately leading consumers to make impulse purchases.

Apart from that, the findings of this research showed that variables such as attractiveness and expertise have a positive impact on perceived enjoyment, ultimately driving impulse purchase behavior among consumers. Similarity, the variables like telepresence and interactivity have a significant relationship with flow experience, leading the consumer to make an impulse purchase. Lastly, this study also consists of theoretical implications, managerial implications, limitations and recommendations for future research.

CHAPTER 1: RESEARCH OVERVIEW

1.1 Research Background

Advances in technology and communication have significantly changed the way we live and how we communicate. These advancements in media technology have ushered in a new mode of communication known as 'New Media', which includes social media (Sumanti et al., 2022). As Internet technology has evolved, these social networking sites have developed tremendously into social shopping platforms. For instance, from static text and image-based to a more dynamic multimedia experience. Social media is now becoming an essential component of the larger e-commerce business (Lee & Chen, 2021). Douyin, for example, was introduced in September 2016 and has since become the dominant platform for sharing short video content (Chen et al., 2021). Moreover, this platform permits users to create, share and post short videos, enhancing them with music, filters and effects if desired.

Nonetheless, for the market outside of China (Anderson, 2021), TikTok introduced worldwide in 2017 (Ma & Hu, 2021), is considered a strong competitor to other similar functions of social media platforms such as Facebook and Instagram. According to Nilsson et al. (2023), in the year 2021, TikTok became the most popular app, with 656 million worldwide downloads. It is also a faster-growing social networking site and shopping compared to other platforms. Figure 1.1 shows the trend of TikTok's quarterly downloads from 2017 to 2023. The statistics indicates that users of TikTok continually increased quarterly, especially in the year 2020, which indicated a total of 981 million downloads due to the global pandemic. This surge can be attributed to the fact that, during the pandemic, TikTok emerged as an essential conduit for both the dissemination of information to the public and communication among government

entities and citizens (Chen et al., 2021). Although the number of downloads slowed down in Quarter 2 2020, the downloads still maintained above average of 150 million.

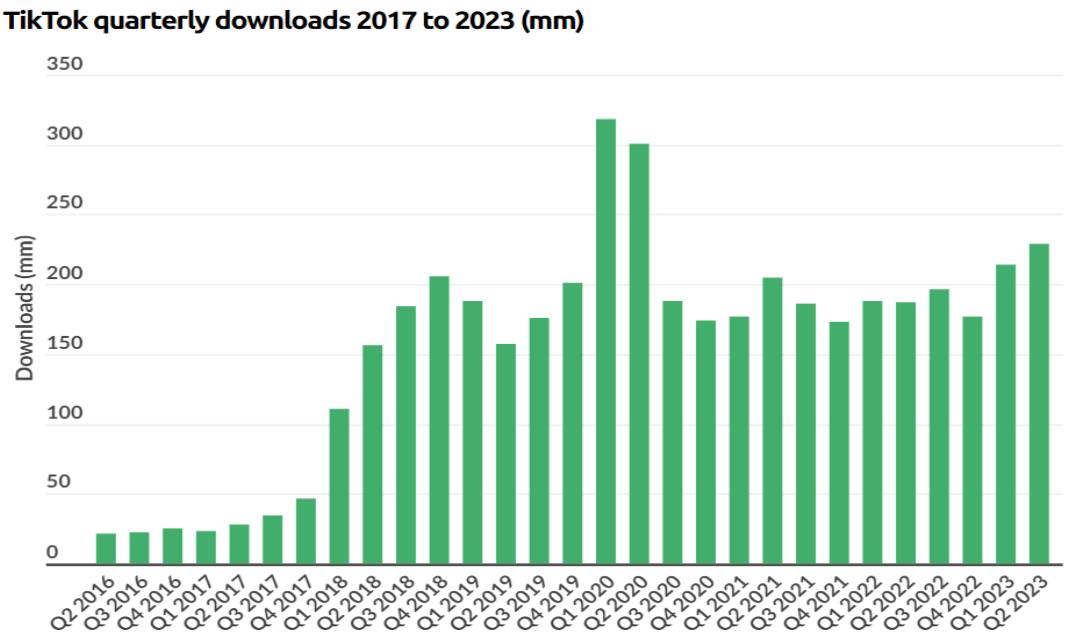

Figure 1.1: TikTok Quarterly Downloads 2017 to 2023 (million). Source: TikTok App Report 2023

Notably, Facebook has 2853 million users, followed by YouTube and Instagram, which have 2291 million and 1386 million active users, respectively (see Table 1.1). Besides, TikTok ranks as the seventh most popular social media in the world which has 732 million users. Surprisingly, Douyin has 600 million users.

Network	Active users (Million)
Facebook	2853
YouTube	2291

WhatsApp	2000
Instagram	1386
FB Messenger	1300
WeChat	1242
TikTok	732
QQ	606
Douyin	600
Telegram	550

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Table 1.1: The Active Users of TikTok. Source: Statista (2020).

According to DataReportal (2023), Malaysian TikTok users reached 20.08 million users in April 2023. Meanwhile, TikTok advertising has reached 58.7% of Malaysians, and 60.6% of Malaysian Internet users (see Figure 1.2). Apart from that, TikTok advertisement reach in Malaysia improved by 4.7 million, marking a 32.3% increase between the beginning of 2022 and the beginning of 2023, according to ByteDance. Not only that, between October 2022 and January 2023, the potential reach of TikTok advertisements in Malaysia increased by 723 thousand, representing a 3.9% rise (Kemp, 2023). This is because the advertising messages are displayed underneath short videos, embedding product links within the advertising content, thereby enhancing the accessibility of TikTok's users (Yuan et al., 2022).

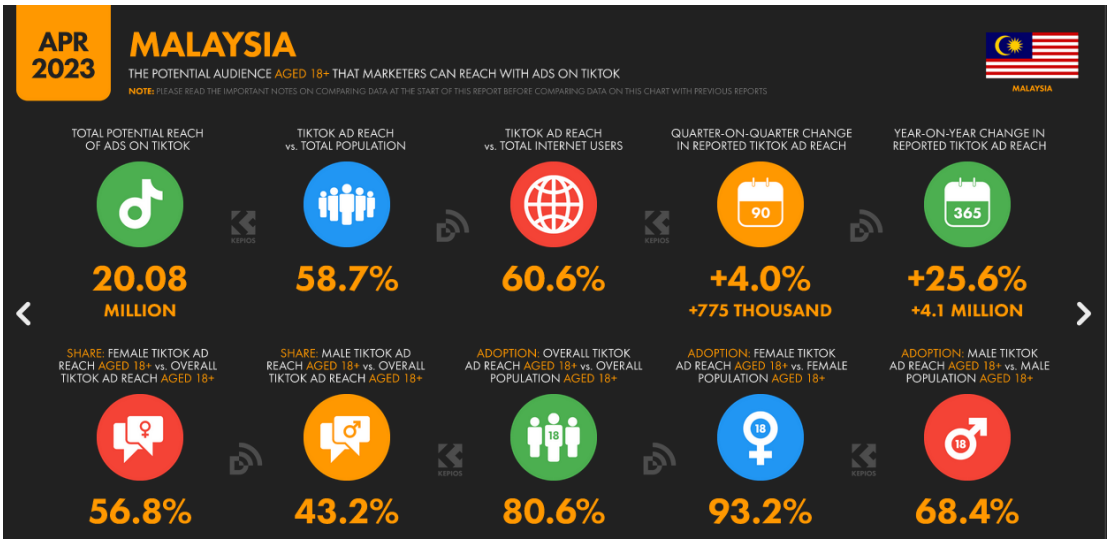


Figure 1.2: TikTok Users, Stats, Data & Trends. Source from DataReportal

TikTok is not only a popular social commerce platform but also allows its TikTokers to sell products through the TikTok shop and shop on TikTok live (Ardiyanti, 2023). In each TikTok live session, TikToker will engage with viewers and feature some unique deals to arouse the viewers' purchasing desire. Viewers may be attracted by the product presented by TikToker and further ask for information related to the product in the comment box. They also can add the desired products to their cart for future checkout. Not only that, TikToker may also sell more passively via making and posting short videos on their TikTok account. These videos can be used to attract and retain customers by providing in-depth product knowledge, promoting special offers, conducting giveaway sessions as well and announcing users regarding upcoming live-streaming events. This passive marketing method enables TikToker or creator to reach their target audience in a more visually engaging and informative way, building interest and anticipation even outside of live sessions (Ahmadi & Hudrasyah, 2022).

The presence of these TikTok features also triggers impulsive emotions and responses to its users/viewers at the same time. This is due to the reason that TikTok's live

streaming feature simplifies the process for consumers to products search, allowing them to ask questions directly. This quick question and answer thereby causes unplanned purchase decisions, which are also known as impulse purchases (Ardiyanti, 2023). 'Impulsive purchases' can be described as the purchasing process conducted by consumers without considering the product's necessity and without actively seeking information about the product (Salsabila et al., 2023). According to a study conducted by Ardiyanti (2023), TikTok shop has a substantial impact on impulsive purchase behavior among adolescents. Referring to Figure 1.3, the revenue of TikTok has increased year by year from 2017 to 2023. This suggests that TikTok live stream commerce is generating significant revenue and bringing social commercial opportunity for TikTokers. In short, live-streaming e-commerce is a new way of online shopping developed based on traditional e-commerce, representing an advancement of the traditional e-commerce paradigm (Huang & Suo, 2021).

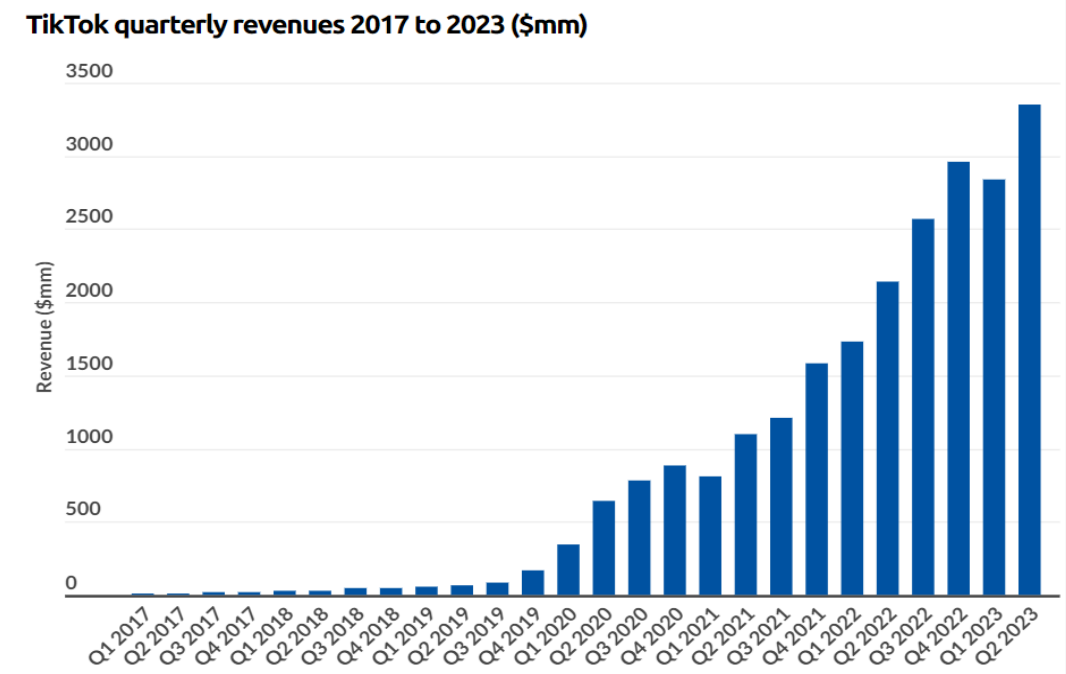


Figure 1.3: TikTok Quarterly Revenue 2017 to 2023. Source: TikTok App Report 2023

As discussed above, it shows that livestream commerce is a rapidly growing industry. Notably, in early 2023, according to ByteBance, there were 19.3 million Malaysian TikTok subscribers (Datareportal, 2023). However, there has been relatively little research and discussion on impulse purchases in this setting, particularly in Malaysia. This draws attention to the need to investigate impulse purchase behavior for this study. Besides, numerous research studies have explored the impact of social media influences on the intentions of their users. However, there is a scarcity of research focusing on how TikToker affects their users' tendencies for impulsive online buying. In previous studies, researchers concentrated on impulse purchase behaviors on platforms like Instagram (Saputra, 2023), Facebook (Chen et al., 2016), and other Chinese social media, including TaoBao (Zhang, 2022). In response to (Koay et al., 2021), is extremely valuable for marketers looking to gain insight into the factors driving impulsive purchases on TikTok. Besides, the growth in TikTok adoption and its impact on business revenue during the pandemic has highlighted new business opportunities, but the outlook for the post-COVID-19 era remains uncertain. Moreover, as the COVID-19 crisis reshaped people's lives, the effect on consumer behavior has significantly changed (Veselovská et al., 2021). Thus, revisiting the factors that influence consumers' impulse purchases through TikTok is worth investigating from time to time.

To sum up, there has been relatively less attention on examining impulse purchases on TikTok. The findings of this study are expected to benefit TikTokers in establishing effective marketing strategies and prioritize the aspects that have a greater effect on consumers' impulsive purchase intentions. It also allows TikToker to gain a better understanding of how to offer a better shopping experience when showcasing their product during the live stream, triggering an impulse purchase.

1.2 Problem Statement

The global rise of live-stream commerce has prompted numerous empirical research into consumer impulse purchases behavior within the context of live-streaming, with a particular focus on China (Kei, 2023). Although numerous studies have investigated consumer behavior and impulse purchases on TikTok, particularly in Malaysia is still unknown. This has resulted in an industry knowledge deficit in understanding impulse purchases on TikTok. Since TikTok live streaming has become popular in Malaysia lately, it is particularly essential to investigate the characteristics and role TikToker play in live shopping affects impulse purchase behavior among Malaysian consumers during live streaming.

Apart from that, perceived enjoyment impacts consumer impulse purchase behavior. Prior research by Lee et al. (2021) indicated that perceived enjoyment plays a significant role in causing consumers' impulsive purchase behavior. They often experience emotional responses, which may cause them to buy without thinking (Lee et al., 2021). Similarly, the research findings of Moreno et al. (2022), Do et al. (2020) and Lee and Chen (2021) research findings also support this argument. However, previous research only focus on Facebook (Joo, 2022) and Instagram (Handayani et al., 2018) in this area, making it difficult to come out with conclusive findings about the effect of perceived enjoyment on impulsive purchases on TikTok platforms. Thus, there is a need to explore the effect of perceived enjoyment on consumer impulsive purchases behavior in the context of TikTok.

In today's digital world, live shopping has become a popular online marketing technique, and it has a strong link with the concept of the 'flow' experience. Thus, streamers, such as TikTokers play an important role in improving the flow experience for customers. The previous study claimed that streamer interaction is one of the

reasons that could improve the flow experience which also enhances consumer's perceived hedonic shopping value (Li et al. 2023). According to Lee et al. (2021), to increase the understanding of the reason streamers cause consumers to purchase impulsively, flow experience is vital to be integrated into future research. Apart from that, the impact of flow experience affecting impulse purchase behavior is inconsistent. Another study shows that 'flow experience' is a determinant of impulsive purchases on TikTok, however, these findings are not conclusive (Barta et al., 2022). Given this inconclusive finding and the fact that researchers always disregard the importance of the flow experience, hence, there is a need to investigate the extent to which 'flow experience' influences impulsive purchase behavior on TikTok.

Furthermore, according to Lin et al. (2023), various research studies have used the SOR model to explain consumer behaviors. For example, Sherman et al. (1997) used the SOR model to investigate the potential impact of store environment and emotional states on consumer buying behavior; Kimiagari and Asadi Malafe (2021) also used the SOR model to explain the role of cognitive and affective responses in the connection between internal and external stimuli and impulse purchases behavior. However, due to the advancement of technology nowadays, the influence of digital technology and social media has become more profound and pervasive in various aspects of our lives. Hence, this study attempts to use the SOR model to re-examine the relationship between the characteristics of TikToker and impulsive purchases in the context of Malaysia.

Attractiveness of the streamer is a decisive factor affecting consumers' impulsive purchase behavior. This is because, if the streamer's physical attractiveness is attractive, the consumers might feel that the streamer can trigger perceived enjoyment and thus can lead to impulse purchase of the product (Joo, 2022). Although the attractiveness of the streamer has been confirmed by previous studies, it will directly affect consumer

impulse purchase behavior (Abdullahi et al., 2020). In response to this, the SOR model posits that the stimulus leads to an organism, which in turn leads to a response; thus, it is argued that attractiveness has a significant impact on perceived enjoyment, which in turn leads to impulse purchase. Nevertheless, similar studies were found to be limited. It is worth the present study to validate the relationship using the SOR model in the Malaysian consumer context.

According to Liu et al. (2023), expertise is one of the critical determinants that influence perceived enjoyment due to the reason that consumers have a natural tendency to engage with other users who are knowledgeable and have a good understanding of brands and products. It is argued that expertise is a stimulus to perceived enjoyment (Lee & Chen, 2021). Moreover, according to Lee and Chen (2021), the expertise of streamers is the stimulus that will trigger the audience's perceived enjoyment, which leads to impulse purchases on TikTok. However, research on how expertise influences consumer perceived enjoyment and, as a result, triggers Malaysian consumers' impulse purchase behavior is scarce. Therefore, using the SOR model, it is necessary to investigate the impact of expertise on the perceived enjoyment of TikTok live-streaming products, especially in the Malaysian context.

Interactivity is the fundamental feature of live streaming that facilitates marketing communication. Undeniably, the success of live streaming also is due to this ability to provide real-time interaction compared to traditional e-commerce (Kei, 2023). However, there is a scarcity of empirical studies that investigate the interactivity of TikTok's impact on flow experience and later influence impulse purchase behavior in Malaysia (Zheng et al., 2023). Previous studies such as (Kong, n.d.) on impulse purchase behavior in the context of e-commerce in China have suggested there is a need for further investigation of the effect of interaction. In response to the author's suggestion, the present study attempts to explore the antecedent of interactivity, as one

of the factors affecting flow experience, which later triggers impulse purchase behavior among Malaysian consumers on TikTok.

According to Ming et al. (2021), in live streaming commerce, enhanced telepresence can draw the attention of a larger audience and encourage them to engage with the content, causing them to become engrossed in the live steam on the spur of the moment, resulting in a heightened sense of focus and delight. Nonetheless, the author of prior research suggested that it is required to focus on different types of social media platforms other than Facebook and do comparison research within those social media platforms (Hung et al., 2022). In short, the focus on telepresence in the context of TikTok is relatively unexplored. Furthermore, according to the SOR model, to the best knowledge, examining the telepresence as the antecedent factor influencing flow experience and thus further triggering impulse purchase is still limited. Thus, the effect of telepresence on flow experience and then further impact on impulse purchase behavior is worth being examined.

1.3 Research Questions

As discussed above, the features of TikTok shop and livestream bring potential live-streaming business opportunities due to online impulse purchases (Rizqi Febriandika et al., 2023). Nevertheless, the antecedent of perceived enjoyment and flow experience leading to impulse purchase is not conclusive from the Malaysian context. According to the SOR, there is evidence to suggest that the characteristics and role of the TikToker affect the audience's emotion (organism) during live streaming commerce, which could result in impulsive purchases (Wang et al., 2023). Hence, based on the previous discussion, this study addresses the following main research questions:

- Do perceived enjoyment and flow experience affect the impulse purchase behavior on TikTok?
- Do the attractiveness and expertise of TikToker affect the perceived enjoyment?
- Do interactivity and telepresence of TikToker affect the flow experience?

Specifically, the following are the research questions:

- Is there a significant relationship between perceived enjoyment and impulse purchase behavior?
- Is there a significant relationship between flow experience and impulse purchase behavior?
- Is there a significant relationship between expertise and perceived enjoyment?
- Is there a significant relationship between attractiveness and perceived enjoyment?
- Is there a significant relationship between telepresence and flow experience?
- Is there a significant relationship between interactivity and flow experience?

1.4 Research Objectives

This study aims to utilize the SOR model to address the above research questions. Firstly, this study investigates the influence of perceived enjoyment and flow experience on impulse purchase behavior on TikTok. Secondly, this study aims to explore the effect of expertise and attractiveness of TikToker on perceived enjoyment of TikTok. Thirdly, this study also examines the effect of telepresence and interactivity of TikToker on flow experience on TikTok. Hence, below are the specific research objectives of this study:

- To investigate the relationship between perceived enjoyment and impulse purchase behavior on TikTok.
- To investigate the relationship between flow experience and impulse purchase behavior on TikTok.
- To determine the relationship between expertise and perceived enjoyment.
- To determine the relationship between attractiveness and perceived enjoyment.
- To determine the relationship between telepresence and flow experience.
- To investigate the relationship between interactivity and flow experience.

1.5 Scope of Study

This study investigates the determinants of perceived enjoyment and flow experience, which in turn trigger impulse purchases behavior among Malaysian TikTok consumers. Thus, the scope of the study is limited to the individual who is Malaysian consumers who belong to the generation Y and Z cohort and also reside in Klang Valley. Individual TikTok subscribers are the targeted respondents, hence the unit of analysis is individual TikTok consumers. Specifically, the targeted individual must have their own TikTok account and also an audience for TikTok live shopping. To reach the targeted respondents, an online survey will be established.

1.6 Significant of Study

In this era of technological advancement, an increasing number of new e-commerce or social commerce platforms and online marketplaces are emerging and growing rapidly.

Even TikTok, which originally focused on entertainment content, has now been involved in retail and social shopping by introducing the TikTok Shop application (Ardiyanti, 2023). However, research and discussion of TikTok in live stream commerce in Malaysia are relatively less compared to China. Therefore, this research aims to uncover how Malaysian TikTokers can influence and drive Malaysian impulsive purchase behavior. These findings will be valuable for marketers and researchers as they provide important insight into TikTok in the context of Malaysia and its impact on consumer impulse purchases.

Besides, due to the continuous growth of the live streaming phenomena in Malaysia, it is necessary to examine the relationship between the live streaming seller and the impulse purchase behavior of consumers during the live streaming session (Kei, 2023). However, previous research focusing on how TikToker affects consumers to make impulse purchases remains unclear and it cannot be generalized to the Malaysian setting. Hence, this research yielded valuable insight into the impulse purchase patterns of consumers in Malaysia within the context of TikTok live streaming. This knowledge can be a reference or instrumental for businesses and marketers to comprehend the decision-making processes of consumers during live streaming on TikTok and identify the characteristics of TikToker that cause consumers' impulse purchase behavior. Additionally, this insight can assist existing TikToker or live streamers to design sustainable marketing strategies that align with consumers' preferences and drive sales growth.

Furthermore, this research also offers insight that significantly benefits TikTok marketing practitioners and live streamers. This research improves understanding and determines the extent to which the factors that trigger Malaysian consumers' impulse purchase behavior. Thus, it offers some ideas on how to engage with TikTok audiences while looking for possible opportunities to improve user experiences.

Additionally, TikToker can use this finding in their engagement strategies by creating more engaging content, ensuring compelling content quality, providing support and encouraging user involvement and interaction. Not only that, these findings can also help practitioners and marketers create revenue-generating and more engaging user experiences on social media platforms, particularly TikTok. Lastly, the findings and insights of this study can provide useful guides to remain competitive and sustainable.

Moreover, the significance of this study to the theory and body of knowledge lies in its application of the SOR framework. By utilizing SOR, the predictive power of SOR provides a better understanding regarding the characteristics and roles of TikToker plays which leads to impulse purchase behavior among Malaysian consumers in the context of TikTok live streaming. Thus, this knowledge is crucial for developing effective marketing strategies and enhancing consumer experiences on TikTok, ultimately contributing to the advancement of theory and practice in the field of digital marketing.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

In this research, four independent variables have been developed, which are attractiveness, expertise, interactivity, telepresence, perceived enjoyment and flow experience to investigate the dependent variable, which is impulse purchases. Moreover, this chapter presents a comprehensive literature review of both independent and dependent variables, along with the development of hypotheses. Besides, the theoretical framework will be discussed accordingly. Subsequently, the conceptual framework for this study is proposed.

2.1 Conceptualization

2.1.1 Impulse Purchases Behavior

According to Li (2023), impulse purchase behaviors is defined as the act of making a purchase without any pre-shopping plan or a specific intention to buy a particular product item or to address a specific need. Apart from that, impulse purchase behavior typically tends to happen all of a sudden and it is usually unplanned and closely tied to feelings of joy and thrill as well as desires during shopping (Li et al., 2023). In the same vein, impulse purchase is defined as

buying something suddenly and immediately with no purchase intent, no specific purchase task, no specific product category in mind and little consideration of alternatives during the purchase process (Liu et al., 2023).

Lin et al. (2023) describe impulsive purchases as a quick and unanticipated purchase made with no previous thought or careful consideration and it also can seem to be a sudden behavior that breaks away from the usual shopping routine, driven mainly by pleasure-seeking. Notably, impulse purchases also be seen as appealing, unplanned and hedonically complex purchases by consumers (Kong, n.d.). The SOR model also explains impulse purchases as an abrupt and unconsidered purchasing choice customers make in response to a powerful and compelling stimulus within their shopping experience (Leong, 2022). Similarly, Joo (2022) defined impulse purchases is a pleasure-driven buying action that is spontaneous, unplanned and compelling.

In this study, the concept of impulse purchases defined by Kei (2023) is adopted. An impulse purchase is a spontaneous buying decision made by customers during the shopping process due to the influence of the shopping environment and strong emotional reactions (Kei, 2023). In other words, it is the decision to purchase goods and services without prior planning or sudden decision (Ardiyanti, 2023). Thus, impulse purchase is hurried, compelling, unexpected and hedonistic purchasing behavior that lacks a comprehensive evaluation of all available information and alternatives (Hung et al., 2022).

2.1.2 Perceived Enjoyment

According to Moreno et al. (2022), perceived enjoyment can be defined as the level of satisfaction during the online transaction on a particular website, particularly in terms of how the website's features and interactions bring them joy or happiness. Meanwhile, according to Joo (2022) in the context of the online environment, perceived enjoyment relates to how engaging the use of a website is seen as being entertaining and any predicted performance repercussions. On the other hand, perceived enjoyment can also be described as the degree to which the activities of using specific features of an image-sharing platform are perceived as enjoyable by the users (Xiang et al., 2016). Moreover, perceived enjoyment is also described as the extent to which an individual experiences feelings of positive, happiness or satisfaction with a particular situation (Lin et al., 2023). In the same vein, perceived enjoyment refers to the degree to which an individual experiences internal feelings of pleasure while interacting with a specific environment (Kei, 2023).

Cha (2011) refers perceived enjoyment as "the degree to which the activity of using the system is perceived enjoyable in and of itself, without considering any expected performance outcomes." From the information system context, perceived enjoyment can be described as the measure of an individual's inherent motivation or desire to use a specific system (Hasan et al. (2021). Likewise, it can also be referred to as an indicator to measure the degree of joy or fun in the virtual world (Bleize & Antheunis, 2019). However, Ulann et al. (2016) have a different interpretation of perceived enjoyment and define perceived enjoyment as the extent of satisfaction experienced when they make online purchases.

In this study, the concept of perceived enjoyment defined by Hasim et al. (2020) is adopted. It is the level of enjoyment that an individual obtains from an activity that is individually enjoyable in its own right.

2.1.3 Flow Experience

The term "flow" refers to a state of mind in which people become fully engaged in the ongoing activity (Ming et al., 2021). In the same vein, flow refers to the sensation that an individual entirely spends his energy on a particular activity (Li et al., 2023). Sun et al. (2021) explained that flow experience is defined as the process through which individuals derive pleasure and a sense of well-being by engaging in a specific activity. Similarly, Li et al. (2023) stated that online flow experience refers to the state in which consumers become fully immersed in a specific online activity, which also appears in live shopping.

According to Bao and Huang (2018), flow experience can be seen as a form of concentrated focus, a sense of control and the absence of self-consciousness. In this state, individuals will become deeply involved in the activities they engage in thereby free from outside distractions and interferences. Therefore, flow experience means a specific type of positive emotion related to a sense of pleasure. It is characterized by an intense focus and wholehearted dedication to the task or goal at hand (Zhu et al., 2022).

Blythe and Hassenzahl (2018) described the flow experience as the peak experience of being totally into an activity. Flow experience is referred to as a

holistic experience while being fully engaged in an activity, resulting in optimal satisfaction and pleasure (Wei et al., 2018). Therefore, flow can be defined as "the wholistic sensation we experience when we act completely involved" (Li & Peng, 2021). In short, it is a state in which an individual obtains pleasure and a sense of well-being by engaging in particular activities (Sun et al., 2021).

In this study, the concept of flow experience defined by Shahpasandi et al. (2020) is adopted. It is a psychological experience that surrounds the individual who is actively and completely immersed in it, causing them great joy and excitement.

2.1.4 Attractiveness

According to Liao et al. (2023), attractiveness is about how good looking a person is. Attractiveness can be defined as the measurement of an influencer's qualities, including physical appearance, grace and good voice (Lin & Nuangjamnong, 2022). Attractiveness is the degree of appeal the streamers hold for their audience (Li & Peng, 2021). It includes the streamer's physical attractiveness but also includes things like behavior and personality of a streamer.

Jaitly and Gautam (2021) assert that attractiveness is essentially a set of positive connotations associated with an individual, and it extends beyond physical attractiveness to include qualities such as athleticism and personality. Meanwhile, Li (2021) also stated that attractiveness as a component of the

credibility construct is defined as an individual possessing not only a physically appealing appearance but also other associated characteristics. Moreover, attractiveness encompasses qualities such as physical beauty, charm, appeal, and being good-looking or beautiful (Chiu & Ho, 2023). In the same vein, attractiveness is described as the measure of sophistication, elegance, beauty and sensuality that a source possesses (Ahmadi & Hudrasyah, 2022). Likewise, Joo (2022) argues that attractiveness is the method consumers and users assess and perceive various aspects to measure the streamer's physical attractiveness, including the factors of expertise, looks, personality, expertise, skill as well as lifestyle. Also, Koay et al. (2021) measure attractiveness as the degree to which an influencer is perceived as sexy, beautiful and classy.

In this study, the concept of attractiveness is defined by Xu et al. (2020). It is defined as the viewers' perceptions of the streamer's personality, appearance and talent while watching the live streaming.

2.1.5 Expertise

Expertise is defined as the significant level of skill and knowledge that can serve as a stimulating factor for consumers (Lee & Chen, 2021). It is 'the extent to which the endorser is perceived to possess the knowledge, skills and experiences to effectively promote the products' (AlFarraj et al., 2021). Expertise also refers to "authoritativeness," "qualification," as well as "competence" all of which represent an individual's amount of knowledge in a particular domain (Chen & Zhou, 2022). Therefore, expertise is the experience

and knowledge of live streamers about the goods and services conveyed by linguistic expression.

Besides, according to Fan and Miao (2012), expertise is linked to the capability to process information effectively. Filieri et al. (2018) stated that source expertise is determined by consumers' perception of the skill, knowledge or expertise possessed by a source in a particular domain or field.

Expertise includes qualities such as skilled, experienced, reliable, expert as well and qualified when it comes to promoting a product or brand (Chiu & Ho, 2023). Jaitly and Gautam (2021) claimed expertise reflects the knowledge and experience of the communicators. In online commerce, it is the extent to which an influencer is perceived to possess the necessary knowledge, ability or experience to effectively promote and sell the products (Lin & Nuangjamnong, 2022). However, expertise is also often defined as "authoritativeness," and it includes the experience, knowledge and capabilities of a live streamer (Li & Peng, 2021). Thus, in live-stream commerce, expertise can be defined as the knowledge, skill and ability demonstrated by the streamer during the live-streaming session (Liao et al., 2023). Expertise is the degree to which a communicator is perceived as a reliable source of accurate and valid assertions (Zafer, 2010). In the same vein, endorser expertise is referred to as the endorser's ability to make a valid statement as evaluated by audiences (Wen et al., 2009).

This study adopts the concept of expertise defined by Guo et al. (2022) is adopted. It is the consumer perceives the expertise of a TikToker by evaluating

their knowledge, experience, achievement and qualification related to the product demonstrated in live stream commerce.

2.1.6 Interactivity

Chen et al. (2022) argue that interactivity is a crucial environmental factor that allows customers to actively engage with, manipulate or customize product information according to their preferences, enabling more personalized and immersive experiences. Interactivity is the way in which the communicator and the viewers respond to their communication requirements (Lin et al., 2023). Interactivity also refers to "the ability for organizations and individuals to directly communicate with each other regardless of distance or time constraints (Kei, 2023). It is the capability of users to modify the form and content of a mediated environment in real-time (Do et al., 2020).

According to Ahmadi and Hudrasyah (2022), interactivity refers to the customer's personal perception of high-quality interaction with the seller. It is the "degree of information exchange" between customers and sellers (Li & Peng, 2021). In online commerce, online sellers can establish a two-way. In this setting, messages within a sequence are interconnected particularly the extent to which later messages clarify the connection between earlier messages (Coyle & Thorson, 2001).

Aussavadeegool (2005) asserts that interactivity is the perception that each individual has from their psychology to the communication process.

Interactivity includes the reciprocal communication and responsiveness that take place between customers and producers, as well as consumers and advertisers (Amalia & Widodo, 2023). It is the extent to which customers participate in social shopping activities, and generate and distribute information to gain approval or recognition within an online community (Lim et al., 2022).

In this study, the concept of interactivity defined by Joo and Yang (2023) is adopted. It refers to the extent to which a communicator technology can establish a mediated environment enabling participants to engage in communication.

2.1.7 Telepresence

Telepresence can be defined as a sense of immersion in the virtual purchasing environment qualifies how much the viewer feels like they are truly present and engaged in a computer-mediated environment (Zhu et al., 2022). Meanwhile, Chen et al. (2022) also stated that telepresence is the sensation of being present in a mediated or virtual environment. Telepresence can happen when the media can induce the feeling that a person is physically present either in a real location or within a virtual environment (Shahpasandi et al., 2020). It describes the degree to which online shopping can stimulate direct experiences (Shen & Khalifa, 2012).

Peng et al., (2022) found that telepresence is an immersive online experience that combines the sensation of being accessible and immersion, making

consumers highly focused and deeply engaged in the experience. Thus, telepresence describes the feeling of complete immersion in an environment that appears to be natural, even though it may not be physically real. Telepresence is achieved through a synergy of tangibility and power of imagination (Ghazali et al., 2023).

In the online commerce context, the term telepresence refers to the sensation of closely emulating the experience of shopping in a physical store while engaging in online shopping (Zhu et al., 2022). In other words, consumers can have a similar sense of shopping in a brick-and-mortar store when they visit an e-commerce website, creating a virtual shopping experience that mimics their real-world counterpart. Therefore, telepresence measures how much a shopper can feel like they are really immersed in a virtual shopping environment as if they can physically engage with the products (Ye et al., 2020).

In this study, the concept of telepresence defined by Li and Peng (2021) is adopted. It is the experience of being present in an environment through the use of a communication medium.

2.2 Hypothesis Development

2.2.1 The Relationship between Perceived Enjoyment and Impulse Purchases Behavior

Perceived enjoyment in the context of online purchase refers to the satisfaction level that consumers experience on a specific website in terms of the capacity to offer them fun rather than the functional performance they will experience (Ulann et al., 2016). In the same vein, perceived enjoyment can also be defined as the degree to which engaging with the system or activity is inherently enjoyable, apart from any expected performance outcomes or consequences (Sun & Zhang, 2006).

According to Do et al. (2020), consumers' emotional experiences strongly and positively influence their impulsive purchase behavior. This is because the more people enjoy themselves on the internet, the more likelihood of make an online purchase (Wu & Ye, 2013). Xiang et al. (2016) found that as intrinsic enjoyment increased, a user's exploratory behavior could be stimulated. This argument has been supported by numerous studies stating that when consumers have enjoyed pleasant experiences, they tend to keep exploring the online store, resulting in unplanned purchases (Hidayah et al., 2021; Xiang et al., 2016; Barta et al. 2022). This is the same as in the case of the Philippins, where perceived enjoyment has a significant impact on impulse purchase behavior (Moreno et al., 2022). Likewise, Xiang et al. (2016) and Lee et al. (2021) asserted that perceived enjoyment affects the Chinese' impulse purchase behavior.

Apart from that, Kristi et al. (2023) found that perceived enjoyment has a positive impact on the urge to purchase impulsively in buying online fashion products on live Instagram and TikTok. This explains the feeling of pleasure and arousal would lead to impulsive purchases. Besides, Karim et al. (2021) and Liu (2023) also confirmed that perceived enjoyment has a significant positive impact on online impulse purchase behavior. This is due to the reason that the more enjoyment people perceive when using the online platform, the

higher the probability of making impulsive purchases behavior (Karim et al., 2021).

In short, perceived enjoyment can cause consumers to make impulse purchases behavior. There is, however, limited study of the relationship in Malaysia. therefore, there is a need to validate the relationship in the Malaysian context.

Hence, it is proposed that:

H1: Perceived enjoyment has a significant impact on impulse purchases

2.2.2 The Relationship between Flow Experience and Impulse Purchases Behavior

Flow experience is correlated with elevated levels of positive affect and is characterized as a comprehensive engagement in the present activity. It represents an "optimal experience" accompanied by inherent pleasure (Wei et al., 2018). In recent years, flow experience has emerged as an important aspect of improving the online buying experience (Hoang & Khoa, 2022). This is due to the reason that individuals who undergo a flow experience are more likely to entertain themselves and explore shopping and they tend to buy more items (Wei et al., 2018). Ming et al. (2021) argued that entering a flow state during shopping can encourage impulsive purchases as the surge in positive emotions tends to increase the likelihood of consumers making an impulsive purchase. Similarly, Bao and Yang (2022) also proved that experiencing of flow state can

create positive attitudes among online consumers, contributing to an enhanced pleasant experience, resulting in buying impulsively.

As customers experience the flow states, their decisions become less deliberate and potentially lead to buying products that were not initially part of their planned purchases (Barta et al., 2022). Besides, Lina and Ahluwalia (2021) have supported that flow experience has a significant effect on consumer's impulsive purchases. These results are consistent and in accordance with the research of Huo et al. (2023) and Hoang and Khoa (2022). Likewise, the study of Shahpasandi et al. (2020) in the context of Instagram has stated that flow experience has a positive effect on impulse purchases. This is because when people are in the flow state, they are more attentive and focused, leading them to pay close attention to potential items they may be interested in purchasing. Apart from that, a study of Shopee also has confirmed that flow experience has a positive and significant influence on impulse purchase behavior (Hidayah et al., 2021).

Thus, it is proposed that:

H2: Flow experience has a significant impact on impulse purchases.

2.2.3 The Relationship between Attractiveness and Perceived Enjoyment

In this study, the attractiveness of the streamer refers to the individual's personality, talent and appearance that viewers perceive in relation to the

streamer during the live stream (Xu et al., 2020). According to AlFarraj et al. (2021), attractiveness can be defined as a stereotype encompassing positive associations with a person, involving not only physical appeal but also other attributes such as personality and athletic ability. Therefore, good-looking people can stimulate positive affective responses (Guo et al., 2022).

Joo (2022) and AlFarraj et al. (2021) found that attractiveness has a positive significant relationship with perceived enjoyment. This is because an attractive streamer can serve as an engaging social actor, offering fantasy and pleasure to viewers in live streaming thereby stimulating their sustained participation and interest (Xu et al., 2020). Consequently, the viewers may spend more time and increase the frequency of their engagement in watching a live stream if they think the streamer is attractive to them (Xu et al., 2020). Similarly, Lee and Chen (2021) have also found that Chinese consumers' perceived enjoyment is affected by streamer's attractiveness in the context of live streaming commerce.

Moreover, Ren (2021) argued that the viewers of live streaming perceive enjoyment when they see the live streamer in a good mood. Likewise, Laosuraphon and Nuangjamnong (2022) stated that the streamer's unique characteristic such as humor, verbal attractiveness, and physical attractiveness contributes significantly to audience enjoyment and attract customers to stay. Thus, the attractiveness of live streamers increases the perceived enjoyment of viewers, which then leads to impulsive engagement (Xi et al., 2023). Besides, Kristi et al. (2023) confirmed that attractiveness has a positive and significant influence on perceived enjoyment in buying online fashion products on live Instagram and TikTok in Indonesia.

Thus, it is proposed that:

H3: Attractiveness has a significant impact on perceived enjoyment

2.2.4 The Relationship between Expertise and Perceived Enjoyment

Expertise has demonstrated a substantial impact on shaping the attitudes, beliefs and behaviors of consumers (Guo et al., 2022). According to Guo et al. (2022), consumers perceive a streamer's expertise by evaluating their knowledge, experience, qualification, and accomplishment in the context of live streaming or selling related items. Besides, Lou and Yuan (2019) have stated that experts in a particular area have the ability to create enjoyable experiences for their followers. For example, in the context of game video streaming on Twitch, Wulf et al. (2020) stated that interacting with a streamer who is an expert can cause users to become more enjoyable, entertained and comfortable. This is because they may gain a better understanding of the game. Likewise, Guo et al. (2022) also think that streamer with expertise can showcase their product by personally trying it and even engaging in a catwalk-like presentation similar to models. Their expertise in presenting products makes them interesting and enjoyable for consumers, enhancing the shopping experience. This argument is supported by the research of Sim et al. (2023). They found that people can get a lot of enjoyment from watching products shown by a live streamer broadcast.

In addition, Lee and Chen (2021) also argued that expertise positively affects perceived enjoyment because consumers tend to engage more with streamers who possess knowledge about brands and products. Similarly, Chen and Lin

(2018) argued that expertise is one of the elements of celebrity endorsement that can affect the perceived value of followers, such as their sense of enjoyment and pleasure. This finding is confirmed by (Kristi et al., 2023) that expertise has a positive impact on the online purchase of fashion products through Instagram and TikTok in Indonesia. They added customers tend to be more willing to engage with those who possess expertise about brands and products. Hechler et al. (2016) also stated that enhanced expertise contributes to the heightened enjoyment of products by fostering deeper interaction and intensifying emotional experiences.

Hence, it is proposed that:

H4: Expertise has a significant impact on perceived enjoyment

2.2.5 The Relationship between Interactivity and Flow Experience

Interactivity refers to a process that involves reciprocal communication and responsiveness between consumers and producers but also between consumers and advertisers (Amalia & Widodo, 2023). Lin et al. (2023) stated that live-streaming shopping can enhance interactivity between the streamer and consumer as it enables consumers to virtually experience the ambience of shopping in a physical store while being at home, offers the enjoyment of negotiating with the streamer during live-streaming shopping sessions. Li et al. (2023) also support this argument that the streamer's performance can significantly enhance consumers' live shopping experience by fostering interaction, improving the sense of social presence and meeting consumers'

enjoyment more effectively. This is because consumers can feel emotions like excitement and happiness brought by interaction during the live streaming shopping (Zhong et al., 2022).

Previous studies found there is a significant relationship between interactivity and flow experiences. For example, a study from Korea has confirmed interactivity has a significant effect on customer flow (Sung-Ju Kang et al., 2011). Another study in the Netherlands proved that interactivity has a significant influence on the flow experience (van Noort et al., 2012). In short, interaction can facilitate consumers entering a state of flow experience (Li et al., 2023). Apart from that, the study conducted by Li et al. (2023), Li et al. (2018) and Zheng et al. (2023) in China, found that interactivity positively affects the consumer flow. This is due to the reason that real-time video interactions have the capability to establish a highly interactive environment for viewers, potentially immersing viewers in the environment (Li et al., 2018). Other than that, research on tourism e-commerce live streaming also found that interactivity of tourism e-commerce live streaming has a positive effect on the flow experience (Liu et al., 2022). The research also explained that a heightened level of interaction between streamers and consumers can induce emotional and cognitive shifts in the audience leading to an increased understanding of consumers about the streamer and products, which eventually influences consumers' purchase intentions. Moreover, Huang et al. (2019) also argued that live streams of online games offer a wealth of diversity and richness such as real-time chat functions and this creates strong interactivity and leads the viewers to experience a sense of immersion in the gaming environment. Lastly, Guan et al. (2020) also supported that interaction in live streaming can keep viewers busy and immersed in the content due to constant engagement and real-time communication.

Therefore, it is proposed that:

H5: Interactivity has a significant impact on flow experience.

2.2.6 The Relationship between Telepresence and Flow Experience

The concept of telepresence was first introduced by Hoffman and Novak (1996) in their conceptual model. Telepresence means "being there" in an environment that is influenced or experienced via a communication medium (Kang, 2020). According to Shahpasandi et al. (2020), telepresence happens when one feels physically present at either a distance in reality or inside a virtual world through communication tools. During the live streaming session, the live streamer is able to showcase the product features and interact with viewers in real-time through video. The abundant of media elements, like sound and video, enhances the overall sense of telepresence for the audience (Ming et al., 2021). Earlier studies also showed that telepresence is essential in affecting flow experience (Li & Peng, 2021; Zhu et al., 2022). Other studies also support this argument. This is because online shopping websites with strong telepresence can engage customers, causing customers to forget they are in a physical place, ultimately fostering a state of flow. Besides, Wei and Li (2017) claim that live streaming's telepresence empowers individuals to stay focused leading to a state of flow where they feel the time passing rapidly. Moreover, Thailand-based research on mobile learning platforms also confirmed that telepresence positive link to the flow experience (Wei & Li, 2021). Likewise, the study of online learning conducted by Guo et al. (2012) found that telepresence had the strongest effect

size on flow experiences. This is because when people feel a sense of telepresence while using tech tools, it can create a sense of real-time engagement. Such feeling helps the users to focus on their actions and experience a greater sense of control over the virtual environment. Lastly, Liu (2017) argued that the greater the perceived significant of a flow experience for players, the more likely they feel a sense of telepresence. Their research has also confirmed that telepresence influences flow experience.

Thus, it is proposed that:

H6: Telepresence has a significant impact on flow experience.

2.3 Underpinning Theory: Stimuli Organism Response Model (SOR)

According to Clouthier et al. (2017), Stimulus-Organism-Response (SOR) models introduced by Mehrabian and Russell in 1974 are used as the foundation for constructing a theoretical framework. It is a framework that comprises three parts which are stimulus, organism and responses. This model uses the "stimulus-responses" concept while considering the cognitive and emotional aspects of individual organisms as intermediaries to generate distinct approaches or avoidance behaviors (Lin et al., 2023). Additionally, Huo et al. (2023) stated that the SOR model offers a comprehensive framework to show how an external stimulus (S) can lead an organism (O) to be involved in a psychological process resulting in a behavioral response (R). The SOR framework suggests that specific environmental factors lead to particular behavioral outcomes by influencing individual emotional and cognitive states. Hence, it is widely applied in consumer behavior research (Li et al., 2022). In short, the model

aims to incorporate consumer reactions that can help understand how external factors affect people's feelings and the behaviors they exhibit (Joseph & Balqiah, 2022); hence, this model is very suitable for studying compulsive purchasing behavior as it both theoretically and empirically confirms that environmental stimuli elements influence how people think and feel, eventually affecting consumer behavior (Elisa et al., 2022).

Stimulus refers to factors that influence an individual's internal states and may be thought of as an influence that stimulates the individual (Changa et al., 2011). According to Mursid (2021), the stimulus can be the surroundings or external factors that trigger customers' emotions and passions. Li and Peng (2021) also stated that "stimulus" may be defined as "the influence that arouses the individual." Besides, referring to the previous study, the stimulus is a factor specific to the time and location of observation that is unrelated to personal knowledge and stimulus features and has an observable and systematic influence on present behavior (Lee & Chen, 2021). In short, the SOR model defines "stimulus" as an external factor that arouses internal, organismic states (Ming et al., 2021).

Li and Peng (2021) stated that organism refers to affective and cognitive intermediate states, representing a process that comes between the stimulus and an individual's responses. The affective state refers to the emotional reactions of individuals to an environmental stimulus, whereas the cognitive state is linked to the mental processes that occur when encountering a stimulus (Ming et al., 2021). Organism also be defined as an internal process including diverse perceptual, emotive, psychological and mental accomplishments that occur between recognition of a stimulus and the resulting actions (Mursid, 2021). In a similar vein, the organism in the SOR model refers to internal processes and structures that mediate between external stimuli affecting a person and the ultimate actions, responses and reactions they display (Changa et al., 2011). Lee and Chen (2021) defined an organism as an individual's internal state that is

represented by emotive and cognitive states. It is also considered as an intermediate state positioned between stimulus and responses. Thus, “organism” refers to a mediating affective and cognitive state of humans that mediates between the stimulus and an individual’s responses (Ming et al., 2021).

The last element of the SOR model is response. It refers to the result as an individual’s attitude and their intention to behave. The response components may include both approaching and avoiding behaviors (Li & Peng, 2021). Besides, Changa et al. (2011) stated that response is the outcomes and final decisions made by consumers, which might be approach or avoidance behaviors. The response also be defined as the outcome of stimuli and organisms including the ultimate actions, choices and reactions (Mursid, 2021). Lee and Chen (2021) stated that the consequences of customer’s reactions to impulsive purchasing stimuli and their internal appraisals are referred to as responses. In short, “response” is defined as the individuals' ultimate decisions and behaviors based on affective and cognitive states (Ming et al., 2021).

The SOR model has been widely used in the previous study to analyze consumers’ online behavior in e-commerce, including impulse purchase intention, purchase intention and repurchase intention (Ming et al., 2021). The model provides a concise and theoretically justified method to encompass many types of environment stimuli in an online commerce setting, ranging from website content stimuli to social stimuli. Besides, it also enables researchers to investigate the viewers’ cognitive and emotional states in relation to environmental stimuli and their potential subsequent behavior. In a live streaming commerce context, viewers are exposed to a multitude of environmental stimuli (Xu et al., 2020). Thus, the SOR model is suitable to be used to investigate the determinants of TikTok and impulsive purchase behavior from the perspective of TikToker.

2.4 Proposed Conceptual Framework

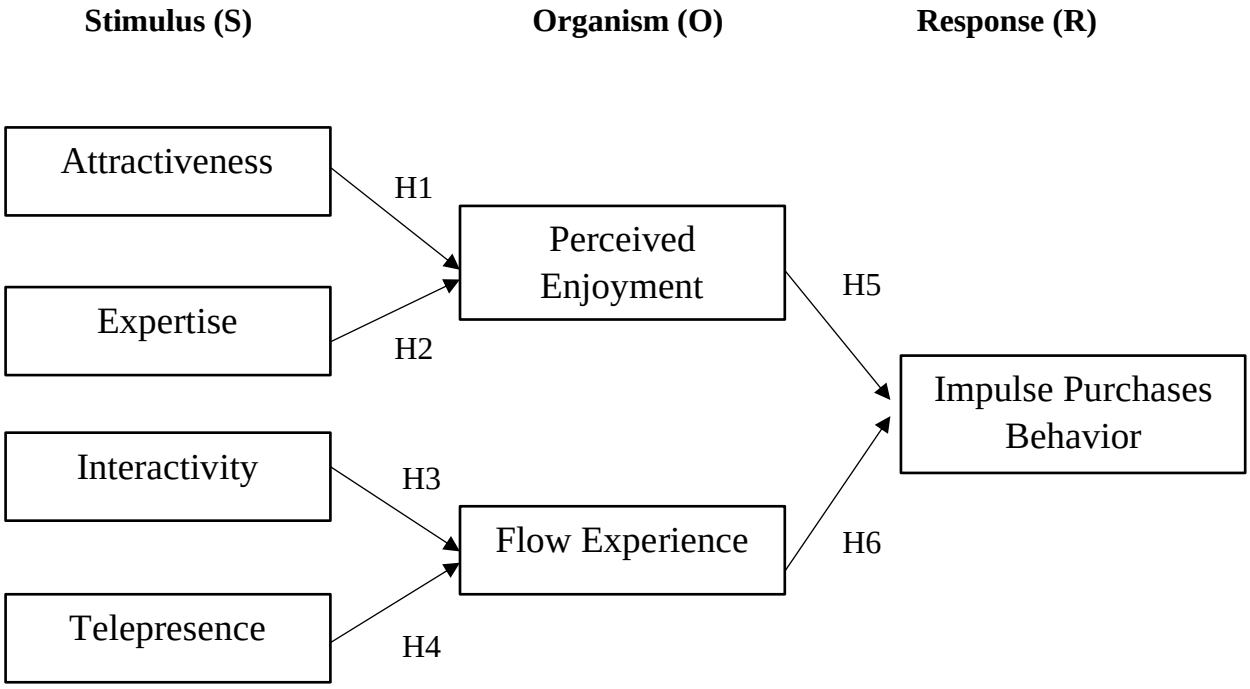


Figure 2.1: Conceptual Framework

Figure 2.1 illustrates the suggested conceptual framework for this study based on the SOR model as its foundation. This study aims to understand the determinants of perceived enjoyment and flow experience which leads to impulse purchase behavior from the perspectives of TikToker. In this framework, there are four independent variables which are attractiveness, expertise, interactivity and telepresence which are categorized as stimulus. Besides, perceived enjoyment and flow experience fall under the organism category, while impulse purchase falls under the response category.

CHAPTER 3 RESEARCH METHODOLOGY

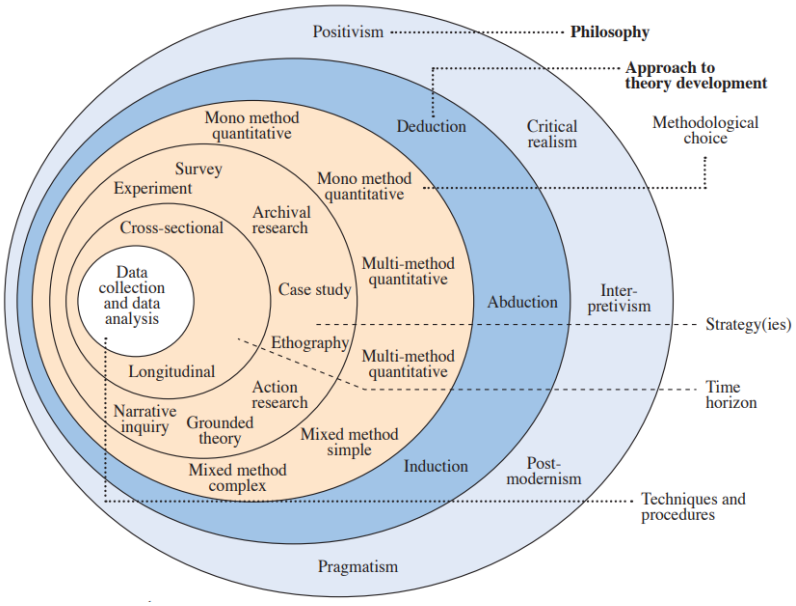
3.0 Introduction

In chapter 3, research methodology has been discussed including research philosophy, research design, sampling design, data collection methods, research instrument, data processing and data analysis,

3.1 Research Philosophy

According to Al-Ababneh (2020), the first layer of the research onion pertains to the research philosophy which focuses on the essence and development of knowledge (see Figure 3.1). Research philosophy provides the foundation for research by outlining ontology, which deals with the nature of reality, epistemology, which explores the nature and sources of the knowledge and axiology which encompasses the values, beliefs and ethics guiding the research (Melnikovas, 2018). For the researcher, it is very vital to consider the impact of their fundamental philosophy on how their approach to conduct research and interpretation of their data (Moon et al., 2019). Hence, the researcher must evaluate and adopt the most suitable research philosophies including positivism, realism, pragmatism and interpretivism (Al-Ababneh, 2020).

Figure 3.1: Research Onion



Source: Melnikovas, A. (2018). Towards an explicit research methodology: Adapting research onion model for future studies. *Journal of Futures Studies*, *23*(2), 29–44. https://doi.org/10.6531/JFS.201812_23(2).0003

Positivism is a type of research approach utilizing empirical techniques that heavily rely on nonethnic analysis or constructing logical and formal explanatory theories to gain insight into phenomena (Anddison Eketu, 2017). Thus, in this study, the positivism paradigm is adopted. This is due to the reason that it aligns with the fundamental principles of isolating, analyzing and comprehending the underlying causes of human behavior (Anddison Eketu, 2017). Moreover, the other reason for applying the positivism paradigm is because the positivist paradigm relies on empiricism, objectivism and naturalism as comprehensive and well-established theoretical frameworks and practical standards (Rong et al., 2022).

3.2 Research Design

Research design serves as a plan or blueprint that is formed to address the research problem and manage variance effectively (Helen, 2015). Similarity, Ling (2006) described research design pertains to the various methods used in research to address specific questions or inquiry a hand. Whereas Abutabenjeh and Jaradat (2018) stated that choosing an appropriate research design becomes one of the most crucial decisions for a researcher after determining the research topic and developing questions. They also described that research design encompasses the type of study or design that includes when and how frequently data will be collected and the degree of control the researcher will exert over the research factors.

3.2.1 Quantitative Research

According to Hidayat and Yuliah (2018), quantitative research is defined as a positivist-based research methodology that is used to analyze specific populations or samples, collect data by using research instruments as well as analyze data quantitively or statically in order to test predetermined hypotheses. Moreover, the Haksanggulawan et al. (2023) also stated that quantitative research methods are distinguished by their planned, methodical and well-defined approach, which is consistently upheld throughout the entire research process that is starting from the initial stages to the formulation of the research design (Haksanggulawan et al., 2023). Furthermore, according to the Li et al. (2022), the quantitative research method was preferred to use among researchers. In this study, quantitative research is used to test the previously developed hypotheses and explain the positions of the variables under investigation (Saifudin et al., 2020).

3.2.2 Cross-Sectional Research

Cross-sectional research is observational research that examine data collected from a population at a specific moment (Wang & Cheng, 2020). Cvetković Vega et al. (2021) stated that cross-sectional studies are a type of epidemiological design that can be categorized as either descriptive or analytical designs depending on the overall goals. In this research, cross-sectional research is being used. This is due to the reason that cross-sectional research is typically the most straightforward observational study design at the individual level, often being less costly and easier to carry out in comparison to case-control or cohort studies (Pandis, 2014). Apart from that, it is also appropriate for this study because it possesses a clearly defined unit of analysis, which is TikTok users (Bawack et al., 2023).

3.3 Sampling Design

Sampling design is described as the methods used to choose the primary units for gathering and analyzing data that is appropriate for a particular research question (Lameck, 2013). Besides, Mohsin (2021) also stated that sampling is the process of taking a subset from a larger population. Similarity, sampling is the process employed by a researcher to deliberately choose a specific number of individual items from a broader population of interest for closer study by utilizing both probabilistic and non-probabilistic methods (Mweshi & Sakyi, 2020).

3.3.1 Target Population

Ingram and Schneider (1991) defined target populations are individuals, groups or businesses chosen to undergo behavioral changes through public policy initiatives, including statutes, operational programs or agency guidelines. Besides, research by Robinson and Robinson (2016) also stated that the target population refers to the totality of persons from whom cases can appropriately be selected for inclusion in an interview study. Apart from that, the target population for this study consists of Malaysian consumers who have engaged in purchasing through TikTok live streaming, specifically focusing on individuals from Generation Y and Z living in the Klang Valley region. However, there is no specific limitation regarding ethnicity, employment status, or educational level of target respondents, as long as they meet the requirements.

3.3.2 Sampling Frame and Sampling Location

A sampling frame refers to the list of units from which a sample is intended to be chosen (DiGaetano, 2013). Besides, according to Mweshi and Sakyi (2020), the sampling frame refers to the group of individuals that have the probability of being chosen and how closely it matches the population studied. In this study, there is no sampling frame applied. This is due to the reason that Malaysia TikTok users reached about 20.08 million users in April 2023 (see Figure 1.2), making it difficult to have a complete list of potential participants. Hence, the sample in this study will be collected by distributing questionnaire through Google Form. The reason of using Google Form is because it provides a diverse range of features for designing the questions, allowing users to incorporate various elements such as image, text and videos. Besides, this platform also

offers flexibility in formulating the questions using paragraphs, multiple choice and short-answer response (Prasad, 2023). Additionally, the another reason of using Google Form is because it is a free service provided by Google that allow the users to make online measurement (Rohmah et al., 2018). Moreover, the reason for using a questionnaire is that it can be an effective tool that can help researchers save money, time, effort and resources compared to other data collection tools. Besides, the questionnaire is useful when dealing with a large and geographically dispersed population (Marshall, 2005).

3.3.3 Sampling Elements

A sampling element is defined as the individual members within the population whose attributes or characteristics are intended to be assessed (Kleiman et al., 1997). In this study, the sampling elements are the respondents who are staying in Malaysia and have experience of purchasing though TikTok live streaming. This can ensure that they are relevance to the study as the aim of this research is to comprehend antecedents of perceived enjoyment and flow experience in impulsive purchase behavior from the perspective of Malaysia TikTok users.

3.3.4 Sampling Technique

Sampling is the technique of selecting a smaller number of objects or people from a larger population to use as subjects or data sources for the researcher's experimentation and observation that aligns with the objective of the study (Sharma, 2017). In addition, due to the no listing, the convenience sampling technique under non-probability sampling is being used to collect the data.

Nonetheless, the respondents must fulfil the criteria like having experience purchasing products or services from TikTok live streaming and being of Malaysian nationality. According to Edgar and Manz (2017), convenience sampling is a way to gather samples that are conveniently placed around a location or Internet service. Besides, Isaac (2023) stated that convenience sampling also known as grab, opportunity sampling or accidental, is a method where a sample is selected from a portion of the population that is easily accessible, conveniently located and readily available. The reason for using convenience sampling to collect the data is because this method is ease to access, availability during a specific timeframe, close geographical proximity and willingness of participants to participant (Etikan, 2016).

3.3.5 Sample Size

Sample size refers to the proportion of a population that needs to be included in a study to ensure an adequate amount of data acquired to make conclusions (Memon et al., 2020).

Figure 3.2: Table of Determining Sample Size from a Given Population

Table for Determining Sample Size from a Given Population

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size.
S is sample size.

Source: Krejcie, R. V., and Morgan, D. W. (1970). Determining sample size for research activities. Educational and Psychological Measurement, 30(3), 607–610. https://doi.org/10.1177/001316447003000308

Based on the table of Krejcie and Morgan (1970), the minimum sample size in this study is 384. According to the Figure 1.2, Malaysia TikTok users reached about 20.08 million users in April 2023. Hence, a total number of 388 respondents are selected to ensure the accuracy of this study. Besides, the reason for choosing a sample size of 388 is because it is not too small or too big. This is because too small a sample size can undermine the effectiveness of a well-designed study thereby making it prone to overlook significant effects or associations or to provide imprecise estimates of such impact or connections. On the other hand, too large of a sample size will cause the study to become

more intricate and may potentially result in inaccuracies in the obtained result (Singh et al., 2011).

3.4 Data Collection Methods

Moreover, the data collection methods used in this research are primary data collection methods. At first, primary data are defined as the data that the researcher himself collected for the first time from the source such as observations, questionnaires, case studies and interviews, focus groups or surveys. In the same vein, Mwita (2022) also stated that primary data are those that are gathered from primary sources by a researcher for the first time and may only be collected through ways like questionnaires, focus group discussions, interviews and observation. In this study, primary data is collected by distributing the questionnaire to the target sample in order to gain the data. Furthermore, the reason for utilizing the primary data in this study as it provides significantly narrower confidence intervals and results in less variable compared to the use of adjusted risk ratios to estimate the same overall risk (Thakkar et al., 2013). Additionally, Hox and Boeije (2005) also argued that primary data are those that are gathered specifically for the current research problem that employs methods most suitable for addressing the research problem.

3.5 Research Instrument

3.5.1 Questionnaire Design

According to Taherdoost (2022), the core component of a survey is its questionnaire, which comprises a series of questions designed to collect data

from participants. Nonetheless, the outcome of a survey is significantly influenced by various factors such as the type of questions asked, language used in the questions, sequencing and other details (Ali et al., 2019). Therefore, to obtain valuable and relevant information, it is important to plan carefully the design of the questionnaire (Roopa & Rani, 2012). Besides, the reason for choosing a questionnaire to collect the data is because it is a very convenient method for collecting data quickly from a large number of respondents (Ornstein, 2014). Also, Ornstein (2014) also stated that the reason for designing a questionnaire nicely helps the researcher to collect data accurately so that the results are generalizable and interpretable.

In this research, the first page of the questionnaire is a cover page which clearly discloses the researcher's identity and information, research topic, research objectives as well as assurance of confidentially.

Moreover, there are 3 sections in this research. In Section A, two screening questions are designed to aim for filtering out Malaysians who do not have a TikTok account or those who do not have experience in purchasing products through TikTok live streaming in order to prevent errors and irrelevant results.

In addition, in Section B, demographic profile questions will be asked to collect the basic information of the respondents. Increasingly, this section consists of 14 questions including age, gender, ethnicity, educational level and employment status. Additionally, this section also involved general questions about the buying behavior of Malaysian consumers via TikTok live streaming. For example, questions such as frequency of using TikTok live stream

commerce, how often the respondents use TikTok live streaming to purchase products, what type of products the respondents typically purchase through TikTok live streaming and more. Besides, each respondent must tick the boxes corresponding to the most suitable alternatives provided.

Lastly, Section C deals with the questions of investigating dependent variables and independent variables that affect the impulsive purchase behavior of Malaysian consumers through TikTok live streaming such as attractiveness, expertise, telepresence, interactivity, perceived enjoyment, flow experience and impulse purchases. Moreover, a total of 35 questions will be asked and each question follows an interval scale with five options which are strongly disagree, disagree, neutral, agree and strongly agree.

3.5.2 Pretest and Pilot Test

Berry (2008) stated that pretest is a form of assessment that is non-graded and can be used to determine existing subject knowledge. Besides, it can serve as a motivational tool and guide the researcher, ultimately leading to better performance (Berry, 2008). Moreover, the reason for conducting a pretest is that it can be used to help assess whether the survey will effectively serve as a valid and reliable tool for research (SAGE Publication, 2016). In this research, a pretest is conducted where the researcher interviews 5 students who had studied business or consumer behavior-related courses, as well as one lecturer specializing in consumer behavior to gather their feedback or comments in order to ensure the questionnaire is valid and reliable.

According to Gani et al. (2020), the pilot test is defined as a preliminary test version of a research tool that is performed before the actual study. Besides, the author also argued that the pilot test helps the researchers to identify potential issues and areas requiring adjustments in the research instrument during its initial stages thereby contributing to enhanced value and credibility in the study (Gani et al., 2020). In the same vein, Catherine et al. (2007) also stated that the purpose of conducting a pilot test is to help researchers evaluate the feasibility of implementing an intervention trial as well as acquire initial data and gauge the magnitude of the effect to estimate the recruitment and sample size needs for a randomized intervention trial.

Moreover, according to the Thepha et al. (2021), a pilot test typically requires a participants range of 10 to 30 individuals so that it can be considered adequate. Therefore, in this research, 55 respondents were obtained to participate in the questionnaire. However, some respondents were excluded from the study as they did not meet the research criteria. Specifically, there are 33 respondents who never purchase products through TikTok live streaming. As a result, the pilot testing involved 22 respondents and the results are shown in the table below:

Table 3.1 Result of Reliability Test (Cronbach's Alpha)

Variables	**Cronbach's Alpha**	**Number of items**
Attractiveness	0.87	5
Expertise	0.771	5

Telepresence	0.918	7
Interactivity	0.858	4
Perceived Enjoyment	0.845	5
Flow Experience	0.823	4
Impulse Purchases	0.917	5

3.5.3 Origin of Constructs

Table 3.2 shows the details of the measurement items. Besides, all questions are adopted and adapted from past research studies.

Table 3.2: Survey Instrument

No	Variable	Original question	Questions	Source
	Impulse purchase	1. When watching live streaming commerce, I had a desire to buy items that did not pertain to my original shopping goals. 2. I experienced several sudden urges to buy things when doing	1. While watching TikTok live streaming commerce, I had a desire to buy items that did not pertain to my original shopping goals. 2. I experienced several sudden urges to buy things while	(Lee and Chen, 2021)

		shopping on live streaming commerce. 3. While watching live streaming commerce, I was inclined to purchase items outside my original shopping goal. 4. When I do the shopping on live streaming commerce, I felt a sudden urge to buy something. 5. I ended up spending more money than I originally set out to spend.	doing shopping on TikTok live streaming commerce. 3. While watching TikTok live streaming commerce, I was inclined to purchase items outside my original shopping goal. 4. When shopping on TikTok live streaming commerce, I felt a sudden urge to buy something. 5. I ended up spending more money than I originally set out to spend while shopping on TikTok live streaming	
	Attractiveness	1. The live streamer gives me a good feeling. 2. The live streamer is attractive.	1. The TikTok live streamer gives me a good feeling. 2. The TikTok live streamer is attractive.	(Lee and Chen, 2021)

		3. The live streamer catches my attention. 4. I feel the live streamer is friendly. 5. I feel the live streamer is likable.	3. The TikTok live streamer catches my attention. 4. I feel the TikTok live streamer is friendly. 5. I feel the TikTok live streamer is likable.	
	Expertise	1. I feel that the live streamer is expert. 2. I feel that the live streamer has experience in live streaming. 3. I feel that the live streamer is knowledgeable in the field of live streaming. 4. I feel that the live streamer is qualified to broadcast live-streams. 5. I feel that the live streamer has the skills to broadcast live-streams	1. I feel that the TikTok live streamer is an expert in their field. 2. I feel that the TikTok live streamer has experience in live streaming. 3. I feel that the TikTok live streamer is knowledgeable in the field in live streaming. 4. I feel that the TikTok live streamer is qualified to conduct live-streams. 5. I feel that the TikTok live streamer is good in	(Li and Peng, 2021)

			conducting live-streams	
	Telepresence	1. When watching a live-stream, I forgot about my immediate surroundings. 2. Watching a live-stream often makes me forget where I am. 3. When I watch live-streams, I feel I'm in a world created by the live-stream I watch 4. When I watch live-streams, my body is in the room, but my mind is inside the world created by the live-streams I watch. 5. When I watch live-streams, the world generated by the live-stream I watch is more real for me than the "real world". 6. Watching the live-stream	1. While watching a TikTok live-stream, I forgot about my immediate surroundings. 2. Watching a TikTok live-stream often makes me forget where I am. 3. When I watch TikTok live-streams, I feel I'm in a world created by the live-stream I watch. 4. When I watch live-streams, my body is in the room, but my mind is inside the world created by the TikTok live-streams I watch. 5. When I watch live-streams, the world generated by the TikTok live-stream I watch is more real for me	(Li and Peng, 2021)

		creates a new world for me, and this world suddenly disappears when I stop watching. 7. After watching the live-stream, I feel like I come back to the "real world"	than the "real world". 6. Watching the TikTok live-stream creates a new world for me, and this world suddenly disappears when I stop watching. 7. After watching the TikTok live-stream, I feel like I return to the "real world"	
	Live streamer real-time interaction	1. When watching a live-stream, I can exchange and share opinions with the streamer or other audiences easily 2. When I am watching a live-stream, the streamer knows I'm concerned about him or her 3. When watching a live-stream, I	1. When watching a TikTok live-stream, I can exchange and share opinions with the streamer or other audiences. 2. When I am watching a TikTok live-stream, the streamer knows I'm concerned about him or her. 3. When watching a TikTok live-	(Li et al., 2023)

		feel closer to the streamer 4. When I am watching a live-stream, the streamer provides sufficient opportunities to respond and ask questions	stream, I feel closer to the streamer. 4. When I am watching a TikTok live-stream, the streamer provides sufficient opportunities to respond and ask questions	
	Perceived enjoyment	1. Shopping with live streaming commerce was exciting. 2. Shopping with live streaming commerce was enjoyable. 3. Shopping with live streaming commerce was interesting. 4. I found my visit to live streaming commerce was fun. 5. Shopping with live streaming commerce was fun for its own sake.	1. Shopping with TikTok live streaming commerce was exciting. 2. Shopping with TikTok live streaming commerce was enjoyable. 3. Shopping with TikTok live streaming commerce was interesting. 4. I found my visit to TikTok live streaming commerce was fun. 5. Shopping with TikTok live streaming commerce was fun.	(Lee and Chen, 2021)

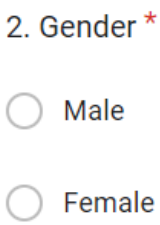
	Flow experience	1. When watching a live-stream, I do not realize how time passes. 2. When watching a live-stream, I often forget the work I must do. 3. Watching a live-stream gives me a temporary escape from the real world. 4. When watching live-stream, I am not distracted easily by other things.	1. When watching a TikTok live-stream, I lose track of time. 2. When watching a TikTok live-stream, I often forget the tasks I need to do. 3. Watching a TikTok live-stream gives me a temporary escape from the real world. 4. When watching TikTok live-stream, I am not easily distracted by other things.	(Li and Peng, 2021)

3.5.4 Scale of Measurement

3.5.4.1 Nominal Scale

The nominal measurement scale, one of Stevens' four introduced scales, employs numbers in a qualitative manner to categorize events or observations. This categorization is based on a shared qualitative attribute and grouping them accordingly (Idika et al., 2023). In this study, a nominal measurement scale was used to develop questions in Section A and Section B. These questions in Section A and Section B are scanning and demographic profile questions which include do you have a TikTok account, whether have you ever made a purchase through TikTok live stream commerce, gender, ethnicity, employment status, which social media platforms you use regularly, what do you primarily use social media for, how often do you use TikTok, frequency of using TikTok live stream commerce, what types of products do you typically purchase through TikTok live stream commerce and what factors influence your decision to make a purchase on TikTok's live stream commerce. The below figure shows the example of a nominal scale question in this research.

Figure 3.3: Image of Nominal Scale Question in this Research

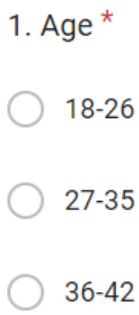


3.5.4.2 Ordinal Scale

According to Mishra et al. (2018), ordinal scale are utilized in inquiries that solicit assessments of quality such as very good, good, fair, poor and very poor

as well as economic status such as low, medium and high. In this research, an ordinal scale has been used in Section B of the questionnaire including age, education level, how many hours per day you spend on social media and how often you make purchases through TikTok live stream commerce. The below figure shows an example of the ordinal scale questions in the questionnaire.

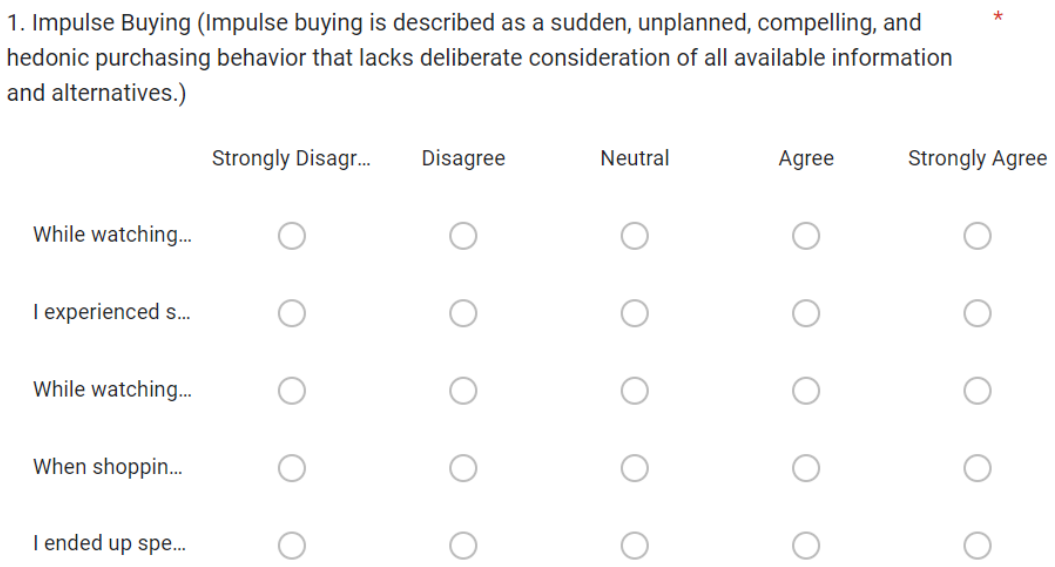
Figure 3.4: Image of Ordinal Scale Question in this Research



3.5.4.3 Interval Scale

An interval scale is defined as a numerical scale where both the order of variables and the intervals between these are discernible (Allanson & Notar, 2020). Besides, Likert Scale is a type of interval scale that is commonly used by researchers. According to Wu and Leung (2017), the Likert Scale is extensively used in social work research and is typically designed with a range of four to seven points. In Section C of the questionnaire, the questions of 7 variables are asked on the Likert Scale. Additionally, a 5-point scale has been established in this questionnaire which includes strongly disagree, disagree, neutral, agree and strongly agree. The below figure shows an example of the interval scale questions in the questionnaire.

Figure 3.5: Image of Interval Scale Question in this Research


1. Impulse Buying (Impulse buying is described as a sudden, unplanned, compelling, and hedonic purchasing behavior that lacks deliberate consideration of all available information and alternatives.) *

	Strongly Disagr...	Disagree	Neutral	Agree	Strongly Agree
While watching...	○	○	○	○	○
I experienced s...	○	○	○	○	○
While watching...	○	○	○	○	○
When shoppin...	○	○	○	○	○
I ended up spe...	○	○	○	○	○

3.6 Data Processing

3.6.1 Questionnaire Checking

In this step, researcher will check the questionnaire to ensure the quality, accuracy and reliability of the data collected through the questionnaire.

3.6.2 Avoid Missing Value

In this step, the researcher utilized Google Forms to avoid missing values. This is because Google Forms has a feature that requires respondents to answer all questions to ensure comprehensive data collection.

3.6.3 Data Editing

In this step, researchers will remove all the data collected from the respondents that are outliers or have no differentiation. It is an important step to ensure the accuracy, consistency and reliability of the collected data

3.6.4 Data Coding

In this step, this research employed data coding by assigning numerical labels to each question to facilitate the analysis of collected data.

Table 3.3: Data Coding for questions in Section A

Question No.	Coding
Section A	1= Yes
1) Do you have a TikTok account?	2= No
2) Have you ever made a purchase through TikTok live stream commerce?	1= Yes 2= No

Table 3.4: Data Coding for questions in Section B

Question No.	Coding
Section B	1= Under 18
1) Age	2=18-24
	3= 25-34
	4= 35-44
	5= 45-54
	6= 55-64
	7= 65 or older
2) Gender	1= Male
	2= Female
3) Ethnicity	1= Malay
	2= Chinese
	3= Indian
	4= Others
4) Education Level	1= Some high school
	2= High school graduate or equivalent
	3= Some college
	4= Bachelor's degree
	5= Postgraduate degree
5) Employment Status	1= Employed
	2= Self employed

	3= Unemployed 4= Student 5= Retired 6= Housewife
6) Which social media platforms do you use regularly?	1= Facebook 2= Instagram 3= Twitter 4= TikTok 5= Xiao Hong Shu
7) How many hours per day do you spend on social media?	1= 1 to 2 hours 2= 3 to 4 hours 3= more than 5 hours
8) What do you primarily use social media for?	1= Connecting with friends/family 2= News 3= Entertainment 4= Shopping (Livestream commerce) 5= Promoting personal or business brand
9) How often do you use TikTok?	1= Daily 2= Weekly 3= Rarely

10) Frequency of Using TikTok Live Stream Commerce	1= Daily 2= Weekly 3= Monthly 4= Less than once a month
11) What features of TikTok do you find most appealing?	1= Short video format 2= Variety of content 3= User interaction 4= Live streaming 5= Filters and effects
12) How often do you make purchases through TikTok live stream commerce?	1= once in a month 2= Twice in a month 3= 3 to 4 times in a month 4= More than 5 times in a month
13) What types of products do you typically purchase through TikTok live stream commerce?	1= Clothing 2= Electronics 3= Beauty Product 4= Food & Beverages 5= Home Décor 6= Toys and games
14) What factors influence your decision to make a purchase on TikTok's live stream commerce?	1= Attractiveness of TikToker 2= Expertise of TikToker

	3= TikToker's Product reviews 4= Product relevance (the product being promoted is relevant to my interests or needs) 5= TikToker's engagement (build trust) 6= Discounts/Promotions offered by TikToker 7= Quality of product 8= Limited availability (Sales promotion, limited quantity, etc)

Table 3.5: Data coding for questions in Section C

Question No.	Label	Coding
Section C		
IPB (Question 1 – Question 5)	Impulse purchases	
ATT (Question 1– Question 5)	Attractiveness	1 = Strongly Disagree
EXP (Question – Question 5)	Expertise	2 = Disagree
ITT (Question 1 – Question 4)	Interactivity	3 = Neutral
TP (Question 1 – Question 7)	Telepresence	4 = Agree
PE (Question 1 – Question 5)	Perceived Enjoyment	5 = Strongly Agree
FE (Question 1 – Question 4)	Flow Experience	

3.6.5 Data Transcribing

Data transcribing is the first stage in data analysis that requires the researchers to meticulously observe data by repeatedly listening and watching (Bailey, 2008). In this study, researchers use Microsoft Excel to transform the generated information into a data format so that the researchers can interpret the data easily.

3.6.6 Data Cleaning

In this step, the researcher will clean the data by identifying and correcting any outliers, no differentiation or duplicates within the dataset. This step helps to ensure the dataset is free from error and inconsistent.

3.7 Data Analysis

3.7.1 Scale Measurement

3.7.1.1 Reliability Test

According to Wells and Wollack (2003), test reliability refers to the degree of consistency in the scores that the researchers would obtain when conducting different versions of the same test. In this research, Cronbach's Alpha is being used to measure internal consistency. This is due to the reason that Cronbach's

alpha is frequently employed to assess the internal consistency or reliability of summed rating scales (Vaske et al., 2017). Additionally, Cronbach's alpha is a statistic that falls within the range of zero to one (Salkind, 2012). Besides, the author also argued that values closer to one on the scale indicate stronger internal consistency, while closer to zero represents weaker internal consistency (Salkind, 2012). Table 3.6 below shows the rules of thumb for Cronbach's Alpha.

Table 3.6: Rules of Thumb for Cronbach's Alpha Coefficient Value

Alpha Coefficient Range	**Strength of Association**
Less than 0.6	Poor
0.6 to < 0.70	Moderate
0.7 to < 0.80	Good
0.8 to < 0.90	Very Good
0.90 and above	Excellent

Source: Adopted from Zikmund, Babin, Carr, and Griffin, (2010)

According to Table 3.6, the reliability levels are classified into five categories, with excellent reliability falling above 0.9, very good reliability ranging from 0.8 to 0.9, good reliability falling within 0.7 to 0.8, moderate reliability falling within 0.6 to 0.7 and poor reliability assigned to values below 0.6.

3.7.2 Multivariate Assumption Test

3.7.2.1 Normality Test

According to Ghasemi and Zahediasl (2012), the normality test serve as a tool to complement the visual examination of data for normal distribution. It is a very important step as this test decides which measure of central tendency and statistical techniques for analyzing data (Mishra et al., 2019). In this study, the normality test is conducted by using Jamovi to evaluate whether a dataset follows a normal distribution which aids in determining if parametric statistical methods are appropriate.

3.7.2.2 Pearson Correlation Analysis

Pearson Correlation Coefficient (PCC) refers to the measure of the linear relationship between two variables (Kirk et al., 2021). It is calculated by dividing the covariance of the two variables by the products of their standard deviation (Zhu & Yuan, 2015). Moreover, Adler and Parmryd (2010) also explained that the Pearson Correlation Coefficient (PCC) is a widely recognized measure of correlation that traces its origins back to the late 19^{th} century, having been introduced by Galton. In statistical analysis, the Pearson Correlation coefficient quantifies the degree of linear association between two variables, providing a numerical value within the range of -1 to 1 (Zhu & Yuan, 2015). Increasingly, a score of 1 indicates a perfect positive correlation, 0 signifies no correlation and -1 represents a perfect negative correlation between the variables (Zhu & Yuan, 2015). Table 3.7 shows the rules of thumb for the correlation coefficient.

Table 3.7: Rules of Thumb for Correlation Coefficient

Coefficient Range	Strength of Association
± 0.91 to ± 1.00	Very high correlation
± 0.70 to ± 0.89	High correlation
± 0.50 to ± 0.69	Moderate correlation
± 0.30 to ± 0.49	Low correlation
± 0.00 to ± 0.29	Little if any correlation

Source: Adopted from Asuero, Sayago, and González (2006)

According to Table 3.7, when the coefficient falls within the range of ± 0.91 to ± 1.00, it indicates a very high correlation. Moreover, in the range of ± 0.70 to ± 0.89, the correlation is considered as high while within the range of ± 0.50 to ± 0.69, the correlation is considered moderate correlation. Besides, a coefficient falling within the range of ± 0.30 to ± 0.49 represents a low correlation while ± 0.00 to ± 0.29 means little if any correlation.

3.7.2.3 Multicollinearity Test

Multicollinearity is a situation in which one or more of the independent variables included in a dataset are highly correlated with each other (Michael & Abiodun, 2014). When this occurs, the standard error of the coefficient tends to increase (Daoud, 2018). Additionally, increased standard error indicates that the coefficients for some or all independent variables could be significantly different from zero (Daoud, 2018). In this research, the variance inflation factor

(VIF) was used as a tool for detecting the presence of multicollinearity. The variance inflation factor (VIF) is defined as the reciprocal of tolerance and is used to assess the effect of multicollinearity on the estimated standard error of the regression coefficient (Midi et al., 2010). The reason for using the variance inflation factor is because it is commonly employed to measure the extent of multicollinearity of the independent variable in relation to the other independent variables within a regression model (O'Brien, 2007). Table 3.8 shows the rules of thumb for VIF.

Table 3.8: Rules of thumb for VIF

Variation Inflation Factor Value (VIF)	**Multicollinearity Problem**
1 and below	No collinearity issue
>3.3	Likelihood collinearity
>5.0	Probable collinearity
>10	Collinearity issue

According to Table 3.8, a variation inflation factor value of 1 and below is considered as no collinearity issue. If the VIF is between 3.3 and 5.0, there is a likelihood of collinearity. Besides, it is probable collinearity when VIF falls within 5.0 to 9.9, while VIF exceeding 10 indicates a collinearity issue.

3.7.3 Descriptive Analysis

Descriptive analysis is a way employed to impartially depict the qualities and extent of sensory attributes (Kemp et al., 2017). In this research, descriptive

analysis is applied to evaluate the scanning and describing data collected from the Sections A and B of the questionnaire. Additionally, the data will be illustrated by using a pie chart to show the percentage and number of the respondents.

3.7.4 Inferential Analysis

Inferential statistics is referred to as utilizing descriptive statistics from a sample to make estimations or inferences about the population (Stapor, 2020). In this study, inferential analysis is used to assess six hypotheses and predict the precise value of the entire population using the provided data. Increasingly, the tools employed for inferential analysis in this study are partial least square structural equation modelling, measurement model assessment and structural model assessment.

3.7.4.1 Partial Least Square Structural Equation Modeling

Partial Least Square Structural Equation Modeling (PLS-SEM) is a flexible statistical method that does not reply on specific data distributions and can effectively handle sample sizes (Hamdollah & Baghaei, 2016). In the same vein, Sarstedt et al. (2020) also stated that PLS-SEM has gained popularity as a technique for path model estimation involving latent variables and their relationships. PLS-SEM can help researchers to identify the critical success factors and sources of competitive advantage concerning significant target constructs like customer loyalty and satisfaction, user behavior and behavior

intention (Sarstedt et al., 2020). In this study, SMART PLS is used for inferential data analysis.

3.7.4.2 Measurement Model Assessment

The measurement model depicts the connection between each construct and its corresponding indicators (Sarstedt et al., 2020). In the context of PLS-SEM, the measurement model is sometimes considered as outer model (Sarstedt et al., 2020). In addition, the formulation of the measurement model relies on the directionality of the relationships between the latent variables and their respective observed variables (Rigdon, 1998). In this research, measurement model assessment is employed to evaluate the quality and appropriateness of the relationship between latent constructs and their observed indicators.

3.7.4.3 Structural Model Assessment

The structural model assessment entails a systematic procedure utilized for evaluating a structural model within PLS-SEM (Manley et al., 2021). According to Hair et al. (2021), in PLS-SEM, the assessment of the structural model emphasizes evaluating the model's capacity for explanation and prediction (Hair et al., 2021). Besides, Hair et al. (2021) also stated that there are five steps involved when conducting structural model assessment in PLS-SEM. Increasingly, the first step is examining potential collinearity among predictor constructs in structural model regression, then proceeds to assess the significance and relevance of path coefficients, and culminates in analyzing the

explanatory and predictive capabilities of the model and the final step is model comparison (Hair et al., 2021). In this study, structural model assessment is employed to evaluate the effectiveness and validity of the structural model within Partial Least Squares Structural Equation Modeling (PLE-SEM)

3.8 Chapter Summary

In conclusion, this chapter covered various methodologies to conduct the research. In this study, quantitative research and cross-sectional research are being used as research designs. Moreover, the components of the sampling design including target population, sampling frame and sampling location, sampling elements, sampling techniques and sample size are established in advance of formulating the questionnaire. In addition, questionnaires distributed through Google Forms serve as the primary data collection method to collect the data from the audiences. Apart from that, the research instrument includes questions related to impulse purchase behavior, attractiveness, expertise, telepresence, interactivity, perceived enjoyment and flow experience. Additionally, a pilot test was conducted. Besides, data processing has also been conducted in this research which including questionnaire checking, avoiding missing value, data editing, data coding, data transcribing and data cleaning.

Furthermore, measurement scale of nominal, ordinal and interval scales are used in this research for subjective assessment such as recognizing the demographic profile of the audience as well as evaluating the outcome of the dependent variables and independent variables in the questionnaire. Besides, in the part of data analysis, the reliability of the questionnaire is assessed using Cronbach's Alpha to ensure internal consistency. Increasingly, data analysis in this study involves multivariate assumption tests, including normality tests, pearson correlation analyses as well as multicollinearity tests.

Moreover, descriptive analysis is applied for scanning and demographic data which is presented via pie chart. In the inferential analysis, this study employs Partial Least Square Structural Equation Modeling, measurement model assessment and structural model assessment.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

In this chapter, the result of the statistical analysis was discussed after the collection of data from respondents. Besides, there are about 417 surveys were collected from 3 January 2024 to 28 January 2024. In addition, the descriptive data will be analyzed by using Jamovi while the inferential data will be analyzed using SMART PLS 4.0.9.9. Before conducting the data analysis, data cleaning procedures were implemented to ensure the data accuracy.

4.1 Data Screening and Data Cleaning

In this section, data screening is conducted to remove those who answered no to the screening questions of the questionnaire. Through this process, there are 28 respondents have been removed and the remaining 390 responses. Besides, before conducting data analysis, data cleaning has also been carried out in this study. In the data cleaning process, 2 no differentiation responses have been deleted from the data. In short, there are 388 responses will be applied in this study.

4.2 Common Method Bias

4.2.1 Full Collinearity Test

Furthermore, this research performed a full collinearity test and Harman single factor test to identify any common method bias as outlined in Chapter 3. Moreover, according to the result of the full collinearity test that is shown in Table 4.1, the variance inflation factor (VIF) for all variables is below 3.3 which indicates the absence of a common method issue.

Table 4.1: Full Collinearity Test

Construct	Full Collinearity VIF
Impulse Purchases Behavior	1.41
Attractiveness	1.25
Expertise	1.25
Telepresence	1.51
Interactivity	1.52
Perceived Enjoyment	1.25
Flow Experience	1.27

4.2.2 Harman Single Factor Test

At the same time, the study also conducted the Harman Single Factor Test to identify the common method bias. Through this method, it was found that the percentage of variance is below 50% which means there are not common

method issues. In short, via these methods, this study concludes that there is no common method bias present. The result is presented in Table 4.2.

Table 4.2: Harman Single Factor Test

Component	SS Loadings	% of Variance	Cumulative %
1	10.3	29.4	29.4

4.3 Descriptive Data Analysis

4.3.1 Respondent Profile

In this section, the demographic profile and social media behavior of 388 respondents will be discussed. Besides, the findings are presented in Table 4.3.

Table 4.3: Respondent Profile

Constructs	Frequency	Percentage
Age		
18-26	355	91.49%
27-35	19	4.90%
36-42	14	3.61%
Gender		

Male	237	61.08%
Female	151	38.92%
Ethnicity		
Malay	37	9.54%
Chinese	320	82.47%
Indian	31	7.99%
Others	0	0.00%
Education Level		
Some high school	5	1.29%
High school graduate or equivalent	23	5.93%
Some college	11	2.84%
Bachelor’s degree	297	76.55%
Postgraduate degree	52	13.40%
Employment status		
Employed	66	17.01%
Self-employed	9	2.32%
Unemployed	1	0.26%
Student	306	78.87%
Retired	0	0.00%
Housewife	6	1.55%

How many hours per day do you spend on social media (Facebook, Instagram, TikTok, Xiao Hong Shu, etc.)?		
1 to 2 hours	260	67.01%
3 to 4 hours	97	25.00%
more than 5 hours	31	7.99%
How often do you use TikTok?		
Daily	368	94.85%
Weekly	18	4.64%
Rarely	2	0.52%
Frequency of Using TikTok Live Stream Commerce:		
Daily	304	78.35%
Weekly	58	14.95%
Monthly	14	3.61%
Less than once a month	12	3.09%
How often do you make purchases through TikTok live stream commerce?		
once in a month	317	81.70%
Twice in a month	58	14.95%

3 to 4 times in a month	11	2.84%
More than 5 times in a month	2	0.52%

According to Table 4.3, in terms of age, the findings showed that the largest age group falls within 18-26 which comprises 355 respondents, accounting for 91.49%. Besides, the next most represented group is age 27-35 consisting of 19 respondents, constituting 4.90%. Lastly, the smallest proportions are found in the 36-42 which have 14 respondents and represent 3.61%

After that, there were 237 respondents were identified as males, accounting for 61.08% and 151 respondents were identified as females which is about 38.92%. This result showed that the number of male respondents is more than female respondents in this research.

In addition, in terms of ethnicity of respondents, the majority of respondents are identified as Chinese comprising 320 individuals, constituting 82.47% of the total. Following closely behind, 37 individuals or 9.54% of the respondents are Malay while 31 individuals are Indian making up 7.99% of this section. Notably, these were no participation categorized under the other ethnic group. This distribution highlights the multiethnic nature of the study population providing valuable insight into the ethnic diversity within the research context.

Next, the demographic profile regarding the education level of the respondents had also been collected in this research. Among them, most of the respondents are students who are studying bachelor's degree comprising 297 individuals or 76.55% of the total. Next, there are also 52 individuals, representing 13.40%,

who possess a Postgraduate Degree. Moreover, high school graduates or equivalent make up 23 individuals constituting 5.93% while some college education is held by 11 individuals accounting for 2.84%. Furthermore, the smallest proportion are from high school education which only has 5 individuals or 1.29%.

Furthermore, the employment status of the participants highlights a diverse range of occupational situations. In this research, students make up the largest segment comprising 306 individuals in total, making up appropriately 78.87%. Moreover, employed individuals account for 66 participants, representing 17.01%, while self-employed individuals make up 9 individuals or 2.32% in this research. Next, the smaller proportion are housewife which only has 6 individuals or 1.55% and unemployed which has 1 individual, constituting 0.26%. Lastly, there is no retired respondent participated in this research. In short, the data underscores that the largest portion of respondents are students, indicating their significant presence within the study sample.

Besides, based on Table 4.3, the majority of participants, accounting for 67.01% or 260 individuals, showed spending 1 to 2 hours per day on social media platforms such as Facebook, Instagram, TikTok and Xiao Hong Shu. Additionally, there are also 97 individuals spending 3 to 4 hours per day, representing 25.00%. Finally, 31 individuals or 7.99% of respondents have reported spending more than 5 hours daily on these platforms.

After that, it is very important to know the usage frequency of TikTok among participants. Hence, according to Table 4.3, the usage frequency of TikTok among participants reveals that the vast majority, comprising 94.85% or 368

individuals, reported using the platform daily. Additionally, there are 18 individuals reported that they use TikTok weekly, accounting for 4.64% while the remaining 2 individuals or 0.52% stated they use it rarely. In short, this result showed that the majority of Malaysians use TikTok on a daily basis. This high frequency of daily usage underscores the significant role that TikTok plays in the social media habits of the Malaysian population.

Moreover, in terms of frequency of using TikTok live stream commerce, A significant majority, comprising 304 individuals or 78.35% of participants, reported engaging in daily usage, while 58 individuals (14.95%) indicated a weekly frequency. Increasingly, 14 individuals (3.61%) reported using it monthly, and 12 individuals (3.09%) stated they use it less than once a month. In short, these findings illustrate a widespread adoption of TikTok live stream Commerce among Malaysians.

Last and foremost, according to Table 4.3, appropriately 317 or 81.70% of participants reported making purchases once a month though TikTok Live Steam Commerce. Additionally, 58 participants (14.95%) making purchases twice in a month while a smaller proportion, 11 or 2.84% of participants, reported making purchases 3 to 4 times in a month. An even smaller number, 2 (0.52%), stated making purchases more than 5 times in a month. In short, these findings showed that TikTok live stream Commerce has become the platform of choice for online purchases among Malaysians.

4.3.2 Multiple Responses Analysis

Apart from that, this study also utilized multiple response analysis to examine the checkbox questions. The results are presented in Table 4.4, Table 4.5, Table 4.6, Table 4.7 and Table 4.8.

Table 4.4: Multiple Response Analysis

Which social media platforms do you use regularly? (multiple choice)			
Constructs	**Frequency**	**% of responses**	**% of cases**
Facebook	357	25.30	92.01
Instagram	360	25.51	92.78
Twitter	60	4.25	15.46
TikTok	371	26.29	95.62
Redbook	263	18.64	67.78
Total:	1411	100	363.65

According to Table 4.4, the results indicated which social media platforms Malaysians use regularly. Among the options provided, Facebook and Instagram are the most popular choices, with 357 respondents, representing 25.30% of responses and 92.01% of cases and 360 respondents, constituting 25.51% of responses and 92.78% of cases respectively. Moreover, TikTok also garnered significant usage, with 371 respondents, showing 26.29% of responses and 95.62% of cases. After that, Twitter and Redbook were less commonly used, with 60 respondents (4.25% of responses, 15.46% of cases) and 263 respondents (18.64% of responses, 67.78% of cases) respectively.

These data underscore the significance of these platforms especially Facebook, Instagram and TikTok that might drive impulse purchases among Malaysians. Besides, leveraging the popularity and influence of these platforms, businesses can effectively reach and engage with potential customers. In short, social media also play an important role for businesses to connect, inform and ultimately stimulate impulse purchases among Malaysian consumers.

Table 4.5: Multiple Response Analysis

What do you primarily use social media for ? (multiple choice)			
Constructs	**Frequency**	**% of responses**	**% of cases**
Connecting with friend/family	358	27.41	92.27
News	178	13.63	45.88
Entertainment	339	25.96	97.37
Shopping (Livestream commerce)	335	25.65	86.34
Promoting personal or business brand	96	7.35	24.74
Total	1306	100	336.60

Table 4.5 provides insight into the primary use of social media among the participants. Based on Table 4.5, connecting with friends and family play as the most popular purpose which has 358 respondents and accounts for 27.41% of responses and 92.27% of cases, indicating its pervasive importance in social media usage. Next, entertainment follows closely behind with 339 respondents, representing 25.96% of responses and 97.37% of cases. Moreover, shopping through live streaming emerged as a notable use, showing 335 respondents, 25.65% of responses and 86.34% of cases, showcasing the increasing role of

social media in e-commerce. Apart from that, there are 178 respondents who use social media to read news, constituting 13.63% of responses and 45.88% of cases. Finally, users are less frequently using social media to promote personal or business brands, with only 96 respondents, representing 7.35% of responses and 24.74% of cases.

Table 4.6: Multiple Response Analysis

What features of TikTok do you find most appealing? (multiple choice)			
Constructs	**Frequency**	**% of responses**	**% of cases**
Short video format	323	24.12	83.25
Variety of content	240	17.92	61.86
User interaction	285	21.29	73.45
Live streaming	288	21.51	74.23
Filters and effects	203	15.16	52.32
Total	1339	100	345.10

Furthermore, Table 4.6 presents the data of what features of TikTok that the users find most appealing. Among the respondents, the most popular use was for short video format, with 323 respondents, constituting 24.12% of responses and reaching 83.25% of cases. After that, user interaction also emerged as a significant factor, with 285 respondents, accounting for 21.29% of responses and encompassing 73.45% of cases. Besides, there are 288 respondents who use TikTok to conduct live streaming with 21.51% of responses and 74.23% of cases. Meanwhile, a variety of content attracted 240 respondents (17.92% of responses), leading to 61.86% of cases, and filters and effects were utilized in 203 respondents (15.16%), affecting 52.32% of cases.

Table 4.7: Multiple Response Analysis

What types of products do you typically purchase through TikTok live stream commerce? (multiple choice)			
Constructs	**Frequency**	**% of responses**	**% of cases**
Clothing	302	20.77	77.84
Electronics	222	15.27	57.22
Beauty Product	252	17.33	64.95
Food & Beverages	266	18.29	68.56
Home Décor	221	15.20	56.96
Toys and games	191	13.14	49.23
Total	1454	100	374.74

The above analysis showed the types of products that consumers typically purchase through TikTok live streaming. At first, clothing emerges as the most popular category, with 302 respondents, constituting 20.77% of responses and 77.84% of cases. Next, beauty product follows closely behind, with 252 respondents (17.33% of responses and 64.95% of cases). Next, electronic also has 222 respondents, capturing 15.27% of responses and appealing to 57.22% of cases, showing a significant interest among consumers. Moreover, food and beverages also hold a considerable share, with 266 respondents, representing 18.29% of responses and 68.56% of cases. In addition, Home Décor and toys and games showed moderate interest, with 221 respondents (15.20% of responses and 56.96% of cases) and 191 respondents (13.14% of responses and 49.23% of cases) respectively.

Table 4.8: Multiple Response Analysis

What factors influence your decision to make a purchase on TikTok's live stream commerce? (multiple choice)			
Constructs	**Frequency**	**% of responses**	**% of cases**
Attractiveness of TikToker	262	14.09	67.53
Expertise of TikToker	247	13.28	63.66
TikToker's Product reviews	266	14.30	68.56
Product relevance	277	14.89	71.39
TikToker's engagement	233	12.53	60.05
Discounts/Promotions offered by TikToker	248	13.33	63.92
Quality of product	188	10.11	48.45
Limited availability	139	7.47	35.82
Total	1860	100	479.38

Table 4.8 shows the data regarding the factors that affect the consumer's decision to make a purchase on TikTok's live streaming. Among the constructs provided, product relevance emerges as the most significant driver with 277 respondents, constituting 14.89% of the responses and 71.39% of cases. Besides, the product review of TikToker is also a crucial factor with 266 respondents (14.30% of responses and 68.56% of cases). Next, the attractiveness of TikToker and discount or promotion offered by the TikToker are followed closely behind with 262 respondents (14.09% of responses and 67.53% of cases) and 248 respondents (13.33% of responses and 63.92% of cases) respectively. Moreover, there are 247 respondents who think that the expertise of TikToker will affect their decision to make a purchase in TikTok live streaming, representing 13.28% of responses and 63.66% of cases. In addition, the engagement level of TikToker and the quality of the product sold also play a significant role, with 233 respondents (12.53% of responses and 60.05% of

cases) and 188 (10.11% of responses and 48.45% of cases). Lastly, factors like limited availability are also important as there are 139 respondents support this factor, accounting for 7.47% of responses and 35.82% of cases.

4.4 Partial Least Square Structural Equation Modelling

This study utilized Partial Least Square Structural Equation Modeling (PLS-SEM) to analyze the data. Additionally, the process involved two main steps. Initially, the study conducted an evaluation of the measurement model assessment, followed by the structural model assessment.

4.5 Measurement Model Assessment

4.5.1 Convergent Validity

The measurement model was evaluated to assess the convergent validity. The outcome of the measurement is shown in Table 4.9.

Table 4.9: Measurement Model Assessment

Constructs	Factor Loading	Alpha	rhoA	rhoC	AVE
IPB1	0.851	0.907	0.910	0.931	0.729
IPB2	0.858				

IPB3	0.848				
IPB4	0.845				
IPB5	0.867				
ATT1	0.786	0.875	0.877	0.909	0.667
ATT2	0.835				
ATT3	0.815				
ATT4	0.820				
ATT5	0.829				
EXP1	0.845	0.896	0.898	0.923	0.705
EXP2	0.856				
EXP3	0.837				
EXP4	0.824				
EXP5	0.838				
TP1	0.745	0.912	0.913	0.930	0.655
TP2	0.819				
TP3	0.819				
TP4	0.815				
TP5	0.812				
TP6	0.808				
TP7	0.842				
ITT1	0.843	0.887	0.895	0.921	0.746
ITT2	0.869				

ITT3	0.852				
ITT4	0.890				
PE1	0.860	0.905	0.907	0.929	0.724
PE2	0.875				
PE3	0.858				
PE4	0.826				
PE5	0.835				
FE1	0.864	0.896	0.897	0.927	0.762
FE2	0.879				
FE3	0.879				
FE4	0.870				

According to Table 4.9, the results showed that all the factor loading is more than 0.7. This means that all the factor loading has strong validity for the corresponding constructs. Moreover, the Cronbach Alpha and Composite Reliability such as rhoA and rhoC have met the required threshold values. Additionally, the Average Variance Extracted (AVE) for all exceeds 0.5, ensuring the convergent validity is maintained. Consequently, this study has successfully established convergent validity.

4.5.2 Discriminant Validity

Following the assessment of convergent validity, the study proceeded to conduct Heterotrait-Monotrait Ratio of Correlations (HTMT) to evaluate the discriminant validity of the model. The result of the analysis is presented in Table 4.10.

Table 4.10: HTMT Criterion

Constructs	1	2	3	4	5	6	7
ATT							
EXP	0.237						
FE	0.238	0.32					
IPB	0.317	0.263	0.375				
ITT	0.387	0.423	0.361	0.455			
PE	0.35	0.282	0.212	0.339	0.245		
TP	0.365	0.278	0.408	0.465	0.495	0.366	

Note: HTMT< 0.85

As indicated by Table 4.10, all variables meet the threshold value criteria (i.e, HTMT<0.85), signifying that discriminant validity has been achieved.

4.6 Structural Model Assessment

Before proceeding to structural model assessment, it is imperative to examine the Variance Inflation Factor (VIF) to address potential multicollinearity issues among the variables. Additionally, the result of this examination is presented in Table 4.11. Besides, according to the result, all variables meet the threshold value of <3.3,

indicating the absence of multicollinearity issues. Consequently, it is concluded that there are no issues and is able to proceed to the assessment of the structural model.

Table 4.11: Collinearity Statistics

Constructs	VIF
Attractiveness -> Perceived Enjoyment	1.045
Expertise -> Perceived Enjoyment	1.045
Interactivity -> Flow Experience	1.247
Telepresence -> Flow Experience	1.247
Perceived Enjoyment -> Impulse Purchases Behavior	1.038
Flow Experience -> Impulse Purchases Behavior	1.038

4.6.1 PLS Estimation

In this research, 5,000 bootstrap samples have been conducted with two tailed settings. The result is presented in Table 4.12.

Table 4.12: Path Coefficient and Hypotheses Testing

Hypotheses	β	T value	P values	Confidence Interval bias corrected	Decision
H1: PE -> IPB	0.255	4.731	0.000	(0.164,0.381)	Supported
H2: FE -> IPB	0.292	4.736	0.000	(0.087,0.305)	Supported
H3: ATT-> PE	0.275	4.936	0.000	(0.164,0.405)	Supported
H4: EXP -> PE	0.197	3.564	0.000	(0.080,0.306)	Supported
H5: ITT -> FE	0.198	3.467	0.001	(0.146,0.356)	Supported

H6: TP -> FE	0.285	4.892	0.000	(0.168,0.400)	Supported

According to Table 4.12, all the hypotheses are supported.

At first, the H1 positing a relationship between perceived enjoyment and impulse purchases was investigated. The result shows a β of 0.255 with a corresponding T value of 4.731 and p-value of 0.000, indicating a strong statistical significance. Moreover, the 95% confidence interval bias corrected is between (0.164,0.381), showing further support for this hypothesis. As a result, the H1 is supported, suggesting that there is indeed a relationship between perceived enjoyment and impulse purchases.

Next, H2 posits a relationship between flow experience and impulse purchases. The result shows a β of 0.292 with a corresponding T value of 4.736 and p-value of 0.000, indicating a strong statistical significance. Besides, the 95% confidence interval bias corrected is between (0.087,0.305), showing further support for this hypothesis. Thus, the H2 is supported, suggesting that there is indeed a relationship between flow experience and impulse purchases.

In addition, H3 posits a relationship between attractiveness and perceived enjoyment. The result shows that a β of 0.275 with a corresponding T value of 4.936 and p-value of 0.000, indicating a strong statistical significance. Moreover. the 95% confidence interval bias corrected is between (0.164,0.405), showing further support for this hypothesis. As a result, the H3 is supported, suggesting that there is indeed a relationship between attractiveness and perceived enjoyment.

Furthermore, H4 posits a relationship between expertise and perceived enjoyment. The result shows a β of 0.197 with a corresponding T value of 3.564 and p-value of 0.000, indicating a strong statistical significance. Moreover. the 95% confidence interval bias corrected is between (0.080,0.306), showing further support for this hypothesis. As a result, the H4 is supported, suggesting that there is indeed a relationship between expertise and perceived enjoyment.

Apart from that, H5 posits a relationship between interactivity and flow experience. The result shows a β of 0.198 with a corresponding T value of 3.467 and p-value of 0.001, indicating a strong statistical significance. Moreover. the 95% confidence interval bias corrected is between (0.146,0.356), showing further support for this hypothesis. As a result, the H5 is supported, suggesting that there is indeed a relationship between interactivity and flow experience.

Apart from that, H6 is positing a relationship between telepresence and flow experience. The result shows a β of 0.285 with a corresponding T value of 4.892 and p-value of 0.000, indicating a strong statistical significance. Moreover. the 95% confidence interval bias corrected is between (0.168,0.400), showing further support for this hypothesis. As a result, the H6 is supported, suggesting that there is indeed a relationship between telepresence and flow experience.

4.7 Coefficient of Determination (R2)

Apart from that, the explanatory power of the structural model can be evaluated using R^2. According to Hair et al. (2019), higher R^2 indicates a greater degree of explanatory power. Typically, an R^2 value of 0.75 indicates high power, 0.50 suggests moderate

power and 0.25 may considered weak power. The result of the R^2 analysis for this study is presented in Table 4.13.

Table 4.13: Coefficient of Determination

Constructs	R^2	Explanatory Power
IPB	0.179	Weak
PE	0.137	Weak
FE	0.171	Weak

Based on the findings presented in Table 4.13, the R^2 value for perceived enjoyment is 0.137, indicating the exogeneous variables such as attractiveness and expertise collectively explain 13.7% of the variance in perceived enjoyment, suggesting weak explanatory power. Moreover, the R^2 value for flow experience is 0.171, indicating the exogeneous variables such as interactivity and telepresence had explained 17.1% of the variance in a flow experience, representing weak explanatory power. Lastly, impulse purchases behavior had a R^2 value of 0.179, meaning that it is explained by 17.9% through perceived enjoyment and flow experience, suggesting weak explanatory power.

4.8 Chapter Summary

This chapter provides a summary of the data examined including the demographic profile of the respondents and an analysis of their responses to multiple questions. Besides, the PLS-SEM inferential analysis is conducted by using SMARTPLS. Additionally, the results suggest that all proposed hypotheses were supported and the model demonstrated considerable predictive capability. Moreover, the results suggest

that TikTok live stream commerce has substantial effects on both perceived enjoyment and flow experience and subsequently influences impulse purchase behavior among Malaysian consumers. In short, through understanding these research findings, the next chapter will explore these significant discoveries in greater detail.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATION

5.0 Introduction

This chapter delves into the findings obtained from the research. Subsequently, the implication of this study will also be discussed from both managerial and theoretical perspectives. Finally, this chapter concludes with a discussion of the limitations of the study and recommendations for future research.

5.1 Discussion of Major Finding

The aim of this section was to investigate the correlation between the characteristic of TikToker and perceived enjoyment and flow experience, consequently influencing impulse purchase behavior among Malaysian consumers in the TikTok context by using the SOR model. The result is presented in Table 5.1.

Table 5.1: Summary of Hypotheses Testing

Hypotheses	Decision
H1: Perceived Enjoyment -> Impulse Purchases Behavior	Supported
H2: Flow Experience -> Impulse Purchases Behavior	Supported
H3: Attractiveness -> Perceived Enjoyment	Supported
H4: Expertise -> Perceived Enjoyment	Supported
H5: Interactivity -> Flow Experience	Supported

H6: Telepresence -> Flow Experience	Supported

5.1.1 Perceived Enjoyment and Impulse Purchases Behavior

Based on Table 5.1, hypothesis 1 is supported, aligning with previous studies such as those conducted by Karim et al. (2021) and Liu (2023). This shows that perceived enjoyment can drive impulse purchases among Malaysian consumers though TikTok live stream commerce. Additionally, these results have confirmed the previous argument that the more people feel enjoyment when using an online platform, the higher the probability of consumers making impulse purchase behavior (Karim et al., 2021).

Moreover, the reason is that as intrinsic enjoyment increases, the user's exploratory behavior is stimulated and eventually leads to impulse purchase behavior (Xiang et al., 2016). Additionally, another reason could be the immersive and interactive nature of TikTok live stream commerce further reinforces this relationship by providing real-time engagement opportunities. This fosters a sense of urgency and enhances the overall shopping experience thereby causing impulse purchases among Malaysian consumers. Moreover, the element of social influence within TikTok live stream commerce, where viewers can observe others' purchasing behavior and engage in real-time interactions will further amplify the perceived enjoyment of the consumers and drive impulse purchase behavior among Malaysian consumers.

5.1.2 Flow Experience and Impulse Purchases Behavior

According to Table 5.1, hypothesis 2 is supported which is consistent with previous studies of Huo et al. (2023) and Hoang and Khoa (2022). This shows that flow experience is able to affect the impulse purchase behavior among Malaysian consumers. This result has been explained by the research of Wei et al. (2018), which stated that individuals experiencing a flow state are inclined to explore shopping thereby increasing the likelihood of engaging in unplanned purchases. Therefore, this suggests that the more the customer experiences the flow state, the higher the probability of the consumer making impulse purchase behavior.

Besides, the explanation of this relationship has been stated by previous studies. According to Barta et al. (2022), as customers experience the flow state, their decisions tend to become less deliberate resulting in the purchase of products that they weren't initially intended. This is because flow experience fosters a state of deep engagement and absorption among consumers and this potentially prompts consumers to act impulsively without fully considering the consequences (Chun et al., 2023). Furthermore, the sense of excitement and novelty experienced during the flow states may also affect the decision-making processes of consumers thereby leading them to engage in impulse purchase behavior.

5.1.3 Attractiveness and Perceived Enjoyment

According to Table 5.1, hypothesis 3 is supported which is compatible with the previous study of Joo (2022) and AlFarraj et al. (2021). Additionally, Lee and Chen (2021) discovered a similar trend in the same context of live streaming commerce, even among Chinese consumers. This suggests that regardless of the country, the perceived enjoyment of consumers is influenced by the attractiveness of streamers. This also indicates that attractiveness of the TikToker has the ability to affect the perceived enjoyment of the consumers. This occurs because when viewers see the live streamer in a positive mood, it will then enhance their perception of enjoyment. Hence, this suggests that the more attractiveness the TikToker, the higher the perceived enjoyment that the consumers can receive.

To explain this relationship, Xu et al. (2020) stated that the reason is attractive streamer has the ability to act as an interactive social figure, providing fantasy and enjoyment to viewers during live streams which in turn encourages continued participation and maintains viewer interest. Likewise, Laosuraphon and Nuangjamnong (2022) also explain that the streamer's individual traits especially humor, verbal attractiveness and physical appeal help in enhancing audience enjoyment and retaining customers' interest.

5.1.4 Expertise and Perceived Enjoyment

Based on Table 5.1, hypothesis 4 is supported which is compatible with Lee and Chen (2021) and Chen and Lin (2018). Apart from that, this alignment extends to research conducted in Indonesia, where Instagram and TikTok were utilized as contextual platforms. Therefore, enhancing the expertise of

streamers becomes paramount in enhancing consumer enjoyment, as emphasized by Hechler et al. (2016). This underscores the importance of investing in streamer training and development initiatives to optimize the enjoyment for consumers.

Apart from that, Lee and Chen (2021) have also explained that the reason that causes this relationship is that consumers will engage more with the streamer who demonstrates expertise regarding brands and products. This is due to the reason that expertise will lead the consumers to feel interesting and enjoyable thereby enriching the shopping experience. Moreover, the other reason is that expertise enables streamers to provide insight and recommendations, which can instill confidence and trust in consumers and further contribute to their perceived enjoyment. Apart from that, one of the reasons could be the expertise of the streamer allows them to effectively address consumer inquiries and concerns, fostering a sense of personalized interaction and enhancing overall satisfaction thereby increasing their perceived enjoyment.

5.1.5 Interactivity and Flow Experience

Based on Table 5.1, hypothesis 5 was supported, showing that interactivity had a significant effect on flow experience. Besides, this finding aligns with previous research conducted by Liu et al. (2022) and Huang et al. (2019). Moreover, the result of this hypothesis is also consistent with the research conducted aboard. For instance, the research of Li et al. (2023), Li et al. (2018) Zheng et al. (2023) from China, Sung-Ju Kang et al. (2011) from Korea and van Noort et al. (2012) from the Netherlands all provide further support for the influence of interactivity on the flow experience. These results highlighted that

when individuals feel engaged in an interaction, people tend to participate more actively, which results in enhanced emotional experiences and a deeper state of immersion known as flow experience (Sun et al., 2021).

In addition, Li et al. (2018) explained that live video interactions possess the capacity to create a highly interactive environment for the viewers potentially immersing them in the content being presented. Increasingly, such interactions facilitate immediate feedback and engagement that fosters a sense of connection and involvement among viewers. Apart from that, another reason could be that real-time interactions allow for spontaneous interaction and discussion between the streamer and viewers can enhance the overall experience and deep view engagement. In short, good interactivity of live streamers plays a vital role in enhancing the flow experience of their consumers.

5.1.6 Telepresence and Flow Experience

This study introduced hypothesis 6, which examined the correlation between telepresence and flow experience. Through this research, the result indicated that hypothesis 4 is supported and aligned with prior research such as research conducted by Li and Peng (2021) and Zhu et al. (2022). Similarity, in the context of the study of online learning, previous research has proved that telepresence has a significant effect on the flow experience (Guo et al., 2012). This is due to the reason that when individuals experience a feeling of telepresence while utilizing technological tools, it can evoke a sense of immediate and genuine engagement. As a result, the sense of presence and immersion generated by telepresence encourages focused attention and deep

involvement in the live streaming eventually enhancing the overall flow experience.

Furthermore, Wei and Li (2017) have also explained that telepresence facilitated by live streaming empowers individuals to maintain their focus, ultimately inducing a state of flow where they perceive time passing rapidly. Besides, this correlation could also be explained by the immersive nature of telepresence, which creates a sense of being physically present in the online environment. This feeling of presence enhances individuals' involvement and absorption in the experience thereby contributing to the flow of experience. Moreover, Ming et al. (2021) also stated that strong telepresence can foster a state of flow as it can cause consumers to forget they are in a physical place.

5.2 Implications of The Study

Malaysian TikTok users are increasing year by year, so it is very important to investigate how TikToker can affect their consumers' impulse purchase behavior. Hence, this research aims to explore the characteristics of TikToker as the reason that causes perceived enjoyment and flow experience, subsequently driving the impulse purchase behavior among Malaysian consumers. The results of this study significantly enrich both theoretical comprehension and practical application within the current literature.

5.2.1 Theoretical Implication

In this part, there are there theoretical implications. First and foremost, this study has used the Stimulus-Organism-Response (SOR) theory to investigate how the external stimulus which is TikToker's attractiveness, expertise, interactivity and telepresence influence the organism such as perceived enjoyment and flow experience, ultimately leading to the responses which are the impulse purchases. Although this type of discussion of TikTok in live stream commerce has been widely discussed, the study regarding TikTok live stream commerce in the context of Malaysia is relatively less. Hence, this study contributes to enriching the theoretical understanding of consumer behavior by elucidating the relationship between perceived enjoyment, flow experience and impulse purchases behavior within the context of TikTok live stream commerce in Malaysia. Additionally, this study has also proven that there is a significant relationship between perceived enjoyment and impulse purchases as well as flow experience and impulse purchases. In short, this research underscores the adaptability and relevance of the SOR framework in explaining impulse purchases within Malaysia TikTok.

Next, this study also provides empirical validation of the SOR model in the context of social live stream commerce, especially within the platform TikTok. Moreover, by confirming the relationship the causal relationship between stimuli, organisms and responses, this research underscores the robustness and applicability of the SOR framework in explaining impulse purchase behavior on TikTok. Increasingly, this validation enhances the theoretical foundation of consumer behavior research in digital marketing.

Apart from that, at a theoretical level, this study underscores some factors that were previously overlooked in other research. For instance, while previous studies like Lee and Chen (2021) have only acknowledged the role of the attractiveness and expertise of streamers, this study further identified the significance of interactivity and telepresence in shaping consumer behavior on social media platforms like TikTok. In short, understanding how these stimuli interact and affect viewers' perceptions and experiences enhances our comprehension of impulse purchases in TikTok.

5.2.2 Practical Implication

The practical implications of this study are significant for marketers, businesses and live streamers in understanding and leveraging impulse purchase behavior among TikTok users in Malaysia. Besides, by focusing on the antecedent of perceived enjoyment and flow experience within the context of impulse purchases in Malaysia, several practical implications emerge.

Firstly, this study has found that attractiveness plays a significant role in causing consumers to perceive enjoyment. When consumers encounter attractive TikToker within the platform, they are likely to experience positive emotions such as happy and admiration which could contribute to the sense of enjoyment. Additionally, this enjoyment could be caused by the TikToker's appeal, charisma or characteristics thereby prompting consumers to engage more deeply with the content or the TikToker. Hence, in practical terms, marketers can capitalize on this finding by strategically selecting TikToker who are attractive, humor or authenticity. By partnering with TikToker who can

effectively captivate and appeal to their audience, marketers are able to create content that can elicit enjoyment and foster a positive emotional connection with viewers. Consequently, attractiveness of the TikToker helps their viewer to perceive enjoyment and subsequently stimulate impulsive purchase behavior as consumers are more easily influenced by their feelings of satisfaction and enjoyment which could drive them to make spontaneous purchase decisions while immersed in the TikTok experience.

Moreover, this study also discovered that expertise is also a significant factor that lets consumers perceive enjoyment within the context of TikTok Malaysia. This emphasizes that TikToker must demonstrate expertise or knowledge in a particular subject matter so that they can establish credibility and trustworthiness with their audience. Thus, during live stream commerce, as consumers think that the TikToker is an expert, they are more likely to perceive the experience as valuable and enjoyable, particularly if it enriches their knowledge or enhances their understanding. Apart from that, marketer can leverage the influence of expertise on perceived enjoyment by collaborating with TikTokers who possess domain-specific knowledge and skills relevant to their target audiences and product offerings. Also, by featuring content creators who are perceived as experts in their field, marketers can enhance the credibility and authenticity of their brand messaging thereby fostering a positive and enjoyable experience for viewers. Besides, marketers also should offer training and development sessions for their live streamers to ensure they are expert enough to effectively promote products during the live stream commerce. Besides, by equipping live streamers with knowledge and skill, marketers are able to ensure the quality of live stream commerce experience thereby increasing sales and brand loyalty. In short, marketers should emphasize the expertise of their TikToker to ensure consumers can perceive enjoyment, ultimately leading to impulse purchases among Malaysian consumers.

In addition, this study also showed interactivity is the least significant factor (P-value= 0.001) in the leading flow experience of consumers. However, its importance should not be overlooked. In the case of TikTok live stream commerce, where TikToker promotes products in real-time, interactivity can enhance the flow experience for consumers. For example, features like live comments, polls, and interactive games help the business to foster the sense of engagement and interaction between TikToker and consumers that potentially increase the likelihood of users experiencing flow during the live stream commerce. Therefore, businesses could effectively use these features to encourage active participation from consumers and engage TikTok live stream commerce that can stimulate impulse purchases. Overall, while interactivity may not be the most influential factor in causing flow experience, it still holds practical significance for platforms like TikTok.

Next, the finding also reveals a significant relationship between telepresence and flow experience. This finding also suggests that enhancing telepresence within TikTok live stream could effectively create a more immersive and engaging environment for the consumers, thereby leading to impulse purchases among Malaysian consumers. For instance, the business can utilize features and strategies such as interactive elements and high quality video and audio so that the business can enhance the flow experience of the consumers thereby increasing sales. Moreover, businesses can change their content and presentation style to make the consumers feel deeply engaged and immersed in the live stream of commerce. Increasingly, businesses can also include elements to enhance the flow state such as dynamic visuals and compelling storytelling, ultimately enhancing the impulse purchases of the consumers. In short, it is very

important to emphasize with telepresence during live stream commerce to ensure that consumers experience the flow state.

Furthermore, this study also found that perceived enjoyment plays a significant role in causing impulse purchase behavior. Therefore, this finding suggested that businesses should prioritize creating enjoyable and engaging content on TikTok. For example, businesses can create funny or entertaining content that resonates with user's interests and preferences. This is due to the reason that, by incorporating entertaining and interactive elements in their TikTok live streaming, such as games and interactive pools, businesses can enhance the overall enjoyment of the shopping experience of the consumers. Moreover, this heightened enjoyment can cause consumers to make impulse purchases on TikTok live streaming as they become deeply immersed and engaged in the shopping experiences on TikTok. In short, businesses should emphasize the strategies that can enhance the perceived enjoyment of consumers in order to effectively drive impulse purchase behavior among TikTok users.

Apart from that, this study discovered that flow experience is one of the factors that cause impulse purchase behavior. Hence, understanding the flow experience contributing to impulse purchase behavior among TikTok users can help the business to develop marketing strategies aimed at enhancing consumer engagement on TikTok live streaming. For instance, businesses can incorporate elements such as real-time interaction Q&A sessions, interactive polls and exclusive offers to enhance the flow experience among TikTok users. Besides, the business also can foster a sense of community and belongingness among consumers during the live streaming in order to prolong the flow experience thereby encouraging impulse purchase behavior among the consumers. To achieve this, businesses can actively engage with the comments so that the

connection among viewers can be fostered. Overall, the business should pay more attention to the flow experience in order to make improvement to their marketing strategies to drive consumers to make impulse purchases behavior during TikTok live streaming.

5.3 Limitations of The Study

Although this research has provided contributions that is significant to various parties, it is important to acknowledge that it contains several limitations that could potentially influence the findings.

5.3.1 Limitation of Sample Diversity in the Study

The first limitation of this study is regarding the composition of the people involved. This is due to the reason that most of the respondents are individuals of Chinese ethnicity and there are fewer participants from other ethnic backgrounds like Malay and Indian. Specifically, out of 388 respondents, there are only 37 were Malay, 31 were Indian and 0 for other ethnicities. Hence, this lack of diversity in the sample might affect the applicability of the findings to the wider Malaysian population. Moreover, the overrepresentation of Chinese respondents might skew the result and overlook the unique perspectives and behaviors of people from other ethnic backgrounds. As a result, this study might not fully capture the diversity of consumer preferences and behaviors in the Malaysian market.

5.3.2 Language Barrier and Questionnaire Comprehension

One of the limitations of the study is the challenge posed by the language barrier which affected respondents' understanding of the questionnaire. During the time to collect the data, many respondents struggled to comprehend the questionnaire items which resulted in potential inaccuracies or random responses. This issue highlights the importance of ensuring clarity and accessibility in survey instruments to gather reliable data. Additionally, some of the respondents have also requested for the need for multilingual questionnaires, particularly in Chinese and Malay versions. Therefore, the absence of these language options may limit the participation of the individual not proficient in English, potentially causing a lack of diversity in the sample and introducing bias into the results.

5.3.3 Limited Representation of Older Age Group in Respondents

The last limitation is the limited representation of the older age group among the respondents. While we had a substantial number of participants aged 18-26 which is about 355 respondents, the number decreased significantly for older age groups, with only 19 respondents aged 27-35 and 14 respondents aged 36-42. This discrepancy in sample size across different age groups increases the likelihood of bias in the result as the perspective and behaviors of the older age

group might not be fully represented. Consequently, the result of this study might not entirely reflect the diverse range of experiences and attitudes present within the target population.

5.4 Recommendation for Future Study

5.4.1 Increasing Sample Diversity in Studying Consumer behavior in the Malaysian Market

To address the limitation of sample diversity identified in this study, it is crucial for future research to prioritize efforts in amplifying and balancing the representation of individuals from various ethnic backgrounds, such as Malay, Indian and other ethnicities. Hence, future research can use targeted recruitment strategies that actively seek out participants from underrepresented ethnic groups. Also, future research could adopt a comparative approach to examine consumer behavior across various ethnic groups. As a result, by including participants from a broader ethnic background, researchers can gain a more comprehensive understanding of the factors influencing consumer behavior in the context of TikTok live stream commerce in Malaysia.

5.4.2 Providing Multilingual Questionnaire

In future research, research should also prioritize addressing the language barriers and comprehension issues highlighted in this study. Hence, to ensure that everyone understood the questionnaire, the researcher should focus on creating survey tools that are accessible and easy to understand for people from diverse linguistic backgrounds. For example, future research can develop multilingual questionnaires that include different versions of language. For example, in Malaysia, future research can offer questionnaires in Chinese and Malay alongside English. In short, by providing questionnaires in multiple languages, we can make sure that everyone can fully participate in the research process.

5.4.3 Enhancing Inclusivity of Age Demographics in Research Samples

Apart from that, it is recommended that future research focus on making their sample population more inclusive across different age demographics. For example, future research can consider using a combination of methods for collecting data such as conducting both online surveys and in-person interviews. This is due to the reason that these approaches help to ensure that future research does not miss out on older individuals who might prefer traditional methods or have limited access to online surveys. Apart from that, future research can also collaborate with senior centers or retirement communities to gain access to a wider range of potential participants from older age groups. As a result, by taking these ways, future studies can make sure that their findings are more representative and relevant to the broader spectrum of people.

5.5 Chapter Summary

In this study, we explore the antecedents of perceived enjoyment and flow experience in impulse purchase behavior among TikTok users. Besides, by drawing upon the SOR framework, we investigate the impact of attractiveness, expertise, interactivity and telepresence as stimuli on perceived enjoyment and flow experience ultimately leading to impulse purchases. Increasingly, our findings reveal a significant relationship between the stimuli such as attractiveness, expertise, interactivity and telepresence and the organism of perceived enjoyment and flow experience which in turn, lead to impulse purchase behavior among Malaysian consumers. Specifically, attractiveness, expertise telepresence all positively influence perceived enjoyment and flow experience, thus driving Malaysian users towards impulse purchases on TikTok. Interestingly, we observe that interactivity has the least significant relationship with flow experience, but it still plays a role in driving impulse purchase behavior. In addition, there are three limitations of this study have been acknowledged. Hence, this research has also provided recommendations for future studies in order to prevent the limitations faced in this study. In summary, this study contributes to a deeper understanding of the factors influencing impulsive purchase behavior among TikTok users within the context of Malaysia.

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APPENDICES

Appendix A: Ethical Clearance and Online Survey Questionnaire

UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)
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Re: U/SERC/78-212/2024

13 January 2024

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.	The Motivation for Purchasing Souvenirs Among the Domestic Tourists	Wan Shiuan Ling	Ms Annie Yong Ing Ing	13 January 2024 – 12 January 2025
2.	Factor Affecting Healthy Food Purchase Behaviours of Generation Z	Pe Kai Wen		
3.	Factors Affecting Customer Satisfaction Among Online Shoppers	Dion Teh Jee Wei		
4.	The Factors Influences on Customer Satisfaction and Loyalty in Business Performance	Tang Wei Ping		
5.	The Impact of Social Media Influencer on Youth Online Buying Behaviour in Klang Valley	Goh Pieh Ling	Ms Chin Wai Yin	
6.	A Study on E-commerce Factors that Influence Post-purchase Behaviour of Young Adults in Malaysia	Chan Chiew Kong	Dr Corrinne Lee Mei Jyin	
7.	Factors and Barriers to Attaining Mental Health Services	Chan Pei Xin		

8.	Factors Influencing the Customer Intention in Adopting Autonomous Vehicles (AVs)	Chye Chi Ern	
9.	Applying the Fraud Triangle Theory to Examine Fraudulent Cases from the Perspective of Working Adults	Alex Lau Chin Yeh	Dr Eaw Hooi Cheng
10.	Examining the Influential Factors of Financial Fraud on Social Media from the Perspective of University Students	Bryan Wee Xin Jie	
11.	Factors Affecting Financial Fraud Awareness Among University Students	Liew Yoon Ler	
12.	The Impact of ChatGPT on E-commerce: The Case of Platform-based Business	Lee Siu Ying	Pn Ezatul Emilia Binti Muhammad Arif
No.	Research Title	Student's Name	Supervisor's Name
13.	Adoption Rate of Digital Channel among MSMEs Entrepreneurs. (A Comparison Between Social Commerce and E-Commerce Platforms)	Law Yung Khan	Pn Ezatul Emilia Binti Muhammad Arif
14.	Factor Affecting Consumers Behavioral Intention to Share Digital Footprints on Social Media	Jenny Leong Siew Yee	Pn Farida Bhanu Binti Mohamed Yousoof
15.	Factors Affecting the Unemployment Crisis Among Fresh Graduate in Malaysia	Lim Say Siang	
16.	The Buying Behaviour on Green Products - From A Consumer Perspective	Lim Xiao Xuan	Dr Foo Meow Yee
17.	Factor Affecting Consumer Brand Loyalty on Personal Care Product	Ooi Xin Yi	
18.	Drivers of Employee Retention: A Case Study in Health and Beauty Industry	Tan Chi Ying	
19.	Factors of Remote Work Influencing Remote Work Productivity of Employees in Malaysia	Lee YanZheng	Ms Hooi Pik Hua @ Rae Hooi
20.	Exploring University Students' Readiness for the Industrial Revolution 4.0: A Conceptualised Framework	Poh Joe Yee	Dr Jayamalathi a/p Jayabalan
21.	The Role of Artificial Intelligence on the Overall Success of SMEs in the E-Commerce Sector	Low Wai Ying	Ms K Shamini a/p T Kandasamy
22.	Understanding the Impact of Short Video Advertising on Youth Consumer Behavior	Celine Tia Hui Lin	En Khairul Anuar Bin Rusli
23.	Influence of Corporate Social Responsibility (CSR) on Consumer Purchase Intention	Yeo Ai Ping	
24.	The Impact of Green Marketing of Food and Beverages on Consumers' Purchase Intention	Yong Xin En	
25.	Factors that Influence the Acceptance of QR Payment Among Customers in Malaysia	Lee Hai Wen	Dr Komathi a/p

			Munusamy	
26.	To Study the Influences of Compensation, Work Environment, Motivation on Employee Satisfaction Among Industrial Trainees	Sam Li Ixing		
27.	The Influence of Celebrity Endorsements on Consumers' Purchase Intention Toward Sports Equipment	Chong Wei Ni		
28.	Investigating the factors of online payment technology in influencing consumer purchase behavior	Chua Jun Quan		
29.	The Impact of Utilizing ChatGPT in Higher Education	Lee Zi Wei	Dr Law Kian Aun	
30.	The Effectiveness of Duolingo's AI-Powered Language Learning Platform in Improving Second Language Acquisition Among Malaysia's Tertiary Students	Oh Fang Yan		
31.	The Effects of AI Tools on Undergraduates' Academic Writing Proficiency	Ng Shi Zhe		
32.	Consumer's Coping Strategies Toward Packaging Waste in Food Delivery Service	Tan Shin Rhu	Mr Lee Yoon Heng	
33.	Securing User Trust: A Study on Social Media Privacy, Information Protection, User Education, and Platform Reliability	Lim Jing	Ms Logeswary a/p Maheswaran	
34.	User Acceptance of Neobanks in Malaysia	Tang Sze Jun	Ms Loh Yin Xia	
35.	The Interplay of Digital Financial Literacy, Capability, Autonomy in the Financial Decision-making in Today's Digital Age	Wong Zheng Wah	Dr Low Mei Peng	
36.	Effects of In-store Factors Influencing Consumer Impulse Buying Behavior in Shopping Mall	Soh Xin Jie	Dr Malathi Nair a/p G Narayana Nair	
37.	Examining the Impact of Generation Z's Attitude Towards Counterfeit Footwear in Malaysia	Lim Su Kim		
38.	Young Adults' Intention to Use Mobile Payment in Malaysia	Alvin Chow Mun Sing		
39.	Consumer Motivation to Repurchase Organic Personal Care Products	Crystal Chow Weng Yann		

No.	Research Title	Student's Name	Supervisor's Name	Approval Validity

40.	The Impact of Worklife Balance on Employee Performance in Private Universities in Malaysia	Yeo Jing Wen	Dr Omar Hamdan Mohammad Alkharabsheh	13 January 2024 – 12 January 2025
41.	Determinants of Student's Satisfaction on AI Usage in Education	Chang Charng Jie	Ms Puvaneswari a/p Veloo	
42.	How Artificial Intelligence (AI) is Transforming Tourism Industry	Boon Yi Jean	Pn Raja Nurul Aini Binti Raja Aziz	
43.	Factors Affecting the Consumption Pattern of Fast Fashion Products Among Generation Z	Evelyn Chow Sum Yee	Dr Sia Bee Chuan	
44.	Antecedents and Consequences of Beauty and Cosmetic Products Impulse Purchase on TikTok	Kong Chi Kei	Dr Tang Kin Leong	
45.	Examining the Antecedents of Perceived Enjoyment and Flow Experience in Impulsive Buying Behaviour: A Study from the Perspective of TikTok User	Tan Hong Qing		
46.	Understanding the Determinants of Online Hotel Booking Intentions	Sharon Lian Sin Yee	Dr Tiong Kui Ming	
47.	A Study of Eco-Conscious Consumer Behavior on Green Products	Tan Sze Ting		
48.	Brand Loyalty Among Generation Z Towards Samsung Products in Malaysia	Chey Xin Hui	Dr Yeong Wai Mun	
49.	Factors Influencing the Adoption of Touch 'n Go eWallet Among Consumers in Malaysia	Lim Si Ting		

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 Ts Dr Faidz bin Abd Rahman
Chairman
UTAR Scientific and Ethical Review Committee

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

Online Survey Questionnaire

Greetings to everyone. I am Tan Hong Qing, a Y3S2 student pursuing Bachelor's Degree of International Business (Hons) in Universiti Tunku Abdul Rahman (UTAR). I am currently conducting a research project with the topic of " Examining the Antecedents of Perceived Enjoyment and Flow Experience in Impulsive Buying Behavior: A Study from the Perspective of TikTok Users "

You are invited to participate in this research by filling up this questionnaire.

This survey aims to investigate the antecedents of perceived enjoyment and flow experience in impulsive buying from the perspective of TikTok Users to help us gain a better understanding of your views and opinions regarding consumer impulse buying behavior in the context of TikTok, please take a few minutes to complete and return this questionnaire.

Your cooperation and honest responses are highly appreciated for the success of my research. If you have any recommendations towards my survey, please do not hesitate to contact the researcher via email:hongqingtan5@1utar.my or via phone number 012-2877197.

PERSONAL DATA PROTECTION NOTICE

Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA") which came into force on 15 November 2013, Universiti Tunku Abdul Rahman ("UTAR")is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

1. Personal data refers to any information which may directly or indirectly identify a person which could include sensitive personal data and expression of opinion. Among others it includes:

    a) Name
    b) Identity card
    c) Place of Birth
    d) Address
    e) Education History
    f) Employment History
    g) Medical History
    h) Blood type
    i) Race
    j) Religion
    k) Photo
    l) Personal Information and Associated Research Data

2. The purposes for which your personal data may be used are inclusive but not limited to:

a) For assessment of any application to UTAR
b) For processing any benefits and services
c) For communication purposes
d) For advertorial and news
e) For general administration and record purposes
f) For enhancing the value of education
g) For educational and related purposes consequential to UTAR
h) For replying any responds to complaints and enquiries
i) For the purpose of our corporate governance
j) For the purposes of conducting research/ collaboration

3. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointedoutsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

4. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such informationis no longer require

5. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

6. By submitting or providing your personal data to UTAR, you had consented and agreed for your personal data to be used in accordance to the terms and conditionsin the Notice and our relevant policy.

7. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

8. You may access and update your personal data by writing to us at.

Acknowledgment of Notice

[ ] I have been notified and that I hereby understood, consented and agreed perUTAR above notice.

[ ] I disagree, my personal data will not be processed.

……

Name:

Date:

A: Screening

Do you have a TikTok account?

- Yes
- No

Have you ever made a purchase through TikTok live stream commerce?

- Yes (Please procced to Section B)
- No (Thank you for your participation)

B: Demographic

1. Age:

- 18-26
- 27-35
- 36-42

2. Gender:

- Male
- Female

3. Ethnicity

- Malay
- Chinese
- Indian
- Others

4. Education Level:

- Some high school
- High school graduate or equivalent
- Some college
- Bachelor's degree
- Postgraduate degree

5. Employment Status:

- Employed
- Self employed
- Unemployed
- Student
- Retired
- Housewife

6. Which social media platforms do you use regularly? (multiple choice)

- Facebook
- Instagram
- Twitter
- TikTok
- Xiao Hong Shu

7. How many hours per day do you spend on social media (Facebook, Instagram, TikTok, Xiao Hong Shu, etc.)?

- 1 to 2 hours
- 3 to 4 hours
- more than 5 hours

8. What do you primarily use social media for? (multiple choice)

- Connecting with friends/family
- News
- Entertainment
- Shopping (Livestream commerce)
- Promoting personal or business brand

9. How often do you use TikTok?

- Daily
- Weekly
- Rarely

10. Frequency of Using TikTok Live Stream Commerce:

- Daily
- Weekly
- Monthly
- Less than once a month

11. What features of TikTok do you find most appealing? (multiple choice)

- Short video format
- Variety of content
- User interaction
- Live streaming
- Filters and effects

12. How often do you make purchases through TikTok live stream commerce?

- once in a month
- Twice in a month
- 3 to 4 times in a month
- More than 5 times in a month

13. What types of products do you typically purchase through TikTok live stream commerce?

- Clothing
- Electronics
- Beauty Product
- Food & Beverages
- Home Décor
- Toys and games

14. What factors influence your decision to make a purchase on TikTok's live stream commerce? (multiple choice)

- Attractiveness of TikToker
- Expertise of TikToker

- TikToker's Product reviews
- Product relevance (the product being promoted is relevant to my interests or needs)
- TikToker's engagement (build trust)
- Discounts/Promotions offered by TikToker
- Quality of product
- Limited availability (Sales promotion, limited quantity, etc)

C: Factor

No	Variable	Operational definition	Questions	Source
	Impulse purchase	Impulse purchase is described as a sudden, unplanned, compelling, and hedonic purchasing behavior that lacks deliberate consideration of all available information and alternatives.	1. While watching TikTok live streaming commerce, I had a desire to buy items that did not pertain to my original shopping goals. 2. I experienced several sudden urges to buy things while doing shopping on TikTok live streaming commerce. 3. While watching TikTok live streaming commerce, I was inclined to purchase items outside my original shopping goal. 4. When shopping on TikTok live	(Lee & Chen, 2021)

			streaming commerce, I felt a sudden urge to buy something. 5. I ended up spending more money than I originally set out to spend while shopping on TikTok live streaming . 6.	
	Attractiveness	Most live streamers have developed a reputation as a credible source that has attracted followers. Attractiveness is a cognizable factor.	1. The TikTok live streamer gives me a good feeling. 2. The TikTok live streamer is attractive. 3. The TikTok live streamer catches my attention. 4. I feel the TikTok live streamer is friendly. 5. I feel the TikTok live streamer is likable.	(Lee & Chen, 2021)
	Expertise	Expertise is referred to as "authoritativeness" it involves the knowledge, experience, and	1. I feel that the TikTok live streamer is an expert in their field.	(Y. Li & Peng, 2021)

		capabilities of a live streamer	2. I feel that the TikTok live streamer has experience in live streaming. 3. I feel that the TikTok live streamer is knowledgeable in the field in live streaming. 4. I feel that the TikTok live streamer is qualified to conduct live-streams. 5. I feel that the TikTok live streamer has the skills to conduct live-streams	
	Telepresence	Telepresence in the present study represents the live scene of live streaming, which makes users feel like they are part of the process.	1. While watching a TikTok live-stream, I forgot about my immediate surroundings. 2. Watching a TikTok live-stream often makes me forget where I am. 3. When I watch TikTok live-streams, I feel I'm in a world created by the	(Y. Li & Peng, 2021)

			live-stream I watch 4. When I watch live-streams, my body is in the room, but my mind is inside the world created by the TikTok live-streams I watch. 5. When I watch live-streams, the world generated by the TikTok live-stream I watch is more real for me than the “real world”. 6. Watching the TikTok live-stream creates a new world for me, and this world suddenly disappears when I stop watching. 7. After watching the TikTok live-stream, I feel like I return to the “real world”	

	Live streamer real-time interaction	Live streamers' real-time interaction refers to live streamers promoting direct and immediate communication with online consumers based on peer-to-peer technology.	1. When watching a TikTok live-stream, I can exchange and share opinions with the streamer or other audiences. 2. When I am watching a TikTok live-stream, the streamer knows I'm concerned about him or her 3. When watching a TikTok live-stream, I feel closer to the streamer 4. When I am watching a TikTok live-stream, the streamer provides sufficient opportunities to respond and ask questions	(L. Li et al., 2023)
	Perceived enjoyment	Perceived enjoyment identified as the consumers' cognitive state and emotional state.	1. Shopping with TikTok live streaming commerce was exciting. 2. Shopping with TikTok live	(Lee & Chen, 2021)

			streaming commerce was enjoyable. 3. Shopping with TikTok live streaming commerce was interesting. 4. I found my visit to TikTok live streaming commerce was fun. 5. Shopping with TikTok live streaming commerce was fun.	
7.	Flow experience	Flow formalizes and extends a sense of playfulness, and such sense may shape consumers' attitudes	1. When watching a TikTok live-stream, I lose track of time. 2. When watching a TikTok live-stream, I often forget the tasks I need to do. 3. Watching a TikTok live-stream gives me a temporary escape from the real world. 4. When watching TikTok live-stream, I am not easily distracted by other things.	(Y. Li & Peng, 2021)

APPENDIX B: RESULT GENERATED FROM SMART PLS AND JAMOVI

Outer loadings - Matrix

	ATT	EXP	FE	IB	ITT	PE	TP
ATT1	0.786						
ATT2	0.835						
ATT3	0.815						
ATT4	0.820						
ATT5	0.829						
EXP1		0.845					
EXP2		0.856					
EXP3		0.837					
EXP4		0.824					
EXP5		0.838					
FE1			0.864				
FE2			0.879				
FE3			0.879				
FE4			0.870				
IB1				0.851			
IB2				0.858			
IB3				0.848			
IB4				0.845			
IB5				0.867			
ITT1					0.843		
ITT2					0.869		
ITT3					0.852		
ITT4					0.890		
PE1						0.860	
PE2						0.875	
PE3						0.858	
PE4						0.826	
PE5						0.835	
TP1							0.745
TP2							0.819
TP3							0.819
TP4							0.815
TP5							0.812
TP6							0.808
TP7							0.842

Construct reliability and validity - Overview

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
ATT	0.875	0.877	0.909	0.667
EXP	0.896	0.898	0.923	0.705
FE	0.896	0.897	0.927	0.762
IB	0.907	0.910	0.931	0.729
ITT	0.887	0.895	0.921	0.746
PE	0.905	0.907	0.929	0.724
TP	0.912	0.913	0.930	0.655

Discriminant validity - Heterotrait-monotrait ratio (HTMT) - Matrix

	ATT	EXP	FE	IB	ITT	PE	TP
ATT							
EXP	0.237						
FE	0.238	0.320					
IB	0.317	0.263	0.375				
ITT	0.387	0.423	0.361	0.455			
PE	0.350	0.282	0.212	0.339	0.245		
TP	0.365	0.278	0.408	0.465	0.495	0.366	

Path coefficients - Mean, STDEV, T values, p values

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
ATT -> PE	0.275	0.275	0.056	4.936	0.000
EXP -> PE	0.197	0.197	0.055	3.564	0.000
FE -> IB	0.292	0.289	0.062	4.736	0.000
ITT -> FE	0.198	0.196	0.057	3.467	0.001
PE -> IB	0.255	0.255	0.054	4.731	0.000
TP -> FE	0.285	0.285	0.058	4.892	0.000

Path coefficients - Confidence intervals

	Original sample (O)	Sample mean (M)	2.5%	97.5%
HB -> IP	0.241	0.243	0.143	0.339
II -> HB	0.137	0.139	0.021	0.258
II -> UB	0.150	0.152	0.030	0.269
SE -> HB	0.123	0.126	0.005	0.239
SE -> UB	0.128	0.130	0.006	0.258
SP -> HB	-0.196	-0.201	-0.299	-0.098
SP -> UB	0.332	0.334	0.249	0.419
UB -> IP	0.140	0.143	0.044	0.235

Multi Response

Multi Response

Option	Frequency	Percentage of responses	Percentage of cases
Facebook	357	25.30	92.0
Instagram	360	25.51	92.8
Twitter	60	4.25	15.5
TikTok	371	26.29	95.6
Redbook	263	18.64	67.8
Total:	1411	100.00	363.7

Note. These responses were provided by 388 cases.

Component Statistics

Summary

Component	SS Loadings	% of Variance	Cumulative %
1	10.3	29.4	29.4

Assumption Checks

Collinearity Statistics

	VIF	Tolerance
IB	1.41	0.711
ATT	1.25	0.800
EXP	1.25	0.803
TP	1.51	0.663
ITT	1.52	0.660
PE	1.25	0.802
FE	1.27	0.786