

The Impact of Abandonment of Travel Restrictions and Lockdowns on Consumer Purchase Behavior in Malaysia: The Moderating Role of Perceived Environmental Uncertainty

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Abstract

The COVID-19 pandemic has led to substantial changes in consumer purchasing behaviour, including increased online shopping, altered spending pattern and shifts in consumer priorities and values. This study aims to analyse the consumer purchase behaviour changes when restrictions were not enforced. A quantitative methodology was employed with a data collected via a self-administered survey questionnaire from 405 working adults in Selangor, Malaysia. Smart PLS was used to test hypotheses. The Findings reveal that consumer purchase decisions are significantly influenced by significant stimuli, social stimuli, and esteem needs. Additionally, environmental uncertainty is acknowledged as a moderating factor impacting the relationships between significant stimuli, esteem need and decision-making processes, although it does not moderate the relationship between social stimuli and consumer purchase behavior. These insights are vital for businesses and policymakers to understand how post-pandemic dynamics shape consumer behavior in an era of environmental uncertainty. Future research can explore how technological readiness serves as a moderator, particularly in its impact on engagement with online shopping platforms versus in-store experiences. Additionally examining how sustainability concerns influence consumer preference could provide further insights into evolving consumer behavior.

Keywords: Consumer Purchase Behavior, Post-Pandemic, Travel Restrictions, Environmental Uncertainty, Online Shopping, Social Distancing.

Introduction

In 2020, the COVID-19 pandemic drastically altered consumer spending patterns and lifestyles around the world. Governments worldwide, including Malaysia, responded by implementing strict measures to curb the spread of the virus. Travel limitations, quarantine requirements, mask use, and social distancing recommendations are all part of these measures, which are known as the Movement Control Order (MCO) in Malaysia. The implementation of these measures had a substantial effect on everyday routines, leading to notable changes in consumer conduct, lifestyle decisions, and shopping inclinations. The implementation of these measures had a substantial effect on everyday routines, leading to notable changes in consumer conduct, lifestyle decisions, and shopping inclinations.

The most significant change observed during the early stage of the COVID-19 pandemic was a shift towards online shopping, driven by the closure of physical stores and the public's desire to avoid direct interactions. Consumers have shifted their attention towards essential requirements and displayed diminished interest in non-essential purchases. Moreover, there has been a surge in panic-buying tendencies among customers attributed to the environmental uncertainties stemming from the COVID-19 pandemic. (Omar et al., 2021).

Consumer behavior started to return to pre-pandemic norms in 2022 when pandemic limitations, such as travel limits and ease of mask mandates, started to be relaxed. Although consumers have begun to revert to their customary purchasing patterns, their experiences throughout the epidemic have left a lasting impression on their actions (Sheth, 2020; Tobias, 2022). As pandemic restrictions started to ease in 2022, with the relaxation of mask mandates and travel limitations, a shift in consumer behavior back towards pre-pandemic norms became evident. Consumers have begun reverting to their traditional shopping habits (Sheth, 2020; Tobias, 2021), yet their experiences during the pandemic have left a lasting impact on their behaviors (Hu et al., 2022). Returning to these normal habits influences new patterns of consumer behavior, and it is crucial for businesses to adapt to this new reality to survive (Hu et al., 2022). This adjustment period is critical for businesses that must quickly adapt to these changes to remain viable. Companies are required to further leverage digital platforms and integrate online and offline experiences to meet customers continuously evolving expectations for greater long-term success.

During the post pandemic recovery stage, Malaysians experienced an enhancement in their financial well-being and demonstrated optimism about their financial future, which is ideal for businesses aiming to increase their revenue and attract new customers (Kanapathipillai & Kumarn, 2022). However, achieving this objective necessitates a profound comprehension of Malaysian consumers' purchasing habits, particularly in light of the potential impact of the lifting of travel restrictions and lockdown on online shopping trends. Similarly, it remains to be seen whether lifting of these restrictions and lockdown will lead to a decline in online shopping or if the opposite will occur.

Numerous studies have investigated Malaysians' purchase behaviour, examining factors such as age (Mokhtar et al., 2020), gender (Chan & Abidin, 2022), purchase benefits (Sarangapani

et al., 2023), purchase intention (Sathiaseelah et al., 2023), and purchase channels; however, there is a critical need to further explore the external stimuli and psychological needs influencing consumer behavior, especially in light of the uncertainties like future events similar to COVID-19. This investigation is crucial for shedding light on the shifting dynamics of consumer behavior in the post-pandemic era and providing businesses and policymakers with the essential insights needed to effectively adapt to new market realities. Hence, this study attempts to address the existing knowledge gap in the literature with the two principal objectives: (1) to investigate a significant relationship between significant, social stimuli, esteem toward customer purchase behavior, and (2) to assess environmental uncertainty as a moderating factor between significant, social stimuli, esteem toward customer purchase behavior.

Literature Review, Hypotheses Development and Conceptual Framework

Understanding consumer purchase behavior is crucial for modern marketing strategies, as it reveals the factors influencing consumer decisions and motivations. The COVID-19 pandemic triggered significant changes in buying habits, with public anxiety impacting the retail industry due to excessive negative information (Laato et al., 2020). Businesses adapted by altering sales and delivery methods for essential and non-essential goods (Roggeveen & Sethuraman, 2020). The rise in online shopping Rao (2019), coincided with the gradual reopening of international trade. Social influences and external stimuli significantly affect consumer behavior, highlighting the complexity of purchasing decisions. However, empirical research on post-pandemic changes in consumer habits remains limited (Gupta & Mukherjee, 2022)

Significative Stimuli and Consumer Purchase Behavior

When more physical stores resume business, consumer purchase behavior can be affected in several ways especially after a period of closure. Firstly, consumer purchase behaviors are identified in the store. They may feel more confident and secure about the economy which can lead to an increase in consumer activity and their spending (Hampson et al., 2020). When more physical stores reopen, it provides consumers with more options and opportunities to make purchases. This can positively influence consumers behavior by providing more options for in person shopping. Consumers adjustment patterns can be forecasted considering the extrinsic factors, such as in-store product placement, in-store promotions, catalogue positioning, and environmental conditions (Bashir et al., 2020). Significant stimuli refers to external inputs and marketing environments (Li et al., 2022), In the context of this research, the abandonment of travel restrictions and lockdown serves as a significant stimulus. The removal of these restrictions represents a significant change in the consumer's environment, impacting their choices and behaviours. Therefore, we hypothesize that:

H1: There is a positive relationship between significant stimuli and consumer purchase behavior.

Social Stimuli and Consumer Purchase Behavior

Social factors, including family, reference groups, and social roles and status, play a significant role in shaping consumer purchase behavior. Social stimuli, encompassing recommendations, advertisements, and cultural trends, wield significant influence over consumers (Soti, R. 2022). Several studies provide empirical evidence supporting the concepts of social stimulus and their impact on consumer purchase behavior (Laato et al., 2020).

When customers have unrestricted access to a store, they are more likely to visit frequently as they feel extra comfort and spend more time exploring and purchasing products without constraints which can lead to more spontaneous purchases (Khadka & Maharjan, 2017). This can not only show potentially greater engagement with the brand but also consumers are more likely to make informed decisions and engage repeat visits. Sheth (2020), posits that following a pandemic, consumers may choose to keep, modify, or adopt new behaviors. If no significant changes are made to their lives, it is likely that they will revert to their previous habits, and they persisted in returning to their previous routines.

H2: There is a positive relationship between social stimuli and consumer purchase behavior.

Esteem Need and Consumer Purchase Behavior

Consumers may show interest in new, diverse and imported goods. The relaxation of import restrictions can lead to changes in purchasing patterns, preferences, and increase excitement about the variety of products. This might attract consumers who seek unique or international products, potentially influencing overall buying trends and enhancing consumer satisfaction. For instance, if a country relaxes its import restrictions on foreign car sales, consumers will have more options to choose from (Mashahadi & Mohavidin, 2016). This can lead to an increase in car sales as consumers are more likely to find a car that fits their preferences. Nevertheless, it may also lead to increased competition among imported and domestic products, which can impact consumers behavior in terms of price sensitivity, quality and brand preferences (Kumburu & Kessy, 2018). Consumers might benefit from lower prices and better-quality products due to this competition.

H3: There is a positive relationship between esteem need and consumer purchase behavior.

Significative Stimuli and Consumer Purchase Behavior with Environmental Uncertainty

The pandemic-induced restrictions, including travel bans and lockdowns, had substantial implications for consumer behavior. It has been demonstrated that the COVID-19 pandemic's social isolation can produce alterations in diet and exercise habits, sleep patterns, and physical activity levels (Caroppo et al., 2021). Researchers have discovered that the COVID-19 epidemic lowers people's perceptions of their own self-control, which leads them to consume more heavy, high-calorie foods (Buckland, 2021).

H4: Environmental uncertainty moderates the relationship between significative stimuli and consumer purchase behavior.

Social Stimuli and Consumer Purchase Behavior with Environmental Uncertainty

In the ever-evolving landscape of consumer behavior, the intricate interplay between social stimuli, environmental uncertainty, and purchase decisions unveils a complex narrative. Social stimuli, encompassing recommendations, advertisements, and cultural trends, wield significant influence over consumers (Soti, 2022). With its power to mold attitudes, perceptions, and purchasing decisions, advertising is a major force in shaping consumer behavior (Jones et al., 2020). Because ads are in our daily lives more and more, it is crucial for researchers studying marketing and consumer psychology to comprehend how advertising affects consumer behavior. Customer behavior on these platforms is greatly influenced by company-generated content (Azzam et al 2023).

H5: Environmental uncertainty moderates the relationship between social stimuli and consumer purchase behavior.

Esteem Need and Consumer Purchase Behavior with Environmental Uncertainty

Looking at the environment of uncertainty and crisis, where customer attitudes, perceptions, and behaviors might fluctuate and even become aberrant (Laato et al., 2020). By presenting the concept of privacy stress, the findings also contribute to our understanding of consumers' inevitable yet ongoing usage of online shopping in this unsettling environment (Liu et al., 2020). However, the specific interaction between environmental uncertainty and esteem needs remains a relatively underexplored area. The interaction between esteem needs and consumer behavior may vary depending on the level of environmental uncertainty. In the context of Selangor post-pandemic, the moderating effect of environmental uncertainty on the relationship between esteem needs and consumer purchase behavior requires careful examination. Higher levels of uncertainty may intensify the impact of esteem needs on purchasing decisions, as individuals seek products that provide a sense of security and align with their evolving self-perception (Mittal et al., 2020).

H6: Environmental uncertainty moderates the relationship between esteem need and consumer purchase behavior.

Environmental Uncertainty with Consumer Purchase Behavior

During the early stage of COVID-19 where Malaysia government first announced lockdown restrictions, consumers displayed hoarding behavior and panic purchasing of storable products caused by intolerance of uncertainty (Ridzuan et al., 2021). The unexpected regulations imposed has brought out the awareness of personal health, leading to increased purchasing of green products as the products perceived to be able to enhance their well-being. The apprehension surrounding COVID-19 appears to mirror a widespread inclination towards harboring catastrophic sentiments, particularly in relation to health concerns and a low tolerance for uncertainty pertaining to health-related issues and ambiguous circumstances. Thus, consumers have shown a high level of willingness to spend more money on basic necessities or products that can help in boosting their well-being (Hu et al., 2022).

H7: There is a positive relationship between environmental uncertainty and consumer purchase behavior.

Conceptual framework

Figure 1 outlines the concept of the research and serves as the basis for further discussion on the relationship between the independent and dependent variables, specifically focusing on consumer purchase behavior in this study.

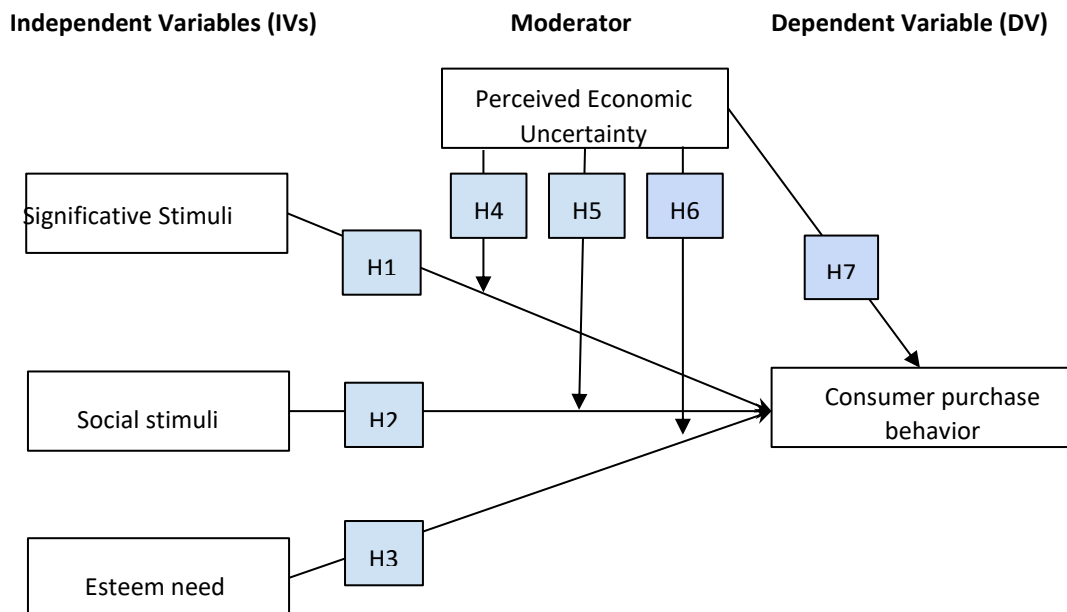


Figure 1: Conceptual framework

Research Methodology

Design of Survey Instrument and Reliability

This study focuses on consumers and businesses in Selangor, a region heavily affected by the COVID-19 pandemic and subsequent restrictions. Selangor, noted for having the highest population in Malaysia, contains a significant number of residents aged 25 to 45, estimated at 3,934,920. This demographic, which represents the largest segment of the labor force, has seen a notable increase in spending capability since the pre-pandemic era. The choice of Selangor is strategic because of its high population density, elevated levels of education, and intense e-commerce activity, making it ideal for examining recovery and online shopping preferences after the pandemic. The ample sample size effectively represents the population, ensures precise results, and provides insights into the spending patterns of key economic demographics.

The primary unit of analysis in this research was individual consumers aged 25–45 years in Selangor. By collecting data at the individual level, this study examines how demographic factors and personal experiences influence consumer purchasing behavior following the lifting of travel restrictions. This approach allows for an in-depth exploration of nuanced variations in purchasing decisions and enhances the understanding of the overall impact of these changes. This research delves into how personal, social, cultural, economic, and psychological factors collectively shape the decision-making process when individuals acquire specific goods or services.

The primary tool used to gather quantitative data in this research was a well-designed structured questionnaire distributed via an online Google Form for convenience and efficiency. The questionnaire was segmented into 6 key sections that explored a broad range of factors that influence consumer purchase behavior. The pilot study, a crucial step in both qualitative and quantitative research methodologies, tested the survey instrument on a small sample representative of the target population. This preliminary phase was aimed at evaluating and improving research methods to enhance the reliability and validity of the data

for the main study. Conducted using Google Forms distributed via email and social networks such as WhatsApp, Instagram, and LinkedIn to respondents within Selangor, the pilot garnered responses from 53 participants, with 52 providing valid answers, resulting in a 98.1 percent response rate. The reliability of the instrument was assessed using the SPSS to calculate Cronbach's alpha for both independent and dependent variables; the results are presented in Table 1.

Table 1

Cronbach's Alpha score for independent variables and dependent variable

Variables	Case Processing Summary	n	%	Cronbach's Alpha	No of Statements
Independent Variable- Significant Stimuli					
Increase in the Number of Physical Store Resuming Business	Valid	52	98.1	0.718	4
	Excluded	1	1.9		
	Total	53	100		
Independent Variable- Esteem Need					
Relaxing of Approval Import Permit	Valid	52	98.1	0.751	5
	Excluded	1	1.9		
	Total	53	100		
Independent Variables- Social Stimuli					
No Limitation of Customers Accessibility to the Store	Valid	52	98.1	0.705	4
	Excluded	1	1.9		
	Total	53	100		
Dependent Variable					
Consumers purchase behavior	Valid	52	98.1	0.861	5
	Excluded	1	1.9		
	Total	53	100		

The results indicated Cronbach's alpha values for the increase in the number of physical stores resuming business at 0.718, for the relaxing of approval import permits at 0.751, and for no limitation of customer accessibility to the store at 0.705 (Table 2). The alpha value for consumer purchase behavior was notably higher (0.861). According to accepted guidelines, alpha values in the range of 0.6-0.7 suggest acceptable reliability, while values of 0.8 or higher indicate good reliability. The instruments used in this study demonstrated good reliability, with alpha values ranging from 0.70 to 0.90.

Target Respondents and Collection of Data

The survey was administered electronically across Selangor using online tools and digital platforms to reach a broad audience efficiently. A simple random sampling technique was employed to ensure demographic representation, including age, sex, and income level. Participants will receive clear instructions to complete the survey, with efforts focused on encouraging a high response rate. Throughout the survey administration, strict adherence to ethical considerations such as data privacy and informed consent will be ensured to maintain

the integrity of the research process. This study employed simple random sampling, a method known to provide an unbiased representation of the population. This technique ensures that every individual within the specified age range in Selangor has an equal chance of being selected, enhancing the study's external validity and generalizability of its findings. Simple random sampling is particularly effective in social science research for deriving generalized results that are applicable across the entire population. This promotes fairness and minimizes selection bias by randomly selecting cases, thus mitigating the confounding impact of various factors and supporting a more deliberate sample selection process.

A structured matrix is developed to systematically analyze the data collected by integrating key variables such as demographic information, consumer purchase behavior patterns, and the perceived impact of lifting travel restrictions and lockdown measures. The matrix employs both descriptive statistics to summarize the demographic profile of the respondents and inferential statistics to draw conclusions and make predictions based on the data. Descriptive statistics will outline basic features, while inferential statistics, including correlation and regression analyses, will explore the relationships between variables and the strength and direction of these associations.

Prior to these analyses, a normality test was conducted to determine the suitability of the data for the correlation coefficients. The study also utilizes bootstrapping analysis to examine the relationships between the independent and dependent variables affecting consumer purchase behavior. Additionally, the structural model assessment evaluates the robustness of these relationships and the impact of significant factors on consumer behavior in the post-pandemic landscape of Selangor. This comprehensive approach to data analysis aims to provide detailed insights into how the abandonment of travel restrictions and lockdowns influences consumer behavior in this region.

Data Analysis and Interpretation

Demographic Profile of the Respondents

A total of 405 (105.4%) valid surveys were collected using a random sampling technique, focusing on working adults in Selangor. Among the respondents, male participants are in majority at 74.3%. The respondents ranged in age from 21 to 50, comprising 91.3% of the participants in this survey. In addition, several percent nearing 97% of respondents were working adults. The total monthly income is almost equal in different ranges, with RM2000-RM2999 having the highest percentage (31.6%) among the others. Figure 2 summarizes the respondents' profiles presented in pie charts.

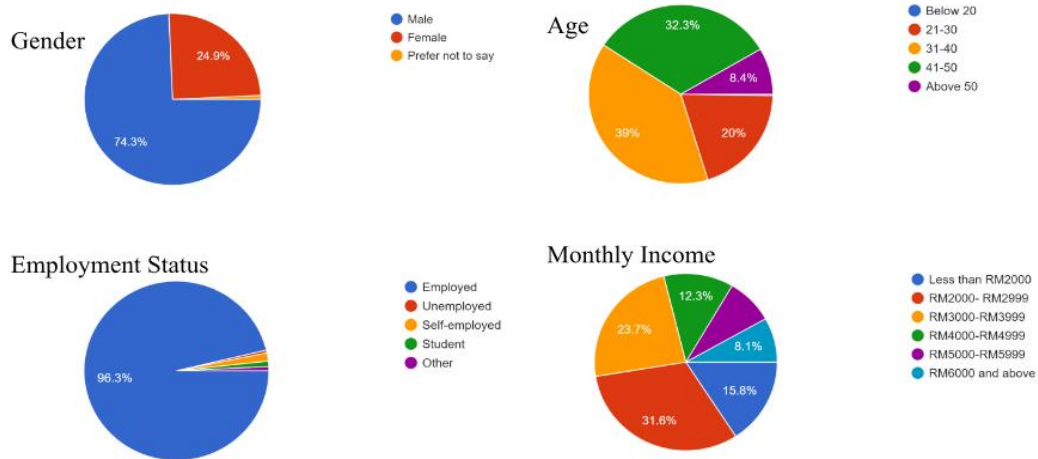


Figure 2: Respondents demographic profile

Confirmatory Factor Analysis

The initial descriptions provided insights into the responses to the distributed questionnaires. The application provides values for both the descriptive and normality analyses.

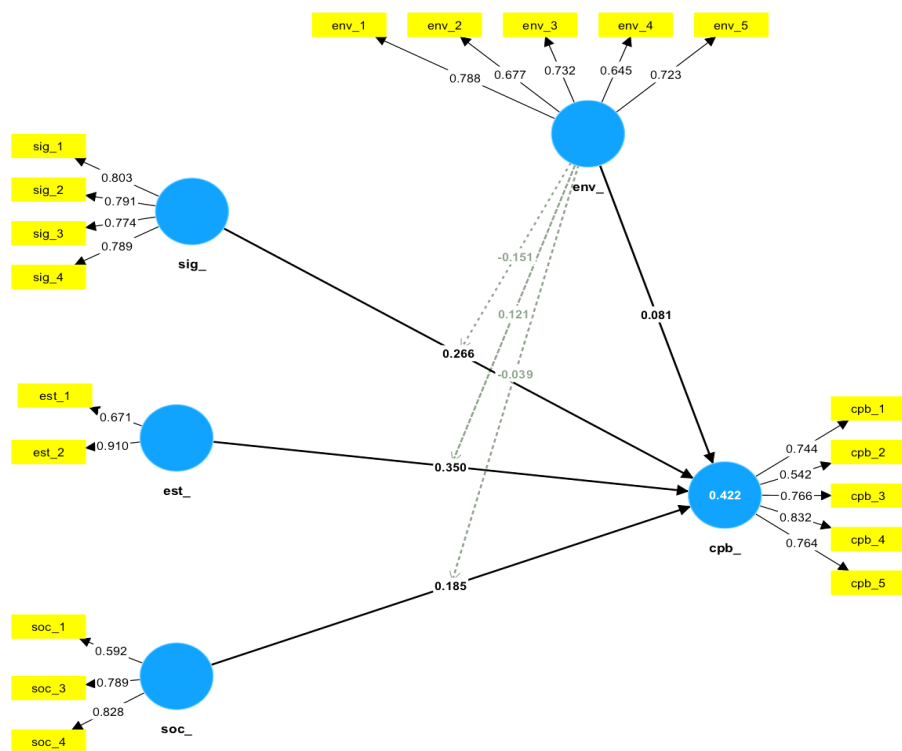


Figure 3: PLS SEM algorithm

This depicts how observable constructs are related to the underlying construct. Using SmartPLS 4 (PLS SEM algorithm), the results obtained can prove internal consistency (Cronbach’s alpha and composite reliability), convergent validity, and discriminant validity. In this study, the constructs of consumer purchase behavior, environmental uncertainty, and significant stimuli met this minimum requirement, demonstrating acceptable reliability. However, the construct for esteem needs and social stimuli did not reach this threshold. The assessment of convergent validity in the measurement model using reflective indicators

involves analyzing the outer loading factor of the indicators associated with each construct. In this evaluation, indicators with an outer loading above 0.4 are retained, while those below this threshold are removed. According to the results presented in Figure 2, all constructs have loading values above 0.4 and an AVE exceeding 0.5, indicating robust convergent validity.

Table 2
Discriminant validity

	cpb_	env_	est_	sig_	soc_	env_ x soc	env_ x est_	env_ x sig_
cpb_								
env_	0.344							
	0.830							
est_		0.625						
sig_	0.630	0.191	0.898					
soc_	0.581	0.702	0.485	0.365				
env_ x soc_	0.070	0.451	0.206	0.068	0.285			
env_ x est_	0.077	0.209	0.175	0.095	0.228	0.633		
env_ x sig_	0.096	0.178	0.281	0.233	0.127	0.406	0.356	

Note: sig_: significant stimuli, est_:esteem need, soc_:social stimuli, cpb_:consumer purchase behavior, env_:environmental uncertainty.

In the matrix, the entries represent the square root of the HTMT ratio, where a value below 0.85 indicates discriminant validity, showing that a construct has a stronger association with its own items than with those of other constructs. Conversely, a value near or exceeding 0.85 suggests potential overlap among constructs, which could compromise discriminant validity. In this analysis, all matrix values fell below the threshold of 0.85, confirming discriminant validity across most of the constructs. However, there is an exception for one item between the esteem need and significant stimuli constructs, where the value is slightly above the threshold at 0.898, indicating a possible overlap between these constructs.

Structural Equation Modelling

To assess the predictive capabilities and relationships of the constructs, a structural model assessment was conducted by analyzing the coefficient of determination (R²), path coefficient (p-value), and effect size (f²). This study included seven hypotheses, including a moderator. Significance testing was performed using SmartPLS 4.0, bootstrapping with a 0.05 significance level for a two-tailed test across 5,000 samples. T statistics greater than 1.96 are considered significant, and a p-value smaller than 0.05 confirms the significant impact of the latent variables. R2 values were categorized as weak, moderate, or substantial in the regression prediction if they exceeded 0.25, 0.50, and 0.75, respectively. Additionally, an effect size (f²) greater than 0.02. indicative a significant effect of the constructs on the outcomes. Figure 4 depicts the results of PLS Bootstrapping analysis. This type of analysis is often used in structural equation modeling to assess the significance and reliability of hypothesized paths in a model. The circles represent constructs or latent variables, while the arrows indicate the directional relationships between them.

