



Consumer Psychological Factors and Impulse Buying: The Moderating Role of Mindfulness among Generation Z QRIS Users

Indah Riyani*, Wenny Pebrianti, Nurul Komari, Bintoro Bagus Purmono, Harry Setiawan

Universitas Tanjungpura, Indonesia

Email : indhrynn@gmail.com

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ABSTRACT

Keywords:

Spendception;
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*Corresponding Author

The rapid adoption of QRIS-based digital payment systems has transformed Generation Z's consumption patterns, particularly by increasing their tendency toward impulse buying. This study aims to examine the effects of spendception, cashless effect, and hedonic motivation on impulse buying, as well as the moderating role of mindfulness. This quantitative study involved 250 Generation Z respondents in Indonesia who had engaged in impulse buying using QRIS within the past six months. The data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS–SEM) with SmartPLS 4. The results indicate that spendception, cashless effect, and hedonic motivation have positive and significant effects on impulse buying. Mindfulness weakens the influence of the cashless effect arising from transaction convenience and hedonic motivation driven by emotional pleasure. Conversely, mindfulness strengthens the effect of spendception on impulse buying, as a reduced perception of monetary loss makes transactional awareness insufficient to restrain purchasing impulses. These findings suggest that psychological processes in digital transactions are heterogeneous, depending on consumers' cognitive and affective dynamics, and offer practical implications for consumers in managing impulsive purchasing tendencies in the era of digital payments..

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INTRODUCTION

The rapid advancement of digital technology has fundamentally transformed payment systems, shifting consumer transactions from cash-based mechanisms to more practical and efficient cashless alternatives. Among these innovations, Quick Response (QR) code-based payment systems have gained

significant attention due to their ability to facilitate fast, seamless, and contactless transactions through smartphones, thereby reshaping everyday consumption practices (Cuenca-Enrique et al., 2025; Milosavljević et al., 2023; Thanigan et al., 2025). In Indonesia, Bank Indonesia introduced the Quick Response Code Indonesian Standard (QRIS) as a unified national digital payment standard integrating multiple payment service providers and enabling widespread adoption across business sectors (Bachri et al., 2025). National data indicate a substantial increase in QRIS transaction volumes, rising from 1.192 billion transactions in the second quarter of 2025 to 1.469 billion transactions in the third quarter of the same year. Generation Z represents the largest group of QRIS users, accounting for 27.94% or approximately 75.49 million users (ANTARA, 2025; Asosiasi Sistem Pembayaran Indonesia, 2025). This trend underscores the growing societal relevance of digital payment systems and their broader implications for consumer behavior.

Despite the efficiency and convenience offered by QRIS and other cashless payment systems, their widespread adoption has introduced emerging challenges related to consumer financial behavior. The reduced physical and psychological engagement associated with non-cash payments may weaken consumers' awareness of actual spending, potentially leading to excessive consumption and diminished financial control (Fania & Paramita, 2025; Kartawinata & Akbar, 2025). This issue is particularly salient among Generation Z, a cohort characterized by high digital literacy, frequent mobile payment usage, and strong responsiveness to promotional stimuli. The absence of tangible monetary cues in digital transactions alters spending perceptions, allowing consumers to make rapid financial decisions with limited deliberation. Consequently, cashless payment systems may unintentionally foster consumption patterns driven more by convenience and emotional gratification than rational evaluation. This condition signals a broader societal concern, as unchecked impulsive consumption may contribute to long-term financial vulnerability, reduced savings behavior, and weakened budgeting discipline among young consumers. Therefore, understanding how digital payment environments shape consumer psychology is essential for promoting more sustainable financial behavior in contemporary society.

Empirical observations reveal that the increasing intensity of QRIS usage in daily transactions coincides with a rise in impulse buying behavior among young consumers. Impulse buying refers to spontaneous, unplanned purchases triggered by situational cues and momentary emotions rather than deliberate evaluation (Agárdi & Alt, 2022). In digital payment contexts, the ease of transaction completion, combined with promotional incentives such as cashback, discounts, and limited-time offers, intensifies consumers' emotional arousal and

reduces cognitive resistance to spending. Generation Z, as active QRIS users, frequently encounters such stimuli in both online and offline retail environments. The frictionless nature of QRIS payments enables consumers to complete purchases almost instantaneously, minimizing the time available for reflective consideration. As a result, purchasing decisions are increasingly driven by affective responses rather than financial rationality. When these impulsive tendencies are not adequately managed, they may lead to habitual overspending and weakened expenditure control. This phenomenon highlights the need to examine the psychological mechanisms underlying impulse buying within QRIS-based transactions.

Prior studies emphasize the critical role of consumer psychological factors in explaining impulse buying behavior within digital payment environments. Spendception refers to consumers' subjective perceptions of spending shaped by digital payment methods, where the absence of physical money reduces the perceived sense of financial sacrifice. This weakened perception lowers spending awareness, diminishes perceived control, and increases emotional detachment during transactions, thereby encouraging spontaneous purchasing behavior. Spendception is reflected through the psychological visibility of spending, perceived spending control, and the ease of digital payment. Recent empirical evidence confirms that lower spending perception significantly increases impulse buying tendencies, as consumers are less sensitive to the actual financial consequences of their purchases (Faraz & Anjum, 2025). In a similar vein, the cashless effect explains the tendency for consumers to spend more when using non-cash payment systems due to reduced cognitive and emotional barriers during transactions. Studies consistently show that the convenience and speed of digital payments accelerate decision-making processes and intensify impulse buying behavior, particularly in digitally mediated consumption contexts (Chaudhary et al., 2025; García-Merino et al., 2025; Kartawinata & Akbar, 2025; Doan et al., 2024).

In addition to cognitive mechanisms, affective drivers such as hedonic motivation play a significant role in shaping impulse buying behavior in digital payment contexts. Hedonic motivation reflects consumers' pursuit of pleasure, emotional enjoyment, and experiential value during the consumption process, which tends to weaken rational evaluation and accelerate purchase decisions. Digitally enriched environments, characterized by seamless payment systems and engaging shopping experiences, intensify emotional stimulation and encourage spontaneous purchasing behavior (Farooq & Moon, 2025; Mashilo et al., 2025; Soomro & Habeeb, 2025; Utama et al., 2025). While these affective drivers amplify impulsive tendencies, self-regulatory mechanisms may mitigate such effects. Mindfulness refers to an individual's capacity to maintain present-

moment awareness and regulate emotional responses during decision-making. Recent studies indicate that higher levels of mindfulness enable consumers to recognize emotional triggers, evaluate purchase intentions more deliberately, and reduce automatic consumption responses, thereby weakening impulse buying behavior (Asawachaisopon & Mangmeechai, 2024; Iniesta-Bonillo et al., 2025; Mittal & Rani, 2024; O’Leary et al., 2025; Doan et al., 2024). However, empirical research that integrates hedonic motivation and mindfulness within a single analytical framework remains limited, highlighting the need for further investigation.

Although existing studies have provided valuable insights, several limitations remain evident in the current literature. Most prior research examines spendception, cashless effect, hedonic motivation, and self-regulatory constructs independently, resulting in fragmented explanations of impulse buying behavior. Moreover, research on QR-based payment systems has predominantly focused on technology adoption and usage intentions, rather than their behavioral and psychological consequences. The integration of multiple psychological drivers with a moderating self-regulation mechanism within a single model remains limited. Additionally, the majority of self-control studies emphasize traditional constructs such as financial self-discipline, overlooking mindfulness as a dynamic cognitive–affective regulator in digital consumption contexts. These gaps restrict a comprehensive understanding of how digital payment environments simultaneously shape cognitive perceptions, emotional motivations, and regulatory processes influencing impulse buying behavior.

Addressing these gaps, the present study investigates the effects of spendception, cashless effect, and hedonic motivation on impulse buying within QRIS usage, while examining mindfulness as a moderating variable. The study argues that digital payment systems influence impulse buying through distinct psychological pathways, and that mindfulness may function differently across cognitive and affective mechanisms. By integrating these constructs into a unified empirical model, this research contributes to a more nuanced understanding of consumer behavior in digital payment environments. The findings are expected to enrich consumer behavior theory by clarifying the conditional role of mindfulness and to provide practical implications for consumers in managing impulsive spending in increasingly cashless societies.

RESEARCH METHODS

This study employed a quantitative approach with a survey design and was classified as causal associative research aimed at examining cause–effect relationships among the research variables. The unit of analysis consisted of individual consumers, specifically Generation Z users of QRIS in Indonesia, as

this group represents active digital payment users and demonstrates a higher tendency toward impulse buying behavior. The research context focused on digital payment transactions conducted using QRIS in daily consumption activities. The population comprised Indonesian consumers who are aware of and use QRIS, while the sample was restricted to respondents aged 18–27 years, domiciled in Indonesia, and having engaged in impulse buying using QRIS within the past six months. A non-probability sampling technique with a purposive sampling method was applied to ensure that respondents met the predefined criteria relevant to the research objectives.

Primary and secondary data sources were utilized in this study. Primary data were collected through an online questionnaire distributed via Google Forms and disseminated through social media platforms to eligible respondents. Secondary data were obtained through a desk review of relevant scientific journal articles and verified news reports from official sources to support theoretical development and contextual understanding. The questionnaire was constructed using a five-point Likert scale (1–5), with measurement items adapted from prior studies. Spendception was measured using 3 items based on Ariely and Prelec (2003) and Faraz and Anjum (2025); Cashless Effect was measured using 3 items adapted from Prelec and Simester (2001) and Schomburgk et al. (2024); Hedonic Motivation was measured using 6 items adapted from Arnold and Reynolds (2003); Impulse Buying was measured using 5 items based on Rook (1987); and Mindfulness was measured using 4 items adapted from Feldman et al. (2007).

Data analysis was conducted using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS 4, as this technique is suitable for examining complex relationships among latent variables and assessing measurement and structural models simultaneously. Descriptive and inferential statistical analyses were performed to evaluate the proposed research model. The sample size was determined using the Inverse Square Root Method with a 5% significance level and a minimum path coefficient of 0.20, resulting in a minimum required sample of 155 respondents; however, 250 respondents were included to enhance data representativeness and reliability. The analysis procedure involved assessing outer loadings >0.70 , average variance extracted (AVE) >0.50 , Cronbachs Alpha and Composite Reliability >0.70 , and coefficient of determination (R^2) values of 0.25 (weak), 0.50 (moderate), and 0.75 (strong). Hypothesis testing was conducted using bootstrapping with 5,000 resamples at a 95% confidence level, applying the criteria of t-statistics > 1.65 and p-values < 0.05 .

RESULTS AND DISCUSSION

Results

Table 1 Respondent Characteristics

Category	Item	F	%
Gender	Man	78	31.2
	Woman	172	68.8
Total		250	100.0
Age	18 – 21	152	60.8
	22 – 24	77	30.8
	25 – 27	21	8.4
Total		250	100.0
Domicile	Bali/NTB/NTT	3	1.2
	Java	122	48.8
	Kalimantan	79	31.6
	Papua/Maluku	1	0.4
	Sulawesi	20	8.0
	Sumatra	25	10.0
Total		250	100.0
Last education	High School/Vocational School/Equivalent	197	78.8
	Diploma (D1/D2/D3/D4)	9	3.6
	Bachelor degree)	43	17.2
	Postgraduate (S2/S3)	1	0.4
Total		250	100.0
Work	Private sector employee	27	10.8
	Students	214	85.6
	civil servant	2	0.8
	Self-employed	7	2.8
Total		250	100.0
QRIS Transaction Amount	< Rp. 50,000	54	21.6
	Rp. 50,000 – Rp. 100,000	125	50.0
	Rp101,000 – Rp250,000	46	18.4
	> Rp. 250,000	25	10.0
Total		250	100.0
Media	Marketplace (Shopee, Tokopedia, Lazada, etc.)	124	49.6
	Physical store	126	50.4
Total		250	100.0
Types of Impulse Buying	Small electronic items (portable fans, earphones, power banks, cellphone cases, etc.)	5	2.0
	Fashion (clothes, shoes, accessories)	75	30.0
	Digital entertainment (online games, streaming subscriptions, etc.)	10	4.0
	Live entertainment (concert tickets, cinema, events, festivals, etc.)	4	1.6
	Food/drinks (trendy coffee, viral snacks)	111	44.4
	Skincare/cosmetics	45	18.0
Total		250	100.0

