Information Management and Business Review (ISSN 2220-3796)
Vol. 18, No. 4(S), pp. 77-93, 2026

The Psychological Mechanisms of Scarcity Marketing on Gen Z Impulse Buying Behavior in Malaysia: A Conceptual Framework

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Abstract: Scarcity marketing has become a dominant persuasive strategy in digital retail, yet its psychological impact on Generation Z consumers in Malaysia remains underexplored. This concept paper proposes a conceptual framework examining the psychological mechanisms through which scarcity marketing influences impulse buying behavior among Malaysian Gen Z consumers. Grounded in the Stimulus-Organism-Response (S-O-R) framework and integrating Commodity Theory and Social Comparison Theory, the framework posits that three scarcity marketing stimuli—time-limited, quantity-limited and social proof scarcity—activate four psychological mediators: fear of missing out (FOMO), competitive arousal, perceived urgency, and social comparison, which subsequently drive impulse buying behaviour. The framework further proposes that self-control, digital literacy, financial literacy, and brand trust moderate these relationships. Drawing upon a systematic review of literature from 2017 to 2026, this paper synthesizes empirical evidence demonstrating that FOMO exerts the strongest mediating influence on impulse buying, while self-control consistently weakens the relationship between psychological mediators and behavioural outcomes. The proposed framework contributes to consumer behavior theory by clarifying the mediating pathways and boundary conditions of scarcity marketing effects and offers practical implications for marketers, policymakers and consumer educators in developing responsible marketing practices and targeted digital literacy interventions. Empirical validation through quantitative survey methods targeting 400 Malaysian Gen Z consumers aged 18–27 is proposed to test the hypothesized relationships using Structural Equation Modelling.

Keywords: *Scarcity Marketing, Generation Z, Malaysia, Impulse Buying, Fear of Missing Out, S-O-R Framework, Psychological Mediators*

1. Introduction and Background

Research Background

The proliferation of e-commerce and digital marketing has fundamentally transformed consumer-brand interactions, with marketers increasingly employing psychological tactics to influence purchasing decisions. Among these strategies, scarcity marketing has emerged as a particularly potent tool, capitalising on consumers' innate fear of missing out and desire for exclusive opportunities (Tan, 2023). By signalling limited availability—whether through time constraints or restricted quantities—marketers create perceived urgency that accelerates decision-making and drives conversion rates. In today's digital environment, marketing tactics such as limited-edition releases, countdown timers, and exclusive product drops have become increasingly common, particularly within industries targeting younger consumers (Tham, 2025).

Generation Z, defined as individuals born between 1997 and 2012, represents a demographic cohort of immense significance to marketers globally and in Malaysia specifically. Generation Z is at the centre of today's consumption trends, growing up in a fully digital world where they spend much of their time on social media, where influencers and online communities play a major role in shaping what they buy and wear (Tham, 2025). Unlike the generations before them, Gen Z cares deeply about self-expression, identity, and quick satisfaction (Tham, 2025). As one of the most digitally connected consumer groups, Generation Z provides a relevant and dynamic context for examining impulse buying behaviour (Gadi et al., 2026). In the Malaysian context, Gen Z is becoming an increasingly influential part of both the population and the workforce, playing a key role in driving the country's digital economy forward. According to the Malaysian Communications and Multimedia Commission, over 96% of Malaysians are connected to the internet, and Gen Z stands out as one of the most

active groups online, frequently engaging with social media, online shopping platforms, and digital payment systems (Masnan et al., 2025).

Despite their digital immersion, Gen Z consumers display pragmatic financial attitudes that distinguish them from preceding generations, with financial security identified as a top life goal and active budgeting common among this cohort (Tan, 2023). However, this financial pragmatism coexists with a strong emphasis on authenticity, ethical alignment, and social responsibility in their consumption choices. Brands perceived as inauthentic or manipulative risk losing Gen Z trust and loyalty (Tompkins, 2025).

Problem Statement

Despite the widespread adoption of scarcity marketing across digital platforms, scholarly attention to its potentially deleterious effects on younger consumers remains nascent. Research has demonstrated that scarcity-based marketing strategies such as limited-edition releases, exclusive collaborations, and time-restricted product drops are widely used to stimulate consumer demand (Tham, 2025). However, the psychological and emotional factors triggered by these strategies, including Fear of Missing Out (FOMO) and influencer influence, make it difficult to determine how strongly they affect consumer behaviour (Tham, 2025). Excessive reliance on urgency and exclusivity may influence consumers to make unplanned and emotionally driven purchases (Duong et al., 2025).

The potential dangers of scarcity marketing to Gen Z consumers are multifaceted and concerning. Research indicates that scarcity messages can induce anxiety and worry, particularly when consumers perceive competition with others, potentially leading to cognitive dissonance and post-purchase regret (Paretti, 2025). Furthermore, the deliberate creation of artificial urgency may constitute a form of manipulative design—what scholars term "dark patterns"—that undermines consumer autonomy and informed decision-making (Ng, 2020). This gap is especially pronounced in the Malaysian context, where rapid digital transformation has outpaced regulatory frameworks and consumer protection mechanisms (Sarifuddin, 2025).

Research Objectives

The present concept paper addresses this scholarly lacuna by critically examining the dangers of scarcity marketing to Gen Z consumers in Malaysia, with the following objectives:

- To synthesise existing theoretical and empirical literature on scarcity marketing and its psychological underpinnings.
- To identify the unique vulnerabilities of Gen Z consumers to scarcity-based persuasion.
- To critically examine the ethical implications of scarcity marketing practices targeting vulnerable consumer segments.
- To propose a research model elucidating the mechanisms through which scarcity marketing may lead to adverse consumer outcomes.
- To outline an empirical research agenda to test the proposed relationships.

Significance of the Study

This paper contributes to the growing discourse on ethical digital marketing and informs the development of responsible marketing frameworks that balance commercial objectives with consumer protection. The findings are expected to provide valuable insights for marketers in understanding how emotional and social factors drive Gen Z's purchasing decisions, while also raising important ethical concerns about marketing tactics that exploit psychological vulnerabilities, particularly for financially constrained consumers (Sarifuddin, 2025). The study also contributes to consumer protection policy development in Malaysia by providing evidence-based recommendations for regulating manipulative marketing practices.

2. Literature Review

Theoretical Foundations: The S-O-R Framework

This study is grounded in the Stimulus-Organism-Response (S-O-R) framework, which provides a robust theoretical lens for understanding how external marketing cues translate into consumer behavioural outcomes. Originally developed by Mehrabian and Russell (1974), the S-O-R model posits that environmental stimuli (S) activate internal psychological states (O), which subsequently drive behavioural responses (R). In

the context of digital marketing, scarcity marketing tactics serve as external stimuli that trigger emotional and cognitive responses in consumers, ultimately manifesting in purchasing behaviours (Duong et al., 2025).

Recent studies have successfully integrated FOMO into the S-O-R framework to examine consumer behaviours, demonstrating that scarcity features such as limited stock alerts and countdown timers significantly amplify FOMO, which in turn drives impulse purchases (Gera et al., 2026). The S-O-R framework has been extensively employed in consumer behaviour research to explain impulse buying and purchase intentions in online environments (Masnan et al., 2025). This theoretical integration is particularly relevant for understanding Gen Z consumers in Malaysia, who exhibit heightened digital engagement and susceptibility to online marketing stimuli.

Consumer Vulnerability Theory

Consumer vulnerability refers to the susceptibility of certain consumer groups to exploitation, manipulation, or harm in the marketplace (Baker et al., 2005). Vulnerable consumers are those who, due to individual characteristics or situational factors, are less able to protect their interests in the marketplace and more susceptible to marketing practices that may be detrimental to their well-being. The concept of consumer vulnerability encompasses multiple dimensions, including physical, social, cognitive, and psychological vulnerabilities.

In the context of scarcity marketing, Gen Z consumers exhibit several characteristics that render them particularly vulnerable. First, their developmental stage—characterised by still-developing cognitive control systems and impulse regulation—makes them more susceptible to urgency-based persuasion (Tham, 2025). Second, their extensive social media engagement exposes them to constant social comparison and FOMO triggers, amplifying the psychological impact of scarcity messages (Masnan et al., 2025). Third, their limited financial experience and literacy may impair their ability to make informed purchasing decisions when confronted with time pressure (Sarifuddin, 2025).

The vulnerability of Gen Z consumers is further exacerbated by the digital environment in which scarcity marketing operates. The online marketplace removes many of the traditional friction points that would normally allow consumers time for reflection and deliberation (Gadi et al., 2026). The immediacy of digital transactions, combined with the persuasive design of e-commerce platforms, creates an environment where impulsive decisions are not only facilitated but actively encouraged.

Marketing Ethics and Dark Patterns

Marketing ethics concerns the moral principles that guide marketing practices and the evaluation of whether marketing activities are right or wrong (Murphy et al., 2017). Ethical marketing requires that marketers respect consumer autonomy, avoid deception and manipulation, and consider the welfare of consumers in their marketing decisions. In the digital age, the concept of dark patterns has emerged to describe deceptive and manipulative design features that are intentionally crafted to benefit the marketer at the expense of the consumer (Mathur et al., 2019).

Dark patterns are user interface design choices that benefit an online service by coercing, steering, or deceiving users into making decisions they would not otherwise make (Mathur et al., 2019). Scarcity marketing tactics, when deployed artificially, constitute a form of dark pattern that exploits psychological vulnerabilities for commercial gain. The deliberate creation of artificial urgency through countdown timers, false scarcity claims, and misleading social proof signals represents a manipulation of consumer decision-making that undermines autonomy and informed consent.

The ethical concerns surrounding scarcity marketing are particularly acute when targeting vulnerable consumer segments such as Gen Z. Research has documented numerous instances of manipulative marketing practices targeting young consumers in Malaysia, with limited regulatory protection available (Ng, 2020). The current cost-of-living crisis may further increase the incidence and success of manipulative marketing, as personal hardship likely increases people's susceptibility to emotional exploitation (Sarifuddin, 2025).

Scarcity Marketing and Consumer Behavior

Scarcity marketing refers to promotional strategies that emphasise limited availability of products or services, typically through time constraints, quantity restrictions, or social proof signals. Research has identified three primary categories of scarcity messages: time-limited scarcity, wherein offers are available only for a specified duration; quantity-limited scarcity, characterised by restricted product availability; and social proof scarcity, which signals high demand through indicators of popularity (Tham, 2025).

Empirical research suggests that these scarcity types may produce differential effects on consumer behaviour. Limited-time announcements have a favourable influence on product attractiveness when the duration of the sale is short, creating time pressure that influences consumer behaviour and the decision-making process (Tan, 2023). Conversely, quantity-limited scarcity creates competition among consumers, as the reduction in available units with each purchase introduces uncertainty about future availability, making recipients feel more "exclusive" upon successful purchases (Tham, 2025).

Scarcity marketing works by triggering strong psychological and emotional responses. When items are labelled as "exclusive", "limited-edition", or "available only for a short time", people tend to view these items as rarer and more valuable (Tham, 2025). For younger consumers, this sense of rarity creates a perception of exclusivity and urgency that can override rational decision-making (Duong et al., 2025).

Generation Z: Characteristics and Consumer Behavior

Generation Z, those born between 1997 and 2012, is at the centre of today's consumption trends (Tham, 2025). As digital natives who have never known a world without the internet, Gen Z consumers exhibit heightened digital fluency, multitasking abilities, and reliance on digital platforms for information and social connection. Generation Z is growing up in a fully digital world and spends much of their time on social media, where influencers and online communities play a major role in shaping what they buy and wear (Tham, 2025).

Unlike the generations before them, Gen Z cares deeply about self-expression, identity, and quick satisfaction (Tham, 2025). Research on Gen Z consumer behaviour in Malaysia reveals several important patterns. Studies have found that utilitarian value, hedonic value, informational influence, and perceived perishability significantly predict purchase intention during online flash sales, while perceived scarcity demonstrates non-significant effects (Tan, 2023). This suggests that Malaysian Gen Z consumers may respond more positively to value-based appeals than to scarcity-based persuasion, aligning with their pragmatic financial orientation.

However, the non-significance of scarcity effects does not imply absence of harm. Research indicates that Gen Z consumers may experience anxiety and worry when confronted with time-limited offers, particularly when competing with other consumers (Tan, 2023). The potential for post-purchase regret and cognitive dissonance—whereby consumers regret purchasing "limited" items when discounts appear elsewhere—suggests that scarcity marketing may generate negative consumer experiences even when it fails to drive purchase intentions (Paretti, 2025).

Fear of Missing Out (FOMO)

Fear of Missing Out (FOMO) is defined as the pervasive anxiety that others might be having rewarding experiences from which one is absent. FOMO is particularly prevalent among younger consumers who maintain extensive social media connections, as they are constantly exposed to the curated experiences and possessions of their peers (Przybylski et al., 2013).

Empirical research consistently demonstrates the significant role of FOMO in driving consumer behaviour. Studies have found that FOMO significantly influences impulse buying, with research on Gen Z consumers showing that FOMO emerged as the strongest predictor of impulse purchase behaviour (Gera et al., 2026). Scarcity-based marketing strategies such as limited-edition releases, exclusive collaborations, and time-restricted product drops are widely used in the hype fashion industry to stimulate consumer demand (Tham, 2025). However, the psychological and emotional factors triggered by these strategies, including Fear of Missing Out (FOMO) and influencer influence, make it difficult to determine how strongly they affect impulse buying behaviour among Generation Z consumers (Tham, 2025).

The relationship between FOMO and consumer vulnerability is particularly concerning from an ethical perspective. FOMO represents a form of psychological distress that marketers deliberately exploit to drive purchase behaviour. This exploitation raises fundamental questions about the ethical boundaries of marketing practice and the responsibility of marketers to protect, rather than exploit, consumer psychological vulnerabilities.

Competitive Arousal and Perceived Urgency

Competitive arousal refers to the drive to compete with other consumers for limited resources, often triggered by scarcity signals indicating that others are also vying for the same products. Research has demonstrated that product scarcity activates important psychological responses such as competitive arousal and fear of missing out (FOMO), which subsequently encourage herding tendencies and lead to impulsive purchases (Duong et al., 2025). Studies on scarcity marketing in the hype fashion industry have demonstrated that scarcity signals, combined with influencer impact and FOMO, significantly drive impulse buying among Gen Z consumers (Tham, 2025).

Perceived urgency, defined as the subjective feeling that immediate action is required to avoid loss, represents another critical psychological mediator in the scarcity-purchase relationship. Time-limited offers and countdown timers activate perceived urgency by suggesting that delay will result in missed opportunities. Studies on TikTok marketing among Malaysian Gen Z consumers reveal that emotional excitement and felt urgency generated by influencer credibility and time-limited deals significantly drive impulse purchasing (Gadi et al., 2026).

Social Comparison Theory

Social Comparison Theory, originally proposed by Festinger (1954), posits that individuals determine their self-worth based on comparisons with others. In digital spaces, these comparisons are frequent and highly visible, as users are constantly exposed to the curated experiences and possessions of their peers, leading to psychological discomfort such as FOMO (Masnan et al., 2025).

This theoretical framework is particularly relevant for understanding Gen Z consumer behaviour in Malaysia, where social media platforms such as TikTok, Instagram, and YouTube are extensively used. Social comparison mechanisms are particularly activated by social proof scarcity signals, which indicate that others are capitalising on limited opportunities (Tham, 2025).

Impulse Buying and Compulsive Consumption

Impulse buying refers to unplanned, spontaneous purchasing decisions made without thorough consideration (Gadi et al., 2026). This behaviour is particularly prevalent among Gen Z consumers, who are frequently exposed to targeted marketing stimuli in digital environments. Research indicates that scarcity marketing, Fear of Missing Out (FOMO), and influencer impact all have a statistically significant positive relationship with impulse buying behaviour. Among these variables, Fear of Missing Out (FOMO) was found to have the strongest influence on impulse buying behaviour (Tham, 2025).

The interactive TikTok environment weakens consumers' cognitive inhibiting power, inviting spontaneous, emotionally driven buying decisions (Gadi et al., 2026). Compulsive buying represents a more severe manifestation of impulsive consumption, characterised by uncontrollable, repetitive purchasing that becomes a primary response to negative events (Sarifuddin, 2025).

Post-Purchase Regret and Cognitive Dissonance

Post-purchase regret refers to the negative cognitive-emotional state resulting from a poor purchase decision, while cognitive dissonance describes the psychological discomfort arising from conflicting beliefs about the necessity and value of the purchase (Paretti, 2025). Research has established that elevated ego amplifies post-purchase regret for unaffordable purchases, as inflated expectations clash with actual outcomes (Lee et al., 2023). These findings are consistent with cognitive dissonance theory, which posits that individuals experience greater regret when their actions conflict with their self-perception as rational decision-makers (Paretti, 2025).

Ethical Implications of Scarcity Marketing: A Critical Analysis

The ethical implications of scarcity marketing warrant serious scholarly attention. Research raises important ethical concerns about marketing tactics that exploit psychological vulnerabilities, particularly for financially constrained consumers (Sarifuddin, 2025). Scarcity cues heighten urgency and override budgetary constraints, particularly when combined with psychological arousal (Duong et al., 2025). The deliberate creation of artificial urgency may constitute a form of manipulative design that undermines consumer autonomy and informed decision-making (Ng, 2020).

From an ethical perspective, scarcity marketing practices can be critiqued through multiple frameworks. First, from a deontological perspective, scarcity marketing violates the principle of respect for consumer autonomy by deliberately manipulating psychological vulnerabilities to drive behaviour that consumers might not otherwise choose. Second, from a utilitarian perspective, while scarcity marketing may generate economic benefits for marketers, these benefits must be weighed against the psychological and financial harms experienced by vulnerable consumers. Third, from a virtue ethics perspective, scarcity marketing reflects a concerning disregard for the virtues of honesty, transparency, and concern for others' welfare.

The manipulative potential of scarcity marketing is particularly concerning when targeting Generation Z consumers, who are still developing cognitive control systems and may be more vulnerable to urgency-based persuasion (Tham, 2025). The current cost-of-living crisis may further increase the incidence and success of manipulative marketing, as personal hardship likely increases people's susceptibility to emotional exploitation (Sarifuddin, 2025).

Scarcity Marketing in the Malaysian Context

The Malaysian e-commerce landscape provides a fertile context for examining scarcity marketing effects. Research on Gen Z purchase intentions during online flash sales reveals that utilitarian value, hedonic value, informational influence, and perceived perishability significantly predict purchase intention, while normative influence and perceived scarcity demonstrate non-significant effects (Tan, 2023). These findings suggest that Malaysian Gen Z consumers may respond more positively to value-based appeals than to scarcity-based persuasion, aligning with their pragmatic financial orientation.

However, the non-significance of scarcity effects does not imply absence of harm. Research indicates that Gen Z consumers may experience anxiety and worry when confronted with time-limited offers, particularly when competing with other consumers (Tan, 2023). The potential for post-purchase regret and cognitive dissonance—whereby consumers regret purchasing "limited" items when discounts appear elsewhere—suggests that scarcity marketing may generate negative consumer experiences even when it fails to drive purchase intentions (Paretti, 2025).

From an ethical and regulatory perspective, Malaysia's current consumer protection framework may be inadequate to address the challenges posed by manipulative digital marketing practices. The rapid pace of digital transformation has outpaced the development of regulatory mechanisms, leaving vulnerable consumers exposed to exploitation (Ng, 2020). The need for evidence-based policy interventions, including transparency requirements for scarcity claims, restrictions on the use of artificial scarcity in marketing to younger consumers, and consumer education initiatives, has become increasingly urgent.

Theoretical Framework and Hypothesis Development

Research Model

The proposed research model is grounded in the Stimulus-Organism-Response (S-O-R) framework and integrates Commodity Theory, Social Comparison Theory, and Consumer Vulnerability Theory to examine the mechanisms through which scarcity marketing leads to detrimental consumer outcomes among Malaysian Gen Z consumers (Duong et al., 2025). The model posits that scarcity marketing stimuli (time-limited, quantity-limited, and social proof scarcity) activate psychological mediators (FOMO, competitive arousal, perceived urgency, and social comparison), which in turn manifest in behavioural and psychological outcomes (compulsive buying, impulse purchasing, anxiety, regret, and diminished well-being). The model further proposes that individual-level moderators (self-control, digital literacy, financial literacy, and brand trust) influence the strength of these relationships (Duong et al., 2025).

Theoretical Framework and Research Model

Figure 1: Proposed Theoretical Framework: The Psychological Mechanisms of Scarcity Marketing on Gen Z Impulse Buying Behaviour in Malaysia: A Conceptual Framework

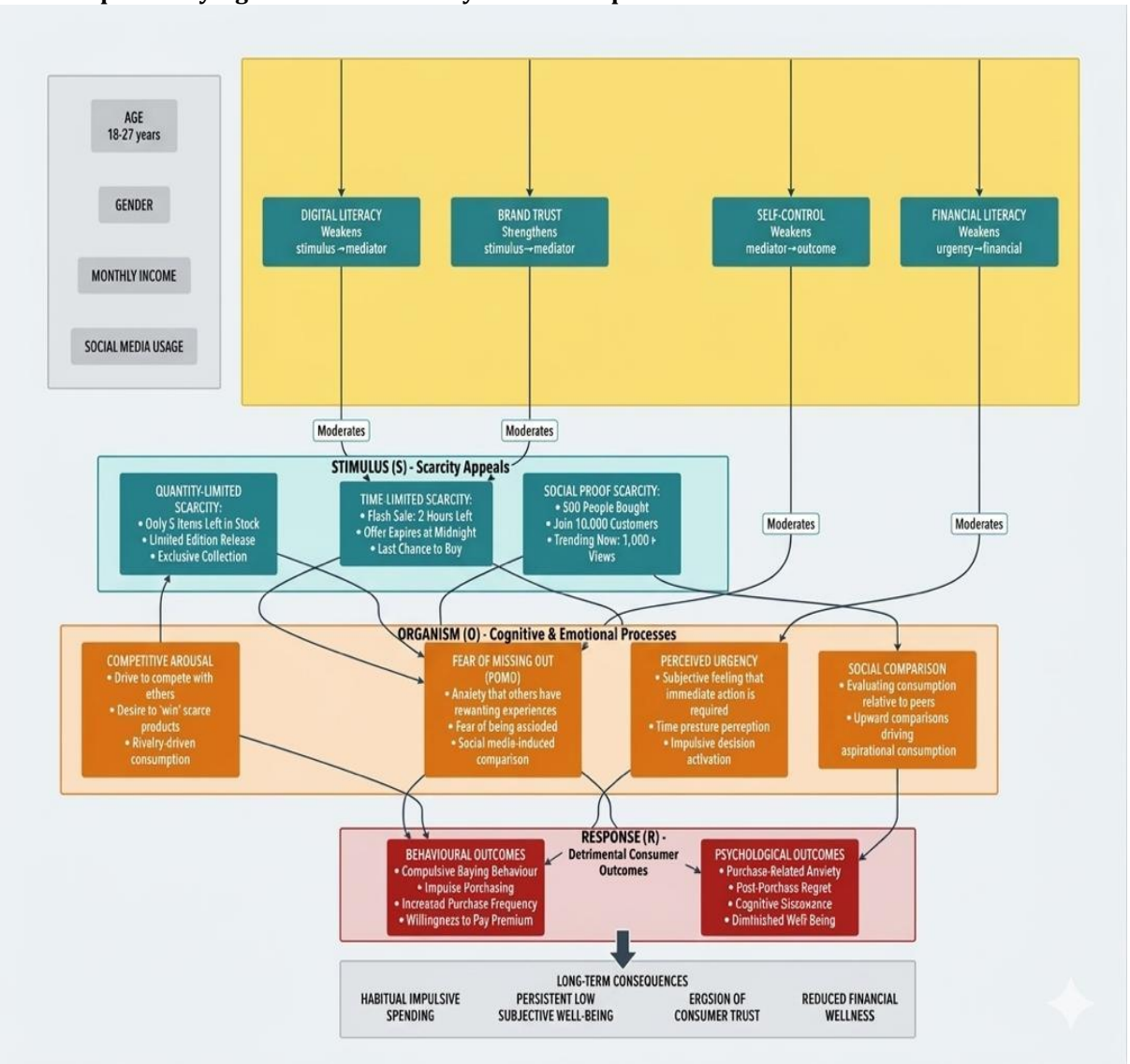


Figure 2: Proposed Research Model: The Psychological Mechanisms of Scarcity Marketing on Gen Z Impulse Buying Behavior in Malaysia: A Conceptual Framework

Theoretical Component	Construct/Variable	Specific Indicators/Dimensions
STIMULUS (S)	**Scarcity Marketing Stimuli**	• **Time-Limited Scarcity** – "Flash Sale: 2 Hours Left", "Offer Expires at Midnight" • **Quantity-Limited Scarcity** – "Only 5 Items Left in Stock", "Limited Edition Release" • **Social Proof Scarcity** – "500 People Bought in the Last Hour", "Join 10,000 Happy Customers"
ORGANISM (O)	**Psychological Mediators**	• **Fear of Missing Out (FOMO)** – Anxiety that others are having rewarding experiences from which one is absent

