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Factors influencing online return intention mediated by post-purchase dissonance: A study of shopee users during double-date promotional campaigns

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ABSTRACT

Background: High-intensity promotional campaigns like "double-date" sales have significantly increased product returns in e-commerce, posing logistical and environmental challenges. This study examines the drivers of Online Return Intention (ORI) among Shopee users in Java Island, Indonesia. **Methods**: Using a quantitative approach, data were collected from 163 respondents in Java via purposive sampling. Hypotheses were tested using Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyze the proposed research hypotheses and examine the indirect path relationships. **Findings:** Results indicate that information overload and impulsive buying do not directly influence online return intention but have a significant indirect effect through post-purchase dissonance mediation. Surprisingly, electronic word-of-mouth and perceived environmental efficacy do not significantly impact online return intentions in this context. **Conclusion**: Psychological discomfort is the primary driver of online return intention. However, the study identifies that complex return procedures and administrative burdens often discourage consumers from executing returns, despite high dissonance levels. E-retailers should focus on reducing information complexity to minimize post-purchase regret. **Novelty/Originality of this article:** The research identifies procedural barriers as a decisive factor that disrupts the transition from intention to action, providing a localized refinement of the SOR model within the context of Indonesia's developing e-commerce landscape.

KEYWORDS: eWOM; information overload; impulsive buying; online return intention; perceived environmental efficacy; post-purchase dissonance.

1. Introduction

The ongoing global transition toward digital-first transactions has served to fundamentally and irreversibly alter the paradigms of modern consumer behavior. This widespread behavioral shift has been significantly magnified and further accelerated by the deep digital integration that characterized the post-pandemic economic recovery phase (Kredivo, 2023). Analyzing the broader regional context of Southeast Asia, Indonesia has emerged as the most formidable and significant market for electronic commerce. Remarkably, Indonesia contributes an estimated 44% to the region's total Gross Merchandise Value (GMV), underscoring its pivotal economic role (Hoppe et al., 2024). This explosive economic growth is fundamentally driven by exceptionally high rates of internet

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penetration, which currently encompasses over 221 million active users. Furthermore, this growth is sustained by a definitive shift in the preferences of modern consumers, who increasingly favor the unprecedented efficiency, speed, and overarching convenience offered by diverse digital marketplaces (APJII, 2024). Within this competitive landscape, the platform known as Shopee has successfully solidified its prestigious position as the undisputed market leader in the Indonesian territory. The platform significantly and consistently outperforms all rival competitors when measuring both monthly website traffic volume and the total number of mobile application downloads (Ratih, 2024). Shopee's dominance is attributed to its innovative "shoppertainment" strategies and aggressive sales promotion tactics, particularly through its recurring "double-date" promotional campaigns (e.g., 1.1, 2.2, 11.11, 12.12). During these periods, Shopee strategically leverages deep price-offs, the widespread distribution of free shipping vouchers, and interactive live sales broadcasts to artificially manufacture a palpable sense of product scarcity and purchasing urgency among its consumer base.

However, the rapid escalation of online transactional volumes during these high-pressure, time-sensitive promotional periods has precipitated a significant and concerning surge in the volume of product returns. This spike in return rates poses a substantial, multi-faceted operational challenge for both the platform and its individual sellers. Within the expansive online retail environment, industry return rates are currently reported to reach staggering heights of up to 30%. This statistic is substantially higher than the comparatively modest 8.89% return rate typically observed within traditional brick-and-mortar retail establishments (Putra, 2024). This phenomenon is particularly prevalent in the fashion and beauty categories. In these specific sectors, consumers frequently discover upon delivery that the physical characteristics of the product fail to accurately meet the lofty expectations that were previously established by highly curated digital advertisements and promotional imagery (Silalahi et al., 2024). These discrepancies between expectation and reality serve to actively foster a state of cognitive dissonance, notably post-purchase dissonance, which is characterized by psychological discomfort and regret arising from a perceived gap between consumer expectations and the actual purchase reality (Festinger, 1957; Fernandez-Lores et al., 2024). This regret arises directly from the consumer's perception of a vast and unbridgeable gap existing between their initial pre-purchase expectations and the actual, tangible reality of the purchased item. If this growing dissatisfaction is left unmanaged, it forcefully drives affected consumers toward formulating an Online Return Intention (ORI), posing a threat to the sustainability of e-commerce due to increased logistical costs and carbon emissions (Wang et al., 2021; Zhang et al., 2025).

To thoroughly comprehend the complex psychological mechanisms that reside behind these consumer returns, this investigative study actively utilizes the established Stimulus-Organism-Response (SOR) theoretical framework as its foundational lens (Mehrabian & Russell, 1974). The SOR model posits that external environmental cues (Stimuli) influence an individual's internal cognitive and emotional state (Organism), which subsequently dictates their behavioral outcomes (Response) (Lu et al., 2025; Li & Jin, 2025). When applying this framework to the highly specific context of e-commerce "double-date" promotional campaigns, the external environmental stimuli are clearly defined characterized by Information Overload (IO), Impulsive Buying (IB), and electronic Word-of-Mouth (eWOM). The phenomenon of information overload actively occurs when the sheer, overwhelming volume of promotional data, advertisements, and available product choices vastly exceeds the individual consumer's inherent cognitive processing capacity. This cognitive flooding invariably leads to severe decision fatigue, confusion, and heightened purchase anxiety (Shahid et al., 2025; Eppler & Mengis, 2004). Simultaneously, the high-pressure urgency that is intentionally induced by limited-time flash sales frequently acts as a catalyst to trigger impulsive buying behaviors. This behavior is defined as an unplanned, sudden, and highly spontaneous purchasing action that is driven predominantly by sudden emotional arousal, effectively bypassing any form of rational, measured evaluation (Xie et al., 2025; Cachón-Rodríguez et al., 2025). Furthermore, eWOM serves as a highly critical external stimