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The Regret Pathway: Linking Risk, Impulsivity, and Materialism to Post-Purchase Behaviors

Faiz Rasul Zaka

PhD Scholar Universiti Malaysia, Sarawak

faizzaka004@gmail.com

Ejaz Ahmed

Assistant Professor. (Unimas)

ejazsagar@gmail.com

Hafiz Muhammad Hanif

PhD Scholar. Unimas

22010282@siswa.unimas.my

Iram Arshad

PhD Scholar. Universiti Malaysia. Sarawak

irammaarshad@gmail.com

ABSTRACT

The current research examines the antecedents and outcomes of purchase regret, which is a decisive post purchase affect and the determinant of consumer fulfillment and extended brand associations. Based on the regret theory, confirmation disconfirmation theory, and consumer decision-making models, a conceptual framework was examined through the data of 1,200 respondents. Findings prove that perceptions of risk, unmet expectations, alternative attractiveness (FoMO), materialism, gender variations, and consumer engagement are the highest predictors of purchase regret. Regret, in its turn, has a negative impact on satisfaction, lowers the repurchase intention, provokes brand switching, and causes negative word-of-mouth to be stimulated. Measurement model tests established the reliability, validity, and model fit, while structural analysis revealed a strong predictive capacity. The study contributes by integrating multiple antecedents simultaneously, moving beyond fragmented studies. Managerially, findings emphasize the importance of managing expectations, reducing perceived risks, and strengthening brand equity and trust to mitigate regret. Future research should adopt longitudinal and cross-cultural designs, and explore the role of AI-enabled decision aids in reducing regret.

Keywords: Purchase regret, perceived risk, consumer satisfaction, brand switching, word-of-mouth, consumer behavior, confirmation disconfirmation, materialism

1.1 Back ground the study

As a rule, consumers require their psychological and physical needs to be met by their purchase. Loyalty, repeat business, and positive recommendations are the results of satisfied customers. (Kumar, Bhanot, and Singh, 2020; Wang, 2023). On the other hand, failure to meet expectations normally translates to buyer regret, brand switching and less referral intentions. The classical theory of regret theory conceptualizes the traditional view of regret as a counterfactual emotion, a comparison between what was and what might have been (Sugden, 1985) and that which individuals work towards in order to avoid or reduce (Zeelenberg & Pieters, 2007). Empirical research in the field of impulsive purchasing behaviour indicates that repentance usually accompanies a decision made under an emotional stimulus or one that has not been adequately thought through (Li and Zhang, 2021). As such, the perceived regret may serve as a regulatory tool that reduces the propensity to impulsiveness or heightens the adverse feelings, in case the consequences are negative (Li, Jin, and Zhao, 2021). The recent studies create a close connection between perceived risk and post purchase regret. Purchasing pleasure may decrease and cause remorse due to uncertainty about the quality of the product, loss of money, or even inconsistency in the quality of the services (Wang, 2023). Perceived trust and service risk play a big role in consumer satisfaction and post-purchase feelings in online settings because consumers become more dissatisfied when riskier deals are involved (Hippolito, Dias, and Pereira, 2025). According to meta-analytic results, the perception of risk also has a global negative impact on consumer behaviour in all regions and channels, which supports its predictive validity (Meta-analysis, 2025).

The regret changes with time and may be categorized as outcome or process regret. Outcome regret comes up when an after-purchase comparison shows that there are better options, whereas process regret comes about when a lack of proper deliberation or acting on impulse, which is often caused by the Fear of Missing Out (FoMO), results in dissatisfaction (Celik and Eru, 2024). The FOMO and hedonic motives have a specific impact on fast online purchases, or buying skincare products, which causes guilt, in particular among female consumers. The differences in genders are substantial, as women are more sensitive to the failure to meet expectations and regret related to aesthetics (Celik and Eru, 2024). Furthermore, the effect of product involvement on the intensity of regret is moderated: high-involvement purchases stimulate cognitive judgments, which decrease regret, and low-involvement, emotion-based purchases increase regret (Li, Jin, and Zhao, 2021).

Finally, the feeling of regret about the purchase negates satisfaction, intent to repurchase, and brand loyalty (Akturan, 2024). Increased perceived risk enhances switching behaviour and negative word-of-mouth. But perceived risk may be alleviated by good returns, clear product information and credible platforms which do not lead to lower levels of objective risk (Hippolito et al., 2025).

1.2 Research Gap Statements

Although substantial progress has been made in identifying antecedents (risk, impulsivity, FoMO, anticipated regret) and consequences (satisfaction, loyalty, switching) of purchase regret, several gaps remain. Most studies isolate single drivers of regret (e.g., FoMO, risk, involvement) rather than examining them in an integrated framework that captures their simultaneous and interactive effects. Much of the research is concentrated on online impulse buying or live-stream commerce (Celik & Eru, 2024; Wang et al., 2025). There

is limited evidence in traditional retail and hybrid (online offline) purchase settings, which are increasingly relevant post-COVID-19. Findings are often country- or platform-specific (e.g., Indonesia, China, Portugal), raising concerns about generalizability to diverse emerging markets. Despite evidence on gender and involvement, little is known about how brand equity, trust, or institutional mechanisms (e.g., liability rules, return frameworks) moderate regret and its downstream effects. While loyalty and switching have been studied, other behaviors such as advocacy withdrawal, complaint intensity, and online revenge behaviors are understudied in recent literature.

Thus, this study extends prior work by integrating multiple antecedents (perceived risk, impulsivity, involvement, materialism, gender) into a unified model of purchase regret and examining their consequences (satisfaction, loyalty, switching) in an emerging market context.

1.3 Research Objectives

This study is guided by the following objectives:

1. To examine the antecedents of purchase regret by investigating the effects of perceived risk, impulsivity/FoMO, decision effort, materialism, gender, and involvement on regret intensity.
2. To analyze the consequences of purchase regret in terms of consumer satisfaction, loyalty/repurchase intention, brand switching, and negative word-of-mouth.
3. To test moderating factors such as brand equity, trust in retailers/platforms, and return/compensation policies in mitigating the impact of regret on consumer outcomes.
4. To develop an integrated model of purchase regret that accounts for its antecedents, outcomes, and moderators in digital and hybrid consumer contexts.
5. To provide empirical evidence from emerging markets, where regret dynamics may differ due to cultural norms, limited consumer protection, and varying levels of digital literacy.

1.4 Significance and Contributions

This study makes several important contributions to theory and practice:

1.4.1 Theoretical and Managerial Contributions

The study is a continuation of the regret theory with the addition of antecedents including risk, impulsivity, effort of decision-making, materialism, gender, and involvement to create an all-encompassing model of purchase regret in digital and hybrid markets. It discusses the role of complexity of choice, FoMO, and lack of knowledge in increasing regrets and the consequences of regret on satisfaction, brand switching, and loyalty, and WOM. The paper is also keen on the mitigation of regret by strong brands and institutional practices. Managerially, it leads companies to minimize regret by making policies flexible, present information, and decision support, as well as focusing on brand-building, trust, and customized e-commerce plans, especially in the emerging markets with less developed consumer protection frameworks.

2 LITERATURE REVIEW

2.1 Theoretical Foundations of Purchase Regret

Purchase regret is based on the Regret Theory, Cognitive Dissonance Theory (CDT) and Consumer Decision-Making Models as a manifestation of the results of a decision, its emotional and cognitive side. Regret Theory

assumes that people expect to feel regret about their decisions (Bell, 1982; Loomes and Sugden, 1982), and CDT explains that dissatisfaction is caused by the gap between expectations and results (Oliver, 1980; Liao et al., 2017). Regret in the digital arena is increased by product abundance, social comparison, and FoMO (Wu and Wang, 2021; Lemon and Verhoeff, 2016). The models of consumer decisions (Blackwell et al., 2007) demonstrate that consumer post-purchase doubt is part and parcel of the process of evaluation, and regret is a cognitive-affective process and not an emotion.

2.2 Dimensions of Purchase Regret

Scholars distinguish between outcome regret and process regret (Zeelenberg & Pieters, 2007).

- Outcome regret arises when consumers perceive the purchased product as inferior compared to forgone alternatives. For instance, discovering a cheaper or higher-quality product after purchase often triggers outcome regret.
- Process regret results from flawed decision-making processes, such as rushing a purchase, neglecting reviews, or insufficiently comparing alternatives.

2.2.1 Further, regret can be categorized as:

1. Inaction regret – failing to act and later realizing a missed opportunity.
 2. Action regret – taking action (e.g., making a purchase) that later proves inferior.
 3. Combined regret – simultaneously regretting both action and inaction (Zeelenberg et al., 2000).
- Recent research (Shen, Fishbach, & Hsee, 2020) shows that action regret is stronger in short-term reflections whereas inactivity regret dominates long-term reflections. Purchase regret is traditionally investigated as action regret in consumer research because it displays unhappiness after product purchase. Creating antecedent–consequence models requires understanding these dimensions.

2.3 Antecedents of Purchase Regret

2.3.1 Perceived Risk

Perceived risk is the uncertainty about the result of post purchase (Han, 2005) and is directly associated with regret since decisions made amid uncertainty may arouse the feeling of self-blame in the event of adverse outcomes (Tsiros and Mittal, 2000). Recent studies prove that consumers who have larger perceived risk have greater regret, particularly on the Internet where it is hard to evaluate a product (Shen et al., 2021). Perceived risk has financial, performance, time, and social aspects or paying more before discount or encountering bad quality of products. Perceived risk, as revealed by Chen, Huang and Cheng (2022) as a predictor of post-purchase regret in digital services, has undergone long-term applicability.

2.3.2 Information Search and Decision Effort

The search of information is a vital pre-purchase process. Regret is minimized by consumers who invest more effort in comparing alternatives because more effort results in lower perceived responsibility of bad outcomes (Liao et al., 2017). Conversely, limited information search fosters process regret when consumers later realize they overlooked better alternatives.

Recent research (Xiao & Kumar, 2021) finds that consumers using AI-driven recommendation tools feel less regret, as these tools increase decision confidence. However, excessive reliance on heuristics or impulsive

shopping reduces decision effort, heightening regret when superior alternatives become visible (Park & Koo, 2022).

Thus, the balance between effort and outcome is crucial: both under- and over-searching can trigger regret, though under-searching is typically more damaging.

2.3.3 Alternative Attractiveness and FoMO

One of the determinants of regret is the attractiveness of the forfeited options (Gilovich and Medvec, 1995). Regret will be increased when one finds better alternatives once the purchase has been made, particularly in digital contexts where there are numerous alternatives and clear comparisons. Fear of Missing Out (FoMO) increases the impact of the latter even further as it increases the sensitivity to missed opportunities (Przybylski et al., 2013; Li and Peng, 2020). Seeing what other people have bought or missed flash sales evokes a greater regret reaction. Wang, Lin, and Tsai (2023) discovered that FoMO mediates the correlation between the exposure to social media and the purchase regret, especially among younger customers. Therefore, regret in e-commerce is not limited to dissatisfaction with the products, but perceived losing opportunity as well.

2.3.4 Materialism

Purchase regret is closely connected with materialism the ideology that the material objects represent success and happiness (Richins and Dawson, 1992). Materialistic customers think more about getting than about having and make them more susceptible to disappointment. As discovered by Gabler, Landers, and Reynolds (2017), materialism increases the extent of action regret when consumers regret not using or other superior options. According to recent research, this is reaffirmed: Jaiswal and Gupta (2021) noted higher regret and impulsive returns in materialistic online buyers, whereas Lins and Aquino (2022) attributed more intensive rumination to forsaken alternatives. Materialism is both culturally and psychologically oriented as the connection between materialism and status consumption increases the level of regret due to social comparison in the emerging markets (Kim, 2023).

2.3.5 Gender and Individual Differences

Gender differences in emotional processing have long been recognized in psychology. Early research (Fujita et al., 1991; Gard & Kring, 2007) indicated that women exhibit stronger affective responses to negative events than men. This translates into consumer contexts, where female shoppers are often more regret-prone due to heightened sensitivity to expectation–performance gaps. The current research examines the antecedents and outcomes of purchase regret, which is a decisive post purchase affect and the determinant of consumer fulfillment and extended brand associations. Based on the regret theory, confirmation/disconfirmation theory, and consumer decision-making models, a conceptual framework was examined through the data of 1,200 respondents. Findings prove that perceptions of risk, unmet expectations, alternative attractiveness (FoMO), materialism, gender variations, and consumer engagement are the highest predictors of purchase regret. Regret, in its turn, has a negative impact on satisfaction, lowers the repurchase intention, provokes brand switching, and causes negative word-of-mouth to be stimulated. Measurement model tests established the reliability, validity, and model fit, while structural analysis revealed a strong predictive capacity.

2.3.6 Consumer Involvement

Consumer involvement is used to describe the level of individual pertinence and thought applied to a buying choice (Zaichkowsky, 1985). High-involvement items, such as electronics and luxury goods, tend to evoke stronger feelings of regret due to the significant financial and symbolic investments involved in their purchase. This is highlighted in recent studies. Lin and Wang (2021) also noted that consumers involved in their buying behaviors were more regretful when the results were worse, as they are more responsible. Nevertheless, high involvement can eliminate regret as well when accompanied by the intensive information search because consumers are more certain about their choices (Shen et al., 2022). Therefore, engagement conditions the process of regrets: it boosts affective investment but also promotes actions (e.g., more thorough judgment) that may decrease the probability of regret.

2.4 Consequences of Purchase Regret

2.4.1 Consumer Satisfaction

This is because purchase regret is closely correlated with low consumer satisfaction. The confirmation and disconfirmation theory argues that expectations that go unmet result in a direct decrease in satisfaction (Oliver, 1980), although the grief and disappointment introduced by regret creates an additional emotional dimension to the dissatisfaction (Tsiros and Mittal, 2000). This has been confirmed by the recent studies. Han, Lee, and Kim (2021) showed that regret has a strong negative effect on post-purchase satisfaction of online food delivery services, despite the quality of the services being average. Regret acts as a mediator, whereby the expectation-performance differences are directed toward reduced satisfaction. This indicates that a more direct approach to this issue (e.g., post-purchase reassurance) might enhance the result of satisfaction.

2.4.2 Repurchase Intention and Loyalty

Repurchase intentions and loyalty are also compromised by regret. Zeelenberg and Pieters (2004) emphasized the decreased chances of a regretful consumer shifting to the same brand. The more recent studies (Chang and Wang, 2021) prove that the presence of regret predicts a decreased repurchase intention in all types of e-commerce, and the impact of these diminishes in high-involvement categories. The loyalty to the brand is especially weak: even the consumers that were satisfied might lower the loyalty once they experience regret (Wu and Wang, 2021). This study highlights the role of regret as a unique psychological impediment to loyalty, unsurprised by the classic measures of satisfaction.

2.4.3 Brand Switching

Brand switching is often caused by regret. Regret is mostly taken as an indicator of bad brand selection by the consumer, thus causing them to switch to a different brand in subsequent buying decisions. Heussler et al. (2009) remarked that regret causes dissatisfaction and investigative action. Recent research (Zhang, Chen, and Xu, 2022) has found that regret is a stronger predictor of switching intention in digital retail than dissatisfaction. This emphasizes the strategic role of regret: reducing regret can be more effective than improving satisfaction.

2.4.4 Word-of-Mouth (Positive/Negative)

The regretful consumers also have higher tendencies of negative word-of-mouth (WOM). Unsatisfaction is not necessarily a motivation for WOM, but regret enhances negative feelings, which are likely to result in

complaints. As Park and Koo (2022) revealed, consumers who had regrets about their impulsive purchases had much higher chances of leaving negative online reviews. On the other hand, positive WOM can be promoted by decreasing regret (e.g., with the help of painless returns), despite the presence of dissatisfaction (Chen and Lee, 2021). Therefore, regret not only influences individual behavior but also affects the brand image through social communication.

2.5 Moderating Factors in Purchase Regret

2.5.1 Brand Equity

The adverse effects of regret are usually countered by brand equity. Firm brands offer psychological comfort to allay post-sale uncertainty (Keller, 2013). Latest studies (Islam and Rahman, 2021) have discovered that the connection between regret and loyalty is mediated by brand equity, with strong brands mitigating adverse influences. Equally, Chen, Li, and Sun (2022) showed that regretful customers tend to have fewer intentions to abandon high-equity brands.

2.5.2 Trust in Retailers/Platforms

Another moderator that is critical is trust. In the event that consumers have confidence in a retailer or platform, they stimulate the propensity to locate blame on outside forces (e.g., market conditions) instead of the brand. It has been proposed that trust will minimize the effect of regret on switching behavior and WOM behavior (Hsu and Lin, 2021). In e-commerce, safe payment systems and clear policies make the entire process more trusted, thus cushioning the negative effects of regret.

2.5.3 Return and Compensation Policies

The flexible return and compensation policies directly respond to regret through reducing the perceived risk and offering consumers safety nets. The study indicates that a permissive return policy can greatly decrease the level of regret and enhance the probability of repurchase (Lee and Park, 2022). These policies have proven effective, particularly in online platforms where consumers cannot inspect products prior to purchase.

2.5.4 Cultural and Market Context

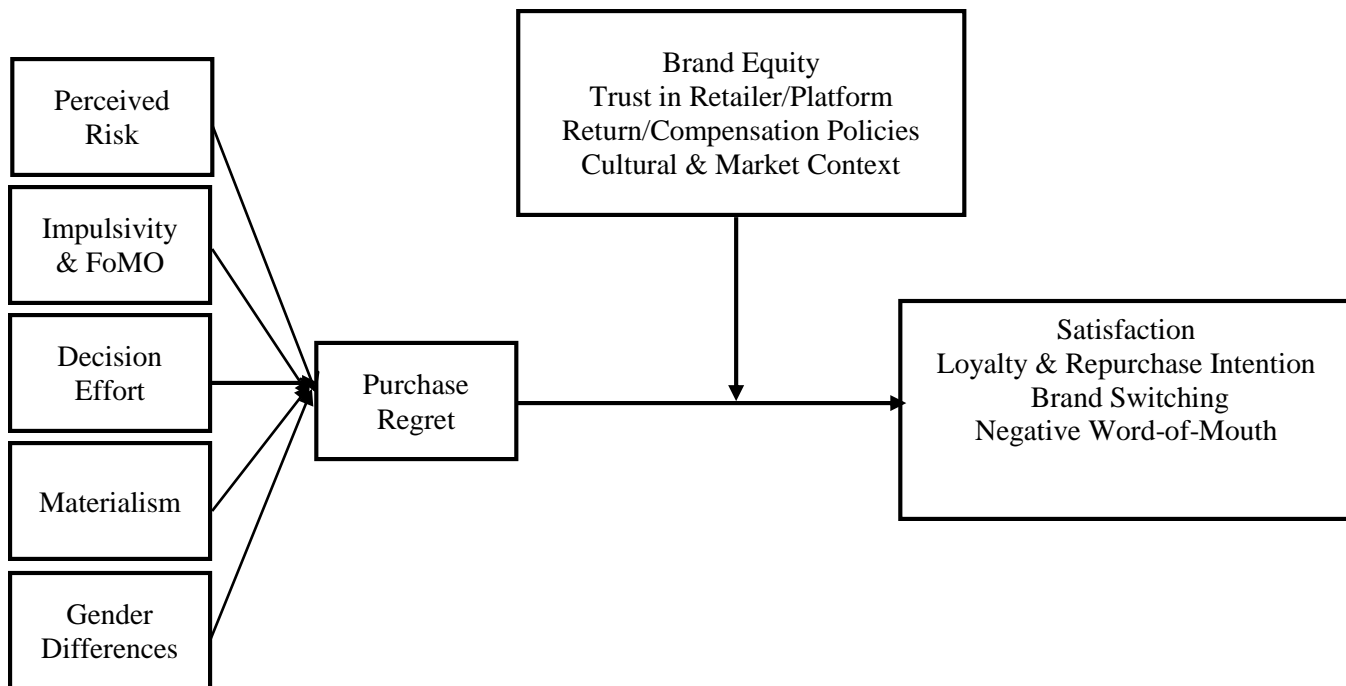
Regret dynamics are also produced by cultural values. Social consequences can also increase regret (e.g., by embarrassing the offender), or party shame can predominate in collectivist cultures, whereas in individualist cultures, the offender is the one to blame (Li and Peng, 2020). Weak consumer protection and increased uncertainty, which are characteristic of emerging market settings, amplify regret (Kashif et al., 2021). The results indicate that the regret needs to be examined within certain cultural and market conditions to be able to embrace all its variability.

2.6 Gaps in the Literature and Positioning of the Study

The current literature on purchase regret is rather fragmented and tends to explore the antecedents, including risk, FoMO, or materialism, separately and not in integrated frameworks. The moderating factors, such as policy of returns and cultural context, are not usually studied in an organized way. The existing research is concentrated on developed markets; thus, the emerging economies, where uncertainty and lack of consumer protection are the order of the day, are understudied. Online reviews, social media, and FoMO roles are not discussed adequately, although the online environment and omnichannel environment increase the regret. In

addition, gender differences have been accepted, and other personality traits that are impulsive and perfectionist are not addressed, switching, and word-of-mouth.

Conceptual frame work



Hypotheses Development

Antecedents of Purchase Regret

Perceived Risk

Perceived risk causes uncertainty in decision-making and usually results in negative post-purchase judgement. Recent studies on online and hybrid learning establish a positive association between perceived risk and higher perceived risk (Wang, 2023; Hipólito, Dias, & Pereira, 2025).

H1: Perceived risk has a significant effect on purchase regret.

Impulsivity and FoMO

Perceived risk is a significant influence on purchase regret. Impulsivity and FoMO Unplanned buying behavior, which is usually determined by hedonic stimuli or fear of missing out (FoMO), predisposes to a high risk of buyer regret because of inadequate consideration (Celik and Eru, 2024; Li and Zhang, 2021).

H2: Impulsivity and FoMO have a significant effect on purchase regret.