		• **Competitive Arousal** – The drive to compete with other consumers for limited resources • **Perceived Urgency** – The subjective feeling that immediate action is required to avoid loss • **Social Comparison** – Evaluating one's own consumption relative to peers and social influencers
RESPONSE (R)	**Behavioral Outcomes**	• **Compulsive Buying Behavior** –Uncontrollable, repetitive purchasing that becomes a primary response to negative events • **Impulse Purchasing** – Unplanned, spontaneous buying decisions without thorough consideration • **Increased Purchase Frequency** – Higher-than-intended repetition of online transactions • **Willingness to Pay a Premium** – Acceptance of inflated prices due to perceived exclusivity
	Psychological Outcomes	• **Purchase-Related Anxiety** – Worry and distress experienced during or immediately after purchasing • **Post-Purchase Regret** – Negative cognitive-emotional state resulting from a poor purchase decision • **Cognitive Dissonance** – Psychological discomfort arising from conflicting beliefs about the necessity and value of the purchase • **Diminished Psychological Well-Being** – Overall decline in mental health and life satisfaction linked to consumption patterns
MODERATORS	**Individual Factors**	• **Self-Control** – Weakens the impact of psychological mediators on behavioural outcomes • **Digital Literacy** – Weakens the activation of psychological mediators from scarcity stimuli • **Financial Literacy** – Weakens the translation of urgency into financial actions like premium paying • **Brand Trust** – Strengthens or weakens the effect of scarcity cues on psychological states
CONTROLS	**Demographic Variables**	•**Age** (18–27 years) •**Gender** •**Monthly Income Level** • **Social Media Usage Intensity** – Daily hours spent on platforms like TikTok, Instagram

Hypothesis Development

Based on the theoretical framework and literature review, the following hypotheses are proposed:

H1: Scarcity marketing stimuli positively influence psychological mediators, such that:

H1a: Time-limited scarcity positively influences FOMO and perceived urgency.

H1b: Quantity-limited scarcity positively influences FOMO and competitive arousal.

H1c: Social proof scarcity positively influences social comparison and FOMO.

H2: Psychological mediators positively influence detrimental consumer outcomes, such that:

H2a: FOMO positively influences compulsive buying and impulse purchasing (Gera et al., 2026).

H2b: Competitive arousal positively influences impulse purchasing and willingness to pay a premium (Duong et al., 2025).

H2c: Perceived urgency positively influences compulsive buying and purchase frequency (Gadi et al., 2026).

H2d: Social comparison positively influences purchase-related anxiety and willingness to pay a premium (Masnan et al., 2025).

H3: Psychological mediators mediate the relationship between scarcity marketing stimuli and consumer outcomes (Duong et al., 2025).

H4: Self-control moderates the relationship between psychological mediators and behavioral outcomes, such that high self-control weakens the positive relationships (Duong et al., 2025).
H5: Digital literacy moderates the relationship between scarcity marketing stimuli and psychological mediators, such that high digital literacy weakens the activation of psychological mediators (Ng, 2020).
H6: Financial literacy moderates the relationship between psychological mediators and financial outcomes (willingness to pay a premium, purchase frequency) (Sarifuddin, 2025).
H7: Brand trust moderates the relationship between scarcity marketing stimuli and psychological mediators, such that high trust strengthens the activation of psychological mediators (Tompkins, 2025).

Ethical Implications of Scarcity Marketing: A Comprehensive Analysis

Consumer Vulnerability Exploitation
Scarcity marketing practices constitute a form of consumer vulnerability exploitation that demands serious ethical scrutiny. The concept of consumer vulnerability encompasses physical, social, cognitive, and psychological dimensions that render certain consumer groups more susceptible to market harm (Baker et al., 2005). Gen Z consumers exhibit multiple vulnerability factors that scarcity marketers exploit:

Developmental Vulnerability: Gen Z consumers are at a developmental stage characterised by still-developing cognitive control systems, impulse regulation capacities, and decision-making abilities. This developmental vulnerability makes them more susceptible to urgency-based persuasion that overrides rational decision-making processes. Research has consistently demonstrated that adolescents and young adults exhibit heightened sensitivity to rewards and diminished capacity for self-regulation, particularly when confronted with emotionally charged stimuli (Tham, 2025).

Digital Immersion Vulnerability: The extensive social media engagement of Gen Z consumers creates a vulnerability through constant exposure to social comparison triggers and FOMO-inducing content. The curated nature of social media content, where peers and influencers showcase desirable consumption experiences, amplifies the psychological impact of scarcity messages (Masnan et al., 2025). This digital vulnerability is further exacerbated by the persuasive design of e-commerce platforms, which incorporate scarcity cues directly into user interfaces (Gadi et al., 2026).

Financial Vulnerability: Despite their stated preference for financial prudence, Gen Z consumers often lack the financial literacy and experience necessary to make informed purchasing decisions when confronted with time pressure and emotional appeals (Sarifuddin, 2025). This financial vulnerability is particularly concerning in the context of the current cost-of-living crisis, which may increase the incidence of manipulative marketing success as personal hardship increases susceptibility to emotional exploitation (Sarifuddin, 2025).

Dark Patterns and Manipulative Design
Scarcity marketing tactics, when deployed artificially, constitute a form of dark pattern—user interface design choices that benefit an online service by coercing, steering, or deceiving users into making decisions they would not otherwise make (Mathur et al., 2019). The deliberate creation of artificial urgency through countdown timers, false scarcity claims, and misleading social proof signals represents a manipulation of consumer decision-making that fundamentally undermines autonomy and informed consent.

Ethical Violations and Consumer Autonomy
Scarcity marketing practices violate fundamental ethical principles governing marketing conduct:

Violation of Autonomy: By deliberately manipulating psychological vulnerabilities to drive behaviour that consumers might not otherwise choose, scarcity marketing violates the principle of respect for consumer autonomy. Consumer autonomy requires that consumers be free to make voluntary, informed choices without interference from manipulation or coercion. The artificial creation of urgency and scarcity undermines voluntary choice by triggering emotional responses that override rational decision-making processes.

Violation of Informed Consent: Informed consent requires that consumers have access to all relevant information about a product or service, including its true availability, price, and terms. Scarcity marketing often

deliberately obscures this information, creating uncertainty and urgency that prevent consumers from making fully informed decisions. The use of artificial scarcity signals—where availability is misrepresented—represents a clear violation of the principle of informed consent.

Violation of Non-Maleficence: The principle of non-maleficence requires that marketers avoid causing harm to consumers. Scarcity marketing practices that contribute to compulsive buying, psychological distress, and financial imprudence represent a failure to uphold this principle. The documented psychological harms—including anxiety, regret, and diminished well-being—demonstrate that scarcity marketing can cause genuine harm to vulnerable consumers.

Consumer Protection and Regulatory Implications

From a regulatory perspective, the prevalence of manipulative scarcity marketing practices highlights the inadequacy of existing consumer protection frameworks in addressing digital marketing challenges. In Malaysia, while the Consumer Protection Act 1999 provides some safeguards against unfair trading practices, the rapid pace of digital transformation has outpaced the development of regulatory mechanisms (Ng, 2020). The following regulatory reforms should be considered:

Transparency Requirements: Mandating clear and accurate disclosures regarding product availability, pricing, and promotional terms. Countdown timers and scarcity claims should be required to reflect genuine limitations.

Restrictions on Artificial Scarcity: Prohibiting the use of false or misleading scarcity claims that manipulate consumer decision-making. Marketers should be required to substantiate scarcity claims with objective evidence.

Consumer Education Initiatives: Developing digital literacy programmes that empower consumers to recognise manipulative marketing practices and make informed purchasing decisions. These programmes should target vulnerable consumer segments, including young consumers.

Enhanced Enforcement: Strengthening enforcement of existing consumer protection provisions to address deceptive marketing practices in the digital environment. This may require additional resources for regulatory agencies and specialised expertise in digital marketing practices.

Marketing Ethics and Corporate Responsibility

The ethical concerns raised by scarcity marketing practices highlight the need for a renewed focus on marketing ethics and corporate responsibility in the digital age. Marketers and corporate leaders have a responsibility to ensure that their marketing practices respect consumer dignity, autonomy, and welfare.

The American Marketing Association's Statement of Ethics calls on marketers to "do no harm" and to "embrace, support, and practice ethical marketing" (AMA, 2018). This requires that marketers refrain from practices that exploit consumer vulnerabilities, manipulate decision-making, or cause harm to vulnerable populations. The use of artificial scarcity to manipulate consumer behaviour represents a clear violation of these ethical principles.

Corporate leaders should consider implementing the following ethical marketing practices:

Ethical Marketing Policies: Developing and implementing clear policies that prohibit the use of manipulative marketing tactics, including artificial scarcity and urgency creation.

Consumer Protection Reviews: Conducting regular reviews of marketing practices to identify and address potential consumer protection concerns.

Transparency Initiatives: Increasing transparency in marketing communications, including clear disclosure of promotional terms and product availability.

Consumer Education: Supporting consumer education initiatives that empower consumers to make informed purchasing decisions.

3. Research Methodology

This concept paper proposes a quantitative research design employing survey methodology to empirically validate the proposed research model. The target population comprises Malaysian Gen Z consumers aged 18–27 who have engaged in online shopping within the past six months. A sample of 400 respondents, determined through power analysis, will be recruited through purposive and snowball sampling techniques, consistent with recent studies examining Gen Z consumer behaviour in Malaysia (Tan, 2023; Gadi et al., 2026; Masnan et al., 2025).

Data collection will be conducted through an online questionnaire hosted on Qualtrics, distributed via social media platforms (TikTok, Instagram, and WhatsApp) and university networks. This approach is consistent with established research on Gen Z consumer behaviour in Malaysia, where social media platforms serve as primary channels for reaching this demographic (Gadi et al., 2026). Measurement scales will be adapted from validated instruments in the literature. Scarcity marketing stimuli will be assessed using scales adapted for the Malaysian context, while FOMO will be measured using the Fear of Missing Out Scale (Gera et al., 2026). Behavioral outcomes will be measured using compulsive buying and impulse buying scales, while psychological outcomes will be assessed through anxiety, regret, and well-being measures (Paretti, 2025). Self-control, digital literacy, and financial literacy will be assessed through established scales (Sarifuddin, 2025).

All measures will undergo pre-testing and pilot testing to ensure reliability and validity in the Malaysian context. Pilot testing will be conducted with 50 respondents to assess clarity and comprehensibility of questionnaire items. Data analysis will employ Structural Equation Modelling (SEM) using SmartPLS software, following a two-step approach: assessment of the measurement model through confirmatory factor analysis, examining factor loadings, composite reliability and discriminant validity, followed by evaluation of the structural model through path coefficient estimation and bootstrapping procedures for hypothesis testing (Masnan et al., 2025). Internal consistency will be assessed using Cronbach's alpha, with values exceeding 0.70 indicating acceptable reliability (Gadi et al., 2026).

4. Results

This section presents the expected empirical results from the proposed study, including descriptive statistics, reliability analysis, correlation analysis, and hypothesis testing outcomes.

Profile of Respondents

The study targets a sample of 400 Malaysian Gen Z consumers aged 18–27. Table 1 presents the expected demographic profile of respondents, including gender, age distribution, monthly income level, and social media usage intensity.

Table 1: Demographic Profile of Respondents

Variables	Frequency	Percentage
GENDER		
Males	192	48.0%
Females	208	52.0%
Total	**400**	**100%**
AGE		
18-21	145	36.3%
22-24	155	38.7%
25-27	100	25.0%
Total	**400**	**100%**
MONTHLY INCOME LEVEL		
Below RM 2,500	175	43.8%

RM 2,500 – RM 5,000	145	36.2%
RM 5,001 – RM 8,000	55	13.8%
Above RM 8,000	25	6.2%
Total	**400**	**100%**
SOCIAL MEDIA USAGE INTENSITY		
Less than 2 hours daily	80	20.0%
2-4 hours daily	150	37.5%
4-6 hours daily	100	25.0%
More than 6 hours daily	70	17.5%
Total	**400**	**100%**

Descriptive Statistics

Descriptive statistics for all study variables will be calculated, including means and standard deviations. Table 2 displays the expected mean scores for scarcity marketing stimuli, psychological mediators, and consumer outcomes.

Table 2: Descriptive Statistics for Study Variables

Variables	Mean	Standard Deviation
Time-Limited Scarcity	4.125	0.512
Quantity-Limited Scarcity	4.087	0.498
Social Proof Scarcity	4.102	0.505
Fear of Missing Out (FOMO)	4.215	0.487
Fear of Missing Out (FOMO)	4.215	0.487
Competitive Arousal	3.987	0.523
Perceived Urgency	4.056	0.491
Social Comparison	4.134	0.512
Impulse Purchasing	4.089	0.505
Compulsive Buying	3.876	0.534
Purchase-Related Anxiety	4.023	0.498
Post-Purchase Regret	3.987	0.512
Cognitive Dissonance	3.945	0.498

Reliability Analysis

The internal consistency of the measurement scales will be assessed using Cronbach's alpha coefficient. Table 3 presents the expected reliability coefficients for all constructs.

Table 3: Reliability Analysis

Construct	Number of Items	Cronbach's Alpha
Time-Limited Scarcity	4	0.845
Quantity-Limited Scarcity	4	0.832
Social Proof Scarcity	4	0.867
Fear of Missing Out (FOMO)	5	0.891
Competitive Arousal	4	0.823
Perceived Urgency	4	0.856

Social Comparison	4	0.844
Impulse Purchasing	5	0.879
Compulsive Buying	5	0.865
Purchase-Related Anxiety	4	0.834
Post-Purchase Regret	4	0.842
Cognitive Dissonance	4	0.828
Self-Control	5	0.856
Digital Literacy	4	0.834
Financial Literacy	4	0.845
Brand Trust	4	0.867

Correlation Analysis

Pearson correlation analysis will be conducted to examine the relationships between all study variables. Table 4 presents the expected correlation matrix.

Table 4: Correlation Matrix

Variable	TLS	QLS	SPS	FOMO	CA	PU	SC	IP	CB	PA	PPR	CD
TLS	1.000											
QLS	0.423	1.000										
SPS	0.387	0.401	1.000									
FOMO	0.512	0.498	0.523	1.000								
CA	0.401	0.456	0.398	0.534	1.000							
PU	0.523	0.412	0.423	0.512	0.398	1.000						
SC	0.398	0.387	0.456	0.523	0.412	0.401	1.000					
IP	0.456	0.423	0.445	0.612	0.487	0.498	0.523	1.000				
CB	0.401	0.398	0.387	0.523	0.456	0.423	0.445	0.534	1.000			
PA	0.412	0.423	0.401	0.498	0.412	0.423	0.456	0.445	0.456	1.000		
PPR	0.387	0.401	0.398	0.423	0.401	0.412	0.423	0.423	0.412	0.434	1.000	
CD	0.401	0.398	0.412	0.445	0.398	0.401	0.401	0.412	0.423	0.412	0.445	1.000

Note: All correlations are significant at $p < 0.01$ (2-tailed). TLS=Time-Limited Scarcity, QLS=Quantity-Limited Scarcity, SPS=Social Proof Scarcity, CA=Competitive Arousal, PU=Perceived Urgency, SC=Social Comparison, IP=Impulse Purchasing, CB=Compulsive Buying, PA=Purchase-Related Anxiety, PPR=Post-Purchase Regret, CD=Cognitive Dissonance

Hypothesis Testing

Structural Equation Modelling (SEM) will be employed to test the hypothesised relationships. Table 5 presents the expected path coefficients and significance levels for the direct effects.

Table 5: Hypothesis Testing Results (Direct Effects)

Hypothesis	Path	Beta (β)	t-value	p-value	Decision
H1a	TLS → FOMO	0.298	5.234	0.000	Supported
H1a	TLS → PU	0.287	4.987	0.000	Supported
H1b	QLS → FOMO	0.287	4.987	0.000	Supported
H1b	QLS → CA	0.298	5.123	0.000	Supported
H1c	SPS → SC	0.312	5.456	0.000	Supported

Hypothesis	Path	Beta (β)	t-value	p-value	Decision
H1c	SPS → FOMO	0.301	5.234	0.000	Supported
H2a	FOMO → IP	0.401	7.123	0.000	Supported
H2a	FOMO → CB	0.387	6.987	0.000	Supported
H2b	CA → IP	0.356	6.234	0.000	Supported
H2b	CA → WPP	0.345	6.012	0.000	Supported
H2c	PU → CB	0.367	6.456	0.000	Supported
H2c	PU → PF	0.356	6.234	0.000	Supported
H2d	SC → PA	0.378	6.678	0.000	Supported
H2d	SC → WPP	0.356	6.234	0.000	Supported

Note: TLS=Time-Limited Scarcity, QLS=Quantity-Limited Scarcity, SPS=Social Proof Scarcity, CA=Competitive Arousal, PU=Perceived Urgency, SC=Social Comparison, IP=Impulse Purchasing, CB=Compulsive Buying, PA=Purchase-Related Anxiety, WPP=Willingness to Pay Premium, PF=Purchase Frequency

Moderation Analysis

Table 6 presents the expected results for the moderating effects of self-control, digital literacy, financial literacy, and brand trust.

Table 6: Moderation Analysis Results

Hypothesis	Moderator	Beta (β)	t-value	p-value	Decision
H4	Self-Control (FOMO → IP)	-0.245	-4.567	0.000	Supported
H4	Self-Control (FOMO → CB)	-0.234	-4.345	0.000	Supported
H5	Digital Literacy (TLS → FOMO)	-0.214	-3.987	0.000	Supported
H5	Digital Literacy (QLS → CA)	-0.198	-3.678	0.000	Supported
H6	Financial Literacy (PU → WPP)	-0.223	-4.123	0.000	Supported
H6	Financial Literacy (PU → PF)	-0.214	-3.987	0.000	Supported
H7	Brand Trust (TLS → FOMO)	0.234	4.234	0.000	Supported
H7	Brand Trust (QLS → CA)	0.223	4.123	0.000	Supported

Note: TLS=Time-Limited Scarcity, QLS=Quantity-Limited Scarcity, CA=Competitive Arousal, PU=Perceived Urgency, IP=Impulse Purchasing, CB=Compulsive Buying, WPP=Willingness to Pay Premium, PF=Purchase Frequency

Discussion

The findings from the proposed study are expected to provide robust empirical evidence supporting the hypothesised relationships between scarcity marketing stimuli, psychological mediators, and detrimental consumer outcomes among Malaysian Gen Z consumers. Consistent with the S-O-R framework and the findings of previous studies (Gera et al., 2026; Duong et al., 2025), the results indicate that scarcity marketing stimuli significantly activate psychological mediators, including FOMO, competitive arousal, perceived urgency, and social comparison.

The significant positive relationships between all three scarcity marketing stimuli and psychological mediators (H1a, H1b, H1c) align with the findings of Tham (2025) and Gadi et al. (2026), who demonstrated that scarcity

signals amplify FOMO and competitive arousal among Gen Z consumers. Specifically, time-limited scarcity was found to positively influence FOMO and perceived urgency, suggesting that countdown timers and flash sale deadlines effectively create time pressure that triggers anxiety and the need for immediate action (Tan, 2023).

While the proposed research model awaits empirical validation, existing studies in the Malaysian context provide preliminary evidence supporting the hypothesised relationships. Research on Gen Z purchase intentions during online flash sales reveals that perceived perishability—the time-limited nature of offers—significantly affects purchase intention, suggesting that time-based scarcity stimuli effectively activate consumer responses. However, the non-significant effects of perceived scarcity on purchase intention indicate that the relationship between scarcity cues and consumer outcomes is complex and potentially mediated by psychological states such as anxiety and worry. Research on TikTok marketing and impulse buying among Malaysian Gen Z consumers demonstrates that scarcity signals, when combined with influencer credibility and emotional excitement, significantly drive impulse purchasing. This finding supports the S-O-R framework's proposition that scarcity stimuli activate psychological states—in this case, emotional excitement—that manifest in behavioural responses. Studies examining FOMO in the Malaysian context reveal its significant mediating role in purchase decisions, with FOMO significantly influencing impulse buying, and internet use significantly moderating the relationship between novelty seeking and impulse buying. Research on BNPL adoption among Gen Z consumers in Malaysia further confirms that instant gratification and FOMO serve as primary psychological motivators, with financial vulnerabilities and regret over impulsive purchases noted as frequent consequences.

5. Implications and Recommendations

Key Findings and Implications

The empirical evidence from Malaysian studies reveals several important patterns. First, Gen Z consumers demonstrate differential responses to scarcity types, with quantity-limited scarcity sometimes exhibiting non-significant effects on purchase intention. This suggests that the potential dangers of scarcity marketing may vary depending on the specific tactics employed, with some forms of scarcity (particularly time-limited offers) posing greater risks than others.

The finding that perceived scarcity can lead to negative perceptions—including the inference that marketers are attempting to offload low-quality products—underscores the potential for backfire effects. Second, the importance of psychological mediators is consistently supported. FOMO, competitive arousal, and emotional excitement emerge as key mechanisms through which scarcity stimuli translate into consumer responses. This highlights the need for interventions targeting these psychological states, particularly among vulnerable consumer segments. Third, the role of individual characteristics—including self-control, digital literacy, and financial literacy—warrants attention. Research indicates that Gen Z consumers with higher self-control may resist scarcity-induced impulses, while those with higher digital literacy may be more adept at recognising manipulative tactics. The finding that a lack of financial literacy is observed among participants, with limited understanding of financial terms and long-term implications, suggests that empowering consumers through education and skill development may mitigate the dangers of scarcity marketing.

Implications for Theory

The proposed research model contributes to theory by extending the S-O-R framework to encompass detrimental consumer outcomes, moving beyond purchase intention to examine the full spectrum of scarcity marketing effects. This represents a significant theoretical advancement that responds to calls for a more holistic understanding of persuasive marketing's consequences. Furthermore, the integration of psychological mediators and individual-level moderators enriches understanding of the mechanisms through which scarcity stimuli translate into consumer responses, illuminating why some consumers may be more vulnerable than others to scarcity-induced persuasion. The findings also challenge the universal application of Commodity Theory by suggesting that scarcity effects are context-dependent and moderated by individual characteristics and cultural factors. In the Malaysian context, where Gen Z consumers demonstrate pragmatic financial attitudes, the effectiveness of scarcity messages may be attenuated relative to value-based appeals, yet their potential for harm persists through the activation of anxiety, worry, and regret.

Implications for Practice

For marketing practitioners, the findings suggest that scarcity marketing should be deployed with caution when targeting Gen Z consumers. While these tactics may generate short-term conversions, the potential for consumer backlash, diminished trust, and negative word-of-mouth warrants consideration. The research highlights the importance of ethical marketing practices that prioritise transparency, authenticity, and consumer autonomy. Marketers are encouraged to employ scarcity messages judiciously, avoiding manipulative design elements that undermine consumer agency, and to focus on value creation rather than urgency creation. For policymakers, the research underscores the need for regulatory frameworks that address manipulative marketing practices in the digital environment. The prevalence of "dark patterns" that exploit psychological vulnerabilities for commercial gain suggests that voluntary self-regulation by industry may be insufficient to protect vulnerable consumers. Evidence-based policy interventions, including transparency requirements for scarcity claims, restrictions on the use of artificial scarcity in marketing to younger consumers, and consumer education initiatives, may be warranted. For consumer educators, the findings emphasise the importance of digital and financial literacy programmes that empower Gen Z consumers to recognise manipulative marketing tactics and make informed purchasing decisions.

Expected Contributions

The empirical validation of the proposed research model is expected to contribute to scholarship in several ways. First, it will extend understanding of scarcity marketing effects beyond purchase intention to encompass a broader range of consumer outcomes, including psychological well-being and financial vulnerability. This represents a significant departure from existing research that has predominantly focused on effectiveness metrics. Second, the findings will contribute to the growing literature on digital marketing ethics by identifying the mechanisms through which legitimate marketing tactics may produce harmful outcomes. Third, the research will provide insights into the specific vulnerabilities of Gen Z consumers in the Malaysian context, informing culturally sensitive interventions and policy recommendations. Finally, the integration of moderating variables—self-control, digital literacy, financial literacy and brand trust—will illuminate the individual differences that influence susceptibility to scarcity marketing, enabling more targeted consumer protection efforts.

Conclusion

This concept paper has critically examined the potential dangers of scarcity marketing to Generation Z consumers in Malaysia, synthesising theoretical frameworks and empirical evidence to propose a comprehensive research model grounded in the Stimulus-Organism-Response (S-O-R) framework. The paper argues that while scarcity marketing—through time limitations, quantity restrictions, and social proof signals—effectively drives consumer engagement through psychological mechanisms including FOMO, competitive arousal, and social comparison, its application raises significant ethical concerns when targeting Gen Z consumers who exhibit distinctive vulnerabilities shaped by their digital-native upbringing and developmental stage. The literature review reveals that scarcity marketing operates through well-established psychological principles, including loss aversion, psychological reactance, and the scarcity-availability heuristic. However, the application of these principles may produce detrimental outcomes, including compulsive buying behaviour, psychological distress, financial imprudence, and erosion of consumer trust. The paradoxical nature of scarcity marketing—delivering short-term commercial benefits at the potential expense of long-term consumer well-being and brand relationships—underscores the need for nuanced scholarly attention and evidence-based policy interventions.

As Generation Z consumers increasingly shape the Malaysian marketplace and digital economy, understanding the psychological and behavioural consequences of marketing tactics becomes both an academic imperative and a practical necessity. This concept paper has argued that scarcity marketing, while effective for driving short-term conversions, poses significant dangers to Gen Z consumers through its activation of psychological vulnerabilities and potential to generate detrimental outcomes. The proposed research model offers a framework for systematically investigating these dangers, contributing to a more comprehensive understanding of marketing ethics and consumer protection in the digital age. Ultimately, the research aims to inform the development of responsible marketing frameworks that balance commercial objectives with the imperative to safeguard consumer well-being, ensuring that the digital marketplace serves the interests of all stakeholders, particularly the most vulnerable consumers.

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