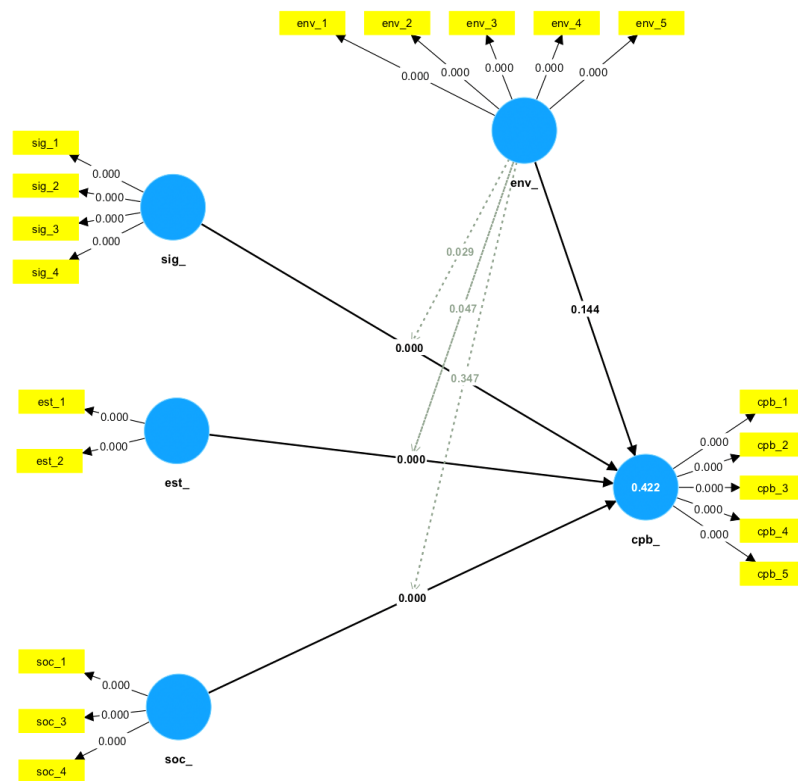


Figure 4: PLS Bootstrapping results

Major Findings

The structural model assessment (Table 3) employed p-values to determine the validity of the proposed hypotheses. Hypotheses 1,2,3,4 and 6 show significant effects, with p-values of less than 0.05. Two hypotheses, H5 and H7, were rejected based on their p-values and T-statistics, indicating a lack of statistically significant evidence to support their claims. The effect size (f^2) for both H5 and H7 is lower than the minimum value of 0.02, which indicates low effects of the variables on the construct. On the other hand, H6, which has reached the validity value for the p-value and T-statistic, appears to have a slightly low effect size when the f^2 value is 0.017. The R-square obtained from the construct was 0.422, which translates to a moderate strength of the regression prediction. In other words, the regression explained 42% of the latent variables in the construct.

Table 3
Structural Model Assessment

Hypotheses	Path	Original sample			
		(O)	T statistics	P values	f ²
H1	sig_ -> cpb_	0.266	4.878	0.000	0.074
H2	soc_ -> cpb_	0.185	3.894	0.000	0.041
H3	est_ -> cpb_	0.350	5.731	0.000	0.117
H4	env_ x sig_ -> cpb_	-0.151	2.190	0.029	0.023
H5	env_ x soc_ -> cpb_	-0.039	0.941	0.347	0.003
H6	env_ x est_ -> cpb_	0.121	1.984	0.047	0.017
H7	env_ -> cpb_	0.081	1.463	0.144	0.007

Note: sig_: significant stimuli, est: esteem need, soc: social stimuli, cpb: consumer purchase behavior, env: environmental uncertainty.

Note: 5,000 bootstrap samples.

Positive Relationship between Significant Stimuli and Consumer Purchase Behavior

The acceptance of H1 (P value $0.000 < 0.05$) confirms a positive relationship between significant stimuli and buying behavior, likely driven by increased access to product information and easier promotions in the digital era through social media, email, and online advertising. This statistical evidence underscores the important role that significant stimuli play in influencing consumers' purchasing decisions. This result indicates that greater awareness and easier access to information can enhance the effects of social stimuli and need for recognition on purchases. The acceptance of H1 asserts that the psychological effects of promotions, such as urgency, exclusivity, and perception of value, are also reported to play a crucial role in motivating purchases, with women being more likely to make impulsive clothing purchases than men (Matanović et al., 2022). Adaptation to online purchasing and easy access to information digitally strengthen the influence of significant stimuli on purchasing decisions Rana et al (2023), and affect up to 50.7% of purchasing decisions. This demonstrates how technology through digital marketing and the availability of the Internet have changed consumer approaches to purchasing, facilitating new ways of accessing information and responding to promotions (Jie et al., 2022).

Positive Relationship between Social Stimuli and Consumer Purchase Behavior

The acceptance of H2 (P value $0.000 < 0.05$) confirms the substantial impact of social media and social interactions on consumer purchasing behavior, which not only confirms the pivotal role of social influences on the decisions consumers make regarding purchases, but also emphasizes the power of social media and interpersonal interactions in shaping consumer preferences and behaviors. This is catalyzed by several key factors, which, combined with external stimuli such as promotions and internal needs such as self-recognition, emphasize consumer adaptation to the changing dynamics caused by environmental uncertainty. The acceptance of H2 emphasizes the crucial role of social media in influencing consumer purchasing decisions through friend recommendations, influencers, positive reviews, and social validation, which increases trust. As reported by AL-Sous et al (2023), in Jordan, Manzoor et al (2020), in Nepal and Shafnaz (2021), in Sri Lanka, with an increase during the COVID-19 pandemic. Social conformity encourages consumers to mimic the purchasing

behavior of their group, while personalization and targeting of advertisements on social media enhance relevance, privacy issues, cognitive attitudes, affective attitudes, and the likelihood of purchasing (Reena and Udit, 2020). This indicates that social media facilitates interactions between social recommendations and internal motivations in a dynamic environment, including customer engagement and brand loyalty (Shawky et al., 2020).

Positive Relationship between Esteem Need and Consumer Purchase Behavior

The acceptance of H3 (P value $0.000 < 0.05$) in this study shows a positive relationship between the need for recognition and consumer buying behavior, which can be explained through various psychological and social factors. The acceptance of H3 asserts that consumer buying behavior is formed by the complex interaction between internal needs, external influences, and environmental uncertainty. Consumers purchase products not only to satisfy basic needs, but also to self-express and achieve social status (Jiang et al., 2021), often through products that give them recognition and boost self-confidence and fear of missing out on social status (Ilyas et al., 2022). This consumer need approach is also underpinned by Maslow's Hierarchy of Needs, which suggests that low-level basic needs, such as physiological requirements, comfort, certainty, and security, must be met before higher-level needs are met (Altymurat et al., 2021), especially during the COVID-19 period (Dwivedi and Badge, 2021). Under such conditions, the desire for self-recognition drives purchases that provide emotional satisfaction, triggering increased and repeated future purchases. Consumers with high emotional intelligence tend to make fewer impulsive purchases and experience greater life satisfaction during the COVID-19 pandemic (Tariq et al. 2021).

Environmental Uncertainty Moderates the Relationship between Significant Stimuli and Consumer Purchase Behavior

The acceptance of H4 (P-value $0.029 < 0.05$) affirms that environmental uncertainty significantly influences how significant stimuli affect buying behavior, indicating that the effect of significant stimuli on buying decisions is not static; rather, it varies according to the level of environmental uncertainty. The acceptance of H4 underscores the fact that environmental uncertainty significantly affects consumer buying behavior, with four main factors: sensitivity to promotions, changes in buying priorities, more thorough information searches, and the emotional impact of uncertainty. In times of uncertainty, consumers are more sensitive to promotions than to prevention (Chung, 2020); Yang et al (2022), add that brand quality and loyalty require different marketing communication strategies. Uncertain conditions can also affect changes in the buying priorities. For example, during the COVID-19 pandemic, safety and food needs have become priorities (Zhao et al., 2022). Consumers also conduct a more detailed search for information and communicative product promotions when making purchasing decisions (Horvath et al., 2022). Moreover, uncertainty can increase stress or anxiety and affect emotional value; therefore, promotions that offer solutions to these issues are likely to influence purchasing decisions (Zhang and Zhang, 2022).

Environmental Uncertainty Does Not Moderate the Relationship between Social Stimuli and Consumer Purchase Behavior

The acceptance of H5 (P-value $0.347 > 0.05$) reveals that environmental uncertainty does not significantly moderate the influence of social stimuli on consumer buying behavior. This means that, despite fluctuations or uncertainties in the environment, the way consumers respond to social stimuli in making purchasing decisions remains largely unaffected. This

result confirms that factors, such as recommendations from friends and online product reviews, continue to affect purchasing decisions. This outcome is most likely influenced by factors such as desensitization to social stimuli and consumer skepticism. Studies in various countries such as Indonesia by Maulid et al (2022), highlight that social media continues to influence purchasing decisions by sharing opinions, recommendations, and product reviews. Factors such as mouth-to-mouth credibility, content quality, and attractive advertisement design affirm that consumers remain open and responsive to suggestions (Ahmed, 2020; Mu, 2023). Increased skepticism about information from social media in uncertain situations can also reduce the influence of social recommendations on buying behavior. Even though skepticism towards social media increases in situations of uncertainty, consumers are still influenced by recommendations and online reviews when making purchasing decisions (Alam et al., 2023). Furthermore, an increased preference for personalization by consumers, as indicated by the acceptance of H3, indicates that consumers tend to prioritize their personal needs and preferences when shopping, even under uncertainty. Studies by Parsad et al (2021), and Habib et al (2021), report that consumers who prioritize personalization tend to focus on their individual needs and preferences when shopping, including when facing uncertainty. Factors such as interpersonal trust Mou and Benyoucef (2021), social norms Melnyk et al (2021), and emotional intelligence Ahn (2022) have a greater influence on purchasing behavior than environmental uncertainty.

Environmental Uncertainty Moderates the Relationship between Esteem Need and Consumer Purchase Behavior

The acceptance of H6 (p-value $0.047 < 0.05$) highlights the role of environmental uncertainty in influencing how the need for recognition moderate's consumer buying behavior. This result indicates that the influence of esteem needs on consumer decisions is contingent on the level of environmental uncertainty. Besides, the acceptance of H6 suggests that in conditions of uncertainty, such as economic crises or pandemic situations, individuals often seek products or services that enhance self-recognition or confidence in coping with feelings of uncertainty. Shapiro et al. (2020) reported that changes in intolerance to uncertainty are associated with increased symptoms of social anxiety, worry, depression, and negative impact. Self-uncertainty triggers an increase in physiological activation and stress reactions. However, identification of a highly cohesive group can reduce these reactions (Brown et al. 2021). Calinescu et al. (2020) reported that 71% of respondents in their survey believed that adaptable systems could face unexpected changes by developing new actions or applying standard actions. Purchases in these uncertain conditions are not only seen as transactions but also as ways to control aspects of life, enhance arousal, offer emotional stability, and meet needs to feel valued or recognized for gaining a sense of freedom. Consumers may prefer to invest in goods or experiences that provide higher intrinsic value or long-term benefits (Chirumbolo et al., 2021), reflecting changes in consumption priorities influenced by environmental uncertainty.

No Relationship between Environmental Uncertainty and Consumer Purchase Behavior

The rejection of H7 (p-value $0.144 > 0.05$) indicates that there is no positive relationship between environmental uncertainty and an increase in consumer purchasing behavior. This suggests that variations in environmental factors such as economic conditions, market volatility, or socio-political changes do not necessarily lead to an increase in consumer purchases. In times of uncertainty, such as during an economic crisis or pandemic, consumers

tend to adopt pruning behavior, limiting their spending on basic needs, which does not support an overall increase in purchases. This indicates that uncertainty may not motivate additional purchases, and instead encourages priority on financial security and health. The rejection of H7 indicates that environmental uncertainty triggers pruning behavior, whereby consumers reduce their spending and focus on purchasing basic necessities. Environmental awareness, environment-friendly corporate innovations (Long and Liao, 2021), and cultural variables (Jiang and Kassoh, 2022) also play crucial roles in shaping purchasing behavior. Environmental uncertainty does not always have a positive relationship with consumer purchasing behavior. Instead, issues such as health, the environment, and ethics, along with factors such as price impact, information overload and cyberchondria, anxiety and cognitive dissonance, and intolerance of uncertainty, complexly influence consumer behavior. (Nie et al., 2021). Meanwhile, uncertainty tolerance can contribute to higher adherence to health advice during a pandemic, and uncertainty in other conditions can affect economic policies, such as insurance premiums and purchasing behavior (Aljanabi, 2021).

Discussion

This study evaluated the impact of significant stimuli, esteem needs and social stimuli on consumer purchase behavior while examining the moderating effect of perceived economic uncertainty on the relationship between significant stimuli, esteem needs and social stimuli on the consumer purchase behavior. The PLS findings indicated that all connections were statistically significant and positive. Out of 7 proposed hypotheses, all relationships were positive except environmental uncertainty does not moderate the relationship between social stimuli and consumer purchase behavior, meaning to say that despite the uncertain environment, consumers continue to rely on social cues, demonstrating the persistence influence of social stimuli on consumer purchase behavior. This finding is similar to the findings of Singh (2023); Dwivedi and Kushwaha (2023), and other research in various countries such as and Indonesia by Maulid et al (2022), highlight that social media continues to influence purchasing decisions by sharing opinions, recommendations, and product reviews. Factors such as mouth-to-mouth credibility, content quality, and attractive advertisement design affirm that consumers remain open and responsive to suggestions (Ahmed 2020; Mu 2023).

The research provides essential insights for businesses to understand the evolving consumer behavior in the post-pandemic era. This understanding is crucial for developing effective business strategies, tailoring marketing approaches, and optimizing product offerings. Businesses can use the findings to adapt and remain competitive in the dynamic marketplace. Understanding post-pandemic consumer purchase behavior is essential for businesses to adapt and remain competitive. For industries and businesses, adopting hybrid business models that combine online and offline elements could address the varying consumer preferences revealed in this study. Enhancing the online presence, focusing on consumer safety, and leveraging digital marketing are crucial. Businesses should also invest in understanding and responding to consumer trends within the target demographic, emphasizing sustainability and innovating product offerings to align with emerging consumer needs. Strategic partnerships and enhanced communication about safety measures and brand values could build consumer trust and loyalty during uncertain times.

Academia should focus on longitudinal and cross-cultural studies to explore the long-term and global impact of the pandemic on consumer behavior. There is a need for updated

curricula that incorporate lessons learned from the pandemic, emphasizing digital transformation, and sustainable practices. Collaborations between academia, industry, and policymakers could foster a comprehensive understanding of consumer behavior shifts and support the development of strategies to effectively navigate post-pandemic challenges. Continuous research and community engagement are vital for adapting to the evolving market landscape and ensuring resilience in the face of future uncertainty.

Conclusions

This study, grounded in Maslow's hierarchy of needs theory, investigated the significant impact of esteem needs, social stimulus and significant stimulus on consumer purchase behavior. These factors moderated by perceived economic uncertainty, confirmed the connection between the variables and consumer purchase behavior. The findings suggest that lifting restrictions leads to increased consumer spending, which could have implications for the businesses in terms of their marketing strategies. Furthermore, the role of perceived environmental uncertainty as a moderator provides valuable insight for businesses and policymakers to consider when planning for ongoing economic recovery and future resilience. Conversely policy makers can endeavour to establish a stable and encouraging economic climate. To guarantee long-term stability and prosperity, this may entail encouraging innovation, aiding small and medium-sized businesses, and making investments in infrastructure and workforce development.

This study has some limitations. primarily our survey focused on consumers particularly among individuals aged between 25 to 45 and recommending future research focus on diverse aged group; and additionally the frame of investigation focused on esteem needs, social stimulus and significant stimulus, suggesting an expanded framework encompassing an elements like phycological factors and attitudes which can play a crucial role in consumer behavior Finally, multiple future studies set in different periods and regions would be able to validate this structure

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