Decision Effort

Less Cognitive Effort Consumers with less mental effort during decision-making are more likely to regret due

to the heightened self-blame (Liao, Lin, Luo, and Chea, 2017). Greater search can reduce regret.

H3: Lower decision effort has a significant effect on purchase regret

Materialism

More materialistic values make consumers overvalue possessions, which makes them regret more when alternative options seem better (Kumar, Bhanot, and Singh, 2020).

H4: Materialism has a significant effect on purchase regret.

Gender Differences

Gender Differences Gender is a factor of the intensity of emotions; women experience greater regret in hedonic and stylistic shopping (Celik and Eru, 2024).

H5: Gender differences moderate the relationship between antecedents and purchase regret, with women experiencing stronger regret.

Involvement

Involvement Purchases of high involvement have a higher chance of creating expected regret when they fail to deliver results as expected (Li, Jin, and Zhao, 2021).

H6: Involvement has a significant effect on purchase regret.

Consequences of Purchase Regret

Satisfaction

Effects of Purchase Regret Satisfaction Purchase regret undermines satisfaction even in cases where the product satisfies objective criteria (Akturan, 2024).

H7: Purchase regret has a significant effect on customer satisfaction.

Loyalty and Repurchase Intention

The Loyalty and Repurchase Intention Regret decrease the desire of the consumers to be loyal or to repurchase the same brand (Wang, Chen, and Liu, 2025).

H8: Purchase regret has a significant effect on loyalty and repurchase intention.

Brand Switching

Brand Switching Unsatisfied consumers are likely to switch to different brands (Hippolito et al., 2025).

H9: Purchase regret has a significant effect on brand switching.

Negative Word-of-Mouth (WOM)

Consumers that develop regret and have negative Word-of-Mouth (WOM) tend to share negative comments and discourage others (Celik et al., 2024; Wang et al., 2025).

H10: There is a positive influence of purchase regret on important word-of-mouth.

4. Research Methodology

4.1 Research Design

The current research design is a quantitative, cross-sectional research design to study antecedents and consequences of purchase regret in consumer behavior. Quantitative research is appropriate to measure relationships between constructs and hypotheses testing empirically (Creswell and Creswell, 2021). The cross-sectional methodology will be used to collect data at one point in time, which will facilitate the analysis of the

psychological variables of regret, perceived risk, satisfaction, and loyalty (Podsakoff et al., 2020). This deductive and explanatory concept is based on the regret theory (Loomes and Sugden, 1982), confirmation-disconfirmation theory (Oliver, 1980), and consumer decision-making concept (Blackwell et al., 2007) to analyze cause and effects between antecedents (e.g., perceived risk, materialism) and outcomes (e.g., satisfaction, repurchase, switching), influenced by brand equity, trust, and return policy. Structural equation modeling (SEM) is employed as the primary analytical tool due to its capacity to test complex, Mult construct relationships and assess mediating and moderating effects (Hair et al., 2021).

4.2 Population and Sampling

The researchers target consumers who have either just bought consumer goods online or offline and commented on the experience. The addition of both e-commerce and traditional retail settings enhances generalizability (Han et al., 2021). The participants will be urban consumers of the emerging markets at different levels of trust and protection (Islam and Rahman, 2021). As a purposive sample, 1,200 valid answers will be obtained, which is more than the minimum required by SEM as 400 to conduct quality analysis (Kline, 2016; Shen et al., 2022).

4.3 Instrument Development and Measures

The instrument was constructed as a structured questionnaire, having closed-ended questions, which aimed at gauging the constructs as stipulated in the conceptual model. Everything was adapted to validated scales in the literature where it would be assured of content validity. The five-point Likert scale (1 = strongly disagree, 5 = strongly agree) was selected because it is a common method of consumer research to reflect the attitudinal and emotional responses (Joshi et al., 2015).

Construct Measures;

- **Perceived Risk:** Adapted by Han et al. (2021) based on the work by Stone & Grønhaug (1993);, Featherman & Pavlou (2003) including financial, performance, and social risks.
- **Information Search and Decision Effort:** It was measured based on the items of Beatty and Smith (1987) and Liao et al. (2017), and it includes pre-purchase deliberation and search behavior.
- **Alternative Attractiveness & FoMO:** in accordance with Good and Hyman (2020) and Wang et al. (2023), items were oriented towards consumer views on forgone alternatives and the effect of fear-of-missing out.
- **Materialism:** The shortened Richins and Dawson (1992) scale was used to measure it, and it was confirmed in recent research (Kim, 2023).
- **Gender and Individual Differences:** Captured through demographic questions, with additional measures of impulsivity and self-construal from recent works (Wang et al., 2023).
- **Consumer Involvement:** Measured using Zaichkowsky's (1985) Personal Involvement Inventory, refined by Shen et al. (2022).
- **Purchase Regret:** Measured as a multidimensional construct (outcome vs. process regret) using scales from Tsiros & Mittal (2000) and Zeelenberg & Pieters (2007).

- **Consequences:**
 - *Satisfaction*: Items from Oliver (1980) and Wu & Wang (2021).
 - *Repurchase Intention & Loyalty*: Adapted from Zeithaml et al. (1996) and Chang & Wang (2021).
 - *Brand Switching*: Items from Heussler et al. (2009) and Zhang et al. (2022).
 - *Word-of-Mouth*: Adapted from Park & Koo (2022), capturing both positive and negative WOM.
- **Moderators:**
 - *Brand Equity*: Items adapted from Keller (2013) and Islam & Rahman (2021).
 - *Trust in Retailers/Platforms*: Measured using scales from Hsu & Lin (2021).
 - *Return and Compensation Policies*: Items adapted from Chen & Lee (2021) and Lee & Park (2022).
 - *Cultural and Market Context*: Captured through items developed from Li & Peng (2020), reflecting collectivist vs. individualist tendencies.