Based on the survey results of 250 respondents shown in Table 1, the majority of respondents were female (68.8%). The most dominant age group was 18–21 years old (60.8%). In terms of domicile, the majority of respondents came from Java (48.8%). The education level was dominated by high school/vocational high school graduates (78.8%), while the largest employment status was students (85.6%). The most frequent QRIS transaction amounts were in the range of IDR 50,000–IDR 100,000 (50.0%). Transaction media showed a nearly balanced distribution, with physical stores slightly higher (50.4%). The most dominant type of impulse purchase was food and beverages (44.4%).

Table 2 Convergent Validity

Variables	Items	Loading Factor	AVE
Spendception	SP1 I noticed the balance was deducted after paying using QRIS, but the feeling of losing money was much weaker than paying with cash.	0.855	0.641
	SP2 Paying via QRIS makes me feel like I can manage my spending, but in reality, I often spend more than I planned.	0.780	
	SP3 Paying with QRIS feels very easy because you only need to scan the QR code, making me feel like spending is a simple and burden-free thing.	0.763	
Cashless Effect	CE1 Paying with QRIS makes it easier for me to spend large amounts of money.	0.836	0.656
	CE2 I am easily tempted to buy things I don't really need, supported by the availability of QRIS payments.	0.809	
	CE3 I'm willing to spend more money for products with better quality/features, and paying via QRIS makes that decision easier.	0.783	
Hedonic Motivation	HM1 I feel excited to make payments using QRIS in various places.	0.827	0.629
	HM2 Shopping using QRIS helps me feel more relaxed after a tiring day.	0.751	
	HM3 I feel happy when I buy things using QRIS for friends or family.	0.807	
	HM4 I was satisfied when I found an attractive promotion supported by the availability of QRIS payments.	0.796	
	HM5 I enjoy shopping with friends/family using QRIS as a payment method.	0.785	
	HM6 I buy products that are trending among my friends/environment through QRIS payments.	0.791	
Impulse Buying	IB1 I often make quick purchasing decisions without much consideration.	0.785	0.605
	IB2 I felt a pleasant emotional experience after	0.781	

	spontaneous shopping.		
	IB3	The attractive appearance of the product made me immediately want to buy it.	0.780
	IB4	I feel guilty buying something I don't really need.	0.770
	IB5	I tend to buy things because I follow the current trend.	0.771
Mindfulness	MF1	I focus on purchasing decisions without being easily influenced by promotions or product displays.	0.864
	MF2	I consider purchases based on current conditions and needs.	0.829
	MF3	I understand that certain emotions (e.g., happiness or stress) can influence my purchasing decisions.	0.887
	MF4	When I suddenly want to buy something, I calm myself down first before deciding to buy.	0.908

0.761

Based on Table 2, all research constructs have met the validity criteria according to the guidelines Hair et al. (2021), with *outer loading values* in the range of 0.751–0.908 (>0.70), and AVE values of 0.605–0.761 (>0.50) which indicate that convergent validity has been met.

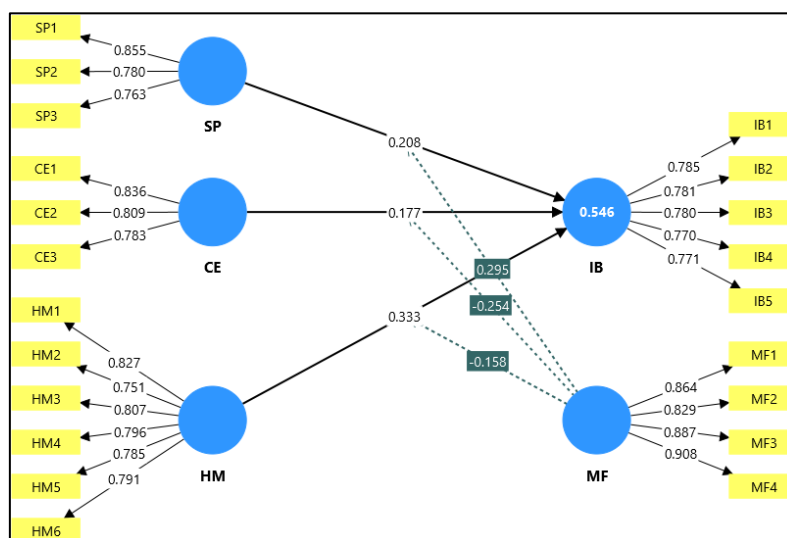


Figure 1PLS-SEM Algorithm

Table 3. Descriptive Statistics

	Mean	Standard Deviation	N
Spendception	4,176	0.6266	250
Cashless Effect	4,048	0.6846	250
Hedonic Motivation	4,086	0.6625	250
Impulse Buying	4,088	0.6568	250
Mindfulness	3,953	0.9185	250

Based on Table 3, the mean values of all research variables were categorized as high (≥ 3.95), indicating respondents' tendency to agree with the statements provided. Spendception recorded the highest mean value (4.176), followed by impulse buying (4.088), hedonic motivation (4.086), and cashless effect (4.048). Mindfulness showed a mean value of 3.953 with the highest standard deviation (0.9185), indicating greater variability in respondents' answers compared to the other variables.

Table 4. Discriminant Validity – Heterotrait – monotrait – ratio (HTMT)

	SP	CE	HM	IB	MF	MF×SP	MF×CE	MF×HM
SP								
CE	0.844							
HM	0.800	0.850						
IB	0.744	0.695	0.725					
MF	0.356	0.083	0.232	0.221				
MF×SP	0.189	0.199	0.246	0.192	0.100			
MF×CE	0.182	0.120	0.189	0.332	0.141	0.672		
MF×HM	0.229	0.195	0.204	0.337	0.030	0.735	0.758	

Based on Table 4, the results of the HTMT test show that all values between constructs are below the threshold of 0.90, with the highest value being 0.850 and the lowest value being 0.030, so that the construct's discriminant validity is declared fulfilled.

Table 5. Composite Reliability

Variable	Cronbach's Alpha	CR
Spendception	0.723	0.842
Cashless Effect	0.738	0.851
Hedonic Motivation	0.882	0.910
Impulse Buying	0.837	0.884
Mindfulness	0.899	0.927

Based on Table 5, all research constructs have met the reliability criteria according to the guidelines Hair et al. (2021), with *Cronbach's Alpha* of 0.723–0.899 (>0.70) and *Composite Reliability* (CR) of 0.842–0.927 (>0.70) which indicates that good construct reliability has been met.

Table 6 R Square

	R-square	R-square adjusted
Impulse Buying	0.546	0.533

The R-square value of 0.546 indicates that 54.6% of the variance in impulse buying behavior can be explained by spendception, cashless effect, hedonic motivation, and the moderating interaction of mindfulness within the research model. The adjusted R-square value of 0.533 demonstrates stable explanatory power at a moderate level.

Table 7 Hypothesis Testing

No	Path	T Value	S.E (STDEV)	Sample Mean (M)	O Sample (O)	P Value	Result	Hypothesis Decision
1	<i>SP</i> → <i>IB</i>	2,615	0.080	0.198	0.208	0.004	Significant	Accepted
2	<i>CE</i> → <i>IB</i>	2,611	0.068	0.175	0.177	0.005	Significant	Accepted
3	<i>HM</i> → <i>IB</i>	4,198	0.079	0.341	0.333	0.000	Significant	Accepted
4	<i>MF</i> × <i>SP</i> → <i>IB</i>	4,263	0.069	0.282	0.295	0.000	Significant	Rejected (positive, opposite direction)
5	<i>MF</i> × <i>CE</i> → <i>IB</i>	3,826	0.066	-0.253	-0.254	0.000	Significant	Accepted
6	<i>MF</i> × <i>HM</i> → <i>IB</i>	2,180	0.072	-0.155	-0.158	0.015	Significant	Accepted

The hypothesis testing results indicate that all examined paths were statistically significant (p-value < 0.05 and t-value > 1.65). The direct effects of spendception, cashless effect, and hedonic motivation on impulse buying were positive and significant, leading to the acceptance of H1, H2, and H3. For the moderating paths, the interaction between mindfulness and spendception was statistically significant but showed a positive coefficient opposite to the hypothesized direction; therefore, H4 was rejected. In contrast, mindfulness negatively moderated the effects of cashless effect and hedonic motivation on impulse buying, leading to the acceptance of H5 and H6.

Discussion

The findings indicate that spendception has a positive and significant effect on impulse buying. This result suggests that changes in spending perceptions driven by digital payment usage encourage impulsive purchasing behavior. When payments are made without physical cash involvement, the perceived pain of paying becomes weaker than in cash transactions, even though the actual expenditure remains real (Lamichhane, 2025). This condition reduces consumers' awareness of the amount spent, weakens self-control during transactions, and increases the likelihood of spontaneous purchases, consistent with the findings of Faraz and Anjum (2025).

The cashless effect was also found to significantly increase impulse buying. The convenience and speed of QRIS-based transactions reduce psychological barriers in decision-making, leading consumers to pay less attention to the financial consequences of their purchases. This finding supports the results of Doan et al. (2024), who argue that non-cash payment methods accelerate purchase decisions and increase impulsive spending. Moreover, hedonic motivation exhibited the strongest influence on impulse buying. Enjoyable shopping experiences, emotional stimulation, and affective gratification obtained during transactions motivate consumers to make spontaneous purchases, in line with the findings of Juanim et al. (2024).

Regarding the moderated relationships, mindfulness plays a contextual role. The interaction between mindfulness and spendception produced a significant positive effect that contradicts the initial hypothesis. This finding indicates that mindfulness does not always suppress impulsive behavior when purchasing decisions are driven by cognitive perceptions of spending. In the context of fast and practical QRIS transactions, mindful consumers may focus more on the smoothness of the payment process rather than on the amount of money spent. The perception that expenditures remain within acceptable limits, particularly for small to medium transaction values, renders mindfulness insufficient to restrain purchasing impulses, although this result diverges from some prior studies (Dhandra, 2020; Nawaz et al., 2021).

Conversely, mindfulness was shown to effectively weaken the effects of the cashless effect and hedonic motivation on impulse buying. Consumers with higher levels of mindfulness are better able to direct attention, recognize emotional urges, and evaluate purchasing decisions before acting, thereby exerting greater control over impulsive behavior triggered by the convenience of digital payments and emotional pleasure (Doan et al., 2024; Asawachaisopon & Mangmeechai, 2024; Iniesta-Bonillo et al., 2025; Mittal & Rani, 2024; O'Leary et al., 2025; Yiğit, 2020). Thus, mindfulness functions as an effective self-regulation mechanism for affective and situational impulses but is less effective when impulse buying is driven by cognitive spending perceptions.

CONCLUSION

This study provides important insights into impulse buying behavior in digital payment contexts by demonstrating that spendception, cashless effect, and hedonic motivation exert positive and significant influences on impulse buying, while mindfulness plays a nuanced and contextual moderating role. The key lesson derived from these findings is that impulse buying is not driven by a single psychological mechanism, but rather emerges from the interaction of cognitive perceptions of spending and affective motivations. Mindfulness does not function as a universal inhibitor of impulsive behavior; instead, it weakens impulse buying when driven by emotional pleasure and transactional convenience, yet strengthens the effect of spendception when spending is perceived as cognitively manageable. This highlights the complexity of self-regulation in fast, frictionless digital payment environments and underscores the importance of understanding consumer awareness beyond simplistic assumptions of rational control.

From a theoretical perspective, this study contributes to the consumer behavior and digital payment literature by integrating spendception, cashless effect, and hedonic motivation within a single causal framework and positioning mindfulness as a contingent moderator rather than a uniformly protective factor. Practically, the findings suggest that consumers need to cultivate deeper evaluative awareness when using digital payments, particularly in assessing real financial consequences, while digital payment service providers should balance transaction convenience with transparent information, system security, and responsible design features. Despite these contributions, the study is limited by a sample dominated by Generation Z students with relatively low and unstable income, which constrains the analysis to small- and medium-value transactions. Future research is therefore encouraged to examine working Generation Z consumers with higher purchasing power, especially in high-involvement and high-value consumption contexts, to further explore the dynamic role of mindfulness in more complex financial decision-making situations.

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