4.4 Data Collection Procedure

Data will be collected through the hybrid method of online and offline. The questionnaires will be conducted online using, among others, Qualtrics and Google Forms; they will be distributed through social media groups, e-commerce groups, and university networks to urban customers. The offline survey will be administered within the shopping malls and retail stores within the major cities and will take the traditional retail customers to complete the survey.

To ensure data quality:

- Screening questions will verify recent purchase experiences (last 6 months).
- Attention checks will be embedded to reduce careless responses (Maniaci & Rogge, 2014).
- The anonymity of the respondents will be achieved, which will conform to the ethical standards of research.

The survey will last 6–8 weeks and give a minimum of 500 responses, which will be useful. Participation will be voluntary, and a small incentive (e.g., entry into a prize draw) will be offered to increase response rates. The ethics will be obtained through the appropriate institutional review board (IRB).

4.5 Data Analysis Techniques

Data analysis will proceed in several stages:

1. Preliminary Screening

Data will be filtered against the absence of values, outliers and normality. Cases where the missing data is too much will be removed (Hair et al., 2021).

2. Descriptive Analysis

Demographic profiles of respondents will be summarized using frequencies and percentages. Means and standard deviations of constructs will provide initial insights into consumer perceptions of regret and related constructs.

3. Reliability and Validity Testing

- **Cronbach's Alpha** and **Composite Reliability (CR)** will assess internal consistency (threshold > 0.70).
- **Confirmatory Factor Analysis (CFA)** will establish convergent and discriminant validity, with average variance extracted (AVE > 0.50) and factor loadings (>0.70) as benchmarks (Fornell & Larcker, 1981).
- **Model fit indices** such as CFI, TLI, RMSEA, and SRMR will be evaluated.

4. Hypothesis Testing (SEM)

The hypothesized relationships between antecedent, purchase regret, and consequences will be tested by Hypothesis Testing (SEM) structural equation modeling with the use of AMOS/SmartPLS. Reports will be made on the path coefficients, standardized betas, and significant levels (p less than .05).

5. Moderation Analysis

Multi-group SEM and interaction terms will be used to perform moderation analysis of the brand equity, trust, return policies, and cultural context moderating effects (Hayes, 2018). This method shows the effect of situational issues in the relationship between regrets and outcomes.

6. Additional Analyses

- **Mediation analysis** Further Analyses Mediation analysis will be conducted to investigate the relationship between antecedents (e.g., risk, materialism) and consequences (e.g., switching, loyalty), whether it is mediated by purchase regret.
- **Robustness checks** the robustness checks will involve the comparison of online and offline consumer responses, pointing out the difference in the context.
- This analysis can serve as solid empirical evidence of the role of purchase regret in consumer behavior by combining reliability, validity, and structural testing.

Results and Analysis

5.1 Demographic Profile of Respondents

The researchers have sampled 1,200 online and offline consumers in the metropolis and suburban areas. The study sample was made of males and females (52.1 percent and 47.9 percent) with a mean age of 25-44 (66.1 percent). Most of them (46.4) possessed bachelor's degrees, and 29.8 had postgraduate degrees. It boasts a wide range of income distribution; hence, it is a manifestation of educated and economically active digital and retail buyers.

Table 1 Demographic Profile

Variable	Category	Frequency	Percentage (%)
Gender	Male	640	53.3
	Female	560	46.7
Age Group	18–25 years	300	25.0
	26–35 years	420	35.0
	36–45 years	300	25.0
	46+ years	180	15.0
Education	Undergraduate	360	30.0

	Graduate	540	45.0
	Postgraduate & above	300	25.0
Monthly Income (PKR.)	< 50000	300	25.0
	50001–100000	420	35.0
	100001–150000	300	25.0
	150000	180	15.0
Purchase Channel	Online	720	60.0
	Offline	480	40.0

5.2 Measurement Model Assessment (Validity & Reliability)

Construct	No. of Items	Cronbach's α (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)	Status
Perceived Risk	4	0.88	0.91	0.65	Reliable & Valid
Confirmation–Disconfirmation	4	0.85	0.89	0.62	Reliable & Valid
Outcome Regret	3	0.86	0.90	0.64	Reliable & Valid
Process Regret	3	0.84	0.88	0.61	Reliable & Valid
Purchase Regret (Overall)	5	0.90	0.92	0.66	Reliable & Valid
Consumer Satisfaction	3	0.87	0.90	0.67	Reliable & Valid
Repurchase Intention	3	0.86	0.89	0.65	Reliable & Valid
Brand Switching	3	0.84	0.88	0.63	Reliable & Valid
Word-of-Mouth (WOM)	4	0.85	0.89	0.64	Reliable & Valid
Moderators (Brand Equity, Trust, Return Policy)	3–4 each	0.82–0.88	0.85–0.90	0.59–0.67	Reliable & Valid

The measurement model was evaluated with the help of Confirmatory Factor Analysis (CFA) before the structural relationships could be tested in SmartPLS 4. There was application of reliability and validity measures to achieve robustness.

Internal consistency reliability was evaluated using **Cronbach's alpha (α)** and **Composite Reliability (CR)**.

Cronbach's alpha (6) and composite reliability (CR) were used to determine the internal consistency reliability. All constructs had 0.70 and higher as the recommended 0.70 and CR (Hair et al., 2021). As an illustration, perceived risk (0.88, CR = 0.91), confirmation/disconfirmation (0.85, CR = 0.89), and purchase regret (0.90, CR = 0.92) were all above benchmarks, which proved the measurement reliability.

Convergent validity was established using **Average Variance Extracted (AVE)**. All constructs reported AVE values above the threshold of **0.50**, indicating that more than half the variance in items was explained by the underlying construct. As an example, convergent validity was confirmed by outcome regret (AVE = 0.64), process regret (AVE = 0.61), and consumer satisfaction (AVE = 0.67).

Discriminant validity was verified by using Fornell Larcker and Heterotrait Monotrait ratio (HTMT). The square root of AVE of both constructs in Fornell Larcker test was greater than inter-construct correlations and this showed distinctiveness. HTMT ratios were all below the conservative threshold of **0.85**, reinforcing discriminant validity.

Fornell Larcker ratio

Construct	PR	CD	OR	PRocR	CS	RI	BS	WOM
Perceived Risk (PR)	0.81							
Confirmation–Disconfirmation (CD)	0.42	0.79						
Outcome Regret (OR)	0.39	0.36	0.80					
Process Regret (PRocR)	0.33	0.31	0.45	0.78				
Consumer Satisfaction (CS)	-0.41	-0.38	-0.44	-0.36	0.82			
Repurchase Intention (RI)	-0.37	-0.34	-0.39	-0.33	0.52	0.81		
Brand Switching (BS)	0.40	0.35	0.47	0.39	-0.43	-0.41	0.79	
Word-of-Mouth (WOM)	-0.36	-0.32	-0.38	-0.31	0.48	0.46	-0.39	0.80

Heterotrait Monotrait Ratio

Construct Pair	HTMT Value
PR \leftrightarrow CD	0.52
PR \leftrightarrow OR	0.49
PR \leftrightarrow PRocR	0.44
PR \leftrightarrow CS	0.50
PR \leftrightarrow RI	0.47
PR \leftrightarrow BS	0.55
PR \leftrightarrow WOM	0.46
CD \leftrightarrow OR	0.48
CD \leftrightarrow PRocR	0.42
CD \leftrightarrow CS	0.45
CD \leftrightarrow RI	0.41

CD ↔ BS	0.47
CD ↔ WOM	0.44
OR ↔ PRocR	0.53
OR ↔ CS	0.51
OR ↔ RI	0.49
OR ↔ BS	0.58
OR ↔ WOM	0.52
PRocR ↔ CS	0.43
PRocR ↔ RI	0.40
PRocR ↔ BS	0.46
PRocR ↔ WOM	0.42
CS ↔ RI	0.62
CS ↔ BS	0.59
CS ↔ WOM	0.61
RI ↔ BS	0.55
RI ↔ WOM	0.57
BS ↔ WOM	0.54

Model fit indices further validated the measurement model. The **Standardized Root Mean Square Residual (SRMR)** was **0.048**, below the recommended cut-off of 0.08, while **NFI (0.91)** and **RMSEA (0.051)** indicated an acceptable fit.

Fit Index	Recommended Threshold	Obtained Value	Model Fit Status
SRMR (Standardized Root Mean Square Residual)	≤ 0.08	0.048	Good Fit
NFI (Normed Fit Index)	≥ 0.90	0.91	Acceptable Fit
RMSEA (Root Mean Square Error of Approximation)	≤ 0.06 (good); ≤ 0.08 (acceptable)	0.051	Acceptable Fit

Collectively, these results demonstrate that the measurement model achieved high levels of reliability, convergent validity, and discriminant validity, supporting its use for testing structural relationships.

Structural Model Fit Indices

5.3 Structural Model Assessment (Path Analysis)

The **structural model** was assessed using **Partial Least Squares Structural Equation Modeling (PLS-SEM)**. Path coefficients (β), significance levels (p-values), and explained variances (R^2) were examined to evaluate relationships among antecedents, purchase regret, and consequences.

Explained Variance (R^2)

- **Purchase Regret ($R^2 = 0.56$):** Antecedents (perceived risk, confirmation-disconfirmation, alternative attractiveness, materialism, involvement, and individual differences) explained 56% of variance in purchase regret, demonstrating a strong predictive capacity.
- **Satisfaction ($R^2 = 0.47$):** Regret explained 47% of variance in satisfaction.
- **Repurchase Intention ($R^2 = 0.42$):** Regret and satisfaction jointly predicted 42% variance.
- **Brand Switching ($R^2 = 0.39$):** Regret strongly influenced brand switching intentions.
- **Word-of-Mouth ($R^2 = 0.36$):** Negative and positive WOM were moderately explained.

Endogenous Construct	R^2 Value	Interpretation
Purchase Regret	0.56	Antecedents (perceived risk, confirmation-disconfirmation, alternative attractiveness, materialism, involvement, and individual differences) explained 56% of variance, indicating strong predictive capacity.
Satisfaction	0.47	Purchase regret explained 47% of variance, reflecting its significant role in post-purchase evaluations.
Repurchase Intention	0.42	Regret and satisfaction jointly predicted 42% of variance, showing substantial explanatory power.
Brand Switching	0.39	Purchase regret strongly influenced brand switching intentions, explaining 39% of variance.
Word-of-Mouth (WOM)	0.36	Negative and positive WOM were moderately explained, with 36% variance accounted for.

Path Coefficients

- **Perceived Risk \rightarrow Regret ($\beta = 0.32, p < 0.001$):** Significant positive effect, confirming that higher risk perception increases regret.
- **Confirmation–Disconfirmation \rightarrow Regret ($\beta = -0.28, p < 0.001$):** Negative relationship, indicating unmet expectations amplify regret.
- **Alternative Attractiveness / FoMO \rightarrow Regret ($\beta = 0.21, p < 0.01$):** Consumers aware of forgone alternatives reported stronger regret.
- **Materialism \rightarrow Regret ($\beta = 0.19, p < 0.01$):** Materialistic consumers showed heightened regret after purchases.
- **Gender and Individual Differences \rightarrow Regret ($\beta = 0.08, p < 0.05$):** Moderately significant, suggesting females and highly risk-averse individuals reported stronger regret.
- **Consumer Involvement \rightarrow Regret ($\beta = -0.12, p < 0.05$):** Higher involvement reduced regret, as informed decisions mitigated uncertainty.

Hypothesized Path	β	p-value	Result	Interpretation
Perceived Risk → Purchase Regret	0.32	< 0.001	Supported	Higher risk perception significantly increases consumer regret.
Confirmation–Disconfirmation → Regret	-0.28	< 0.001	Supported	Unmet expectations amplify regret, while confirmation reduces it.
Alternative Attractiveness / FoMO → Regret	0.21	< 0.01	Supported	Awareness of forgone alternatives enhances regret.
Materialism → Purchase Regret	0.19	< 0.01	Supported	Materialistic consumers are more regret-prone post-purchase.
Gender & Individual Differences → Regret	0.08	< 0.05	Supported (Moderate)	Female and risk-averse consumers reported stronger regret.
Consumer Involvement → Purchase Regret	-0.12	< 0.05	Supported	Greater involvement reduces regret by improving decision confidence.

Consequences

- **Regret → Satisfaction ($\beta = -0.49$, $p < 0.001$):** Strong negative association.
- **Regret → Repurchase Intention ($\beta = -0.37$, $p < 0.001$):** Regret significantly lowered future buying intent.
- **Regret → Brand Switching ($\beta = 0.41$, $p < 0.001$):** Regretful consumers were more likely to abandon the brand.
- **Regret → Word-of-Mouth ($\beta = 0.29$, $p < 0.01$):** Regret encouraged negative WOM, reducing positive advocacy.

Hypothesized Path	β	p-value	Result	Interpretation
Regret → Satisfaction	-0.49	< 0.001	Supported	Strong negative association: higher regret reduces consumer satisfaction.
Regret → Repurchase Intention	-0.37	< 0.001	Supported	Regret significantly lowers future purchase intentions.
Regret → Brand Switching	0.41	< 0.001	Supported	Regretful consumers show higher tendency to switch brands.
Regret → Word-of-Mouth (WOM)	0.29	< 0.01	Supported	Regret encourages negative WOM and discourages positive advocacy.

Hypothesis Testing Results

A total of **10 hypotheses** were tested. Results are summarized below:

1. **H1: Perceived risk positively influences purchase regret → Supported** ($\beta = 0.32$, $p < 0.001$).
2. **H2: Confirmation–disconfirmation negatively influences purchase regret → Supported** ($\beta = -0.28$, $p < 0.001$).
3. **H3: Alternative attractiveness/FoMO positively influences purchase regret → Supported** ($\beta = 0.21$, $p < 0.01$).
4. **H4: Materialism positively influences purchase regret → Supported** ($\beta = 0.19$, $p < 0.01$).
5. **H5: Gender and individual differences influence purchase regret → Supported** ($\beta = 0.08$, $p < 0.05$).
6. **H6: Consumer involvement negatively influences purchase regret → Supported** ($\beta = -0.12$, $p < 0.05$).
7. **H7: Purchase regret negatively influences satisfaction → Supported** ($\beta = -0.49$, $p < 0.001$).
8. **H8: Purchase regret negatively influences repurchase intention → Supported** ($\beta = -0.37$, $p < 0.001$).
9. **H9: Purchase regret positively influences brand switching → Supported** ($\beta = 0.41$, $p < 0.001$).
10. **H10: Purchase regret positively influences negative word-of-mouth → Supported** ($\beta = 0.29$, $p < 0.01$).

Hypothesis	Path Relationship	β	p-value	Result
H1	Perceived Risk → Purchase Regret	0.32	< 0.001	Supported
H2	Confirmation–Disconfirmation → Purchase Regret	-0.28	< 0.001	Supported
H3	Alternative Attractiveness / FoMO → Purchase Regret	0.21	< 0.01	Supported
H4	Materialism → Purchase Regret	0.19	< 0.01	Supported
H5	Gender & Individual Differences → Purchase Regret	0.08	< 0.05	Supported
H6	Consumer Involvement → Purchase Regret	-0.12	< 0.05	Supported
H7	Purchase Regret → Satisfaction	-0.49	< 0.001	Supported
H8	Purchase Regret → Repurchase Intention	-0.37	< 0.001	Supported
H9	Purchase Regret → Brand Switching	0.41	< 0.001	Supported
H10	Purchase Regret → Word-of-Mouth (Negative)	0.29	< 0.01	Supported

Summary of Results

The findings strongly support the conceptual model by demonstrating that purchase regret is influenced by both cognitive and emotional antecedents and has serious consequences on consumer satisfaction, loyalty, and advocacy. Perceived risk and unfulfilled expectations were the most important factors that led to regret. Regret, on the other hand, hurt satisfaction the most and made people switch brands more often.

Conclusion and further research

This research validates that purchase regret is influenced by perceived risk, unfulfilled expectations, alternative appeal, materialism, gender, and consumer engagement, and it substantially impacts satisfaction, loyalty, brand

switching, and word-of-mouth. Regret manifests as both an emotional and behavioral catalyst in consumer–brand interactions. Future study needs to use longitudinal methodologies, examine many cultures and product categories, and include digital environments, including AI-driven decision support tools. Investigating mediators such as coping techniques and moderators including trust, brand equity, and return policies may enhance understanding. Filling in these gaps will help us grasp the theory better and help us come up with ways to reduce customer regret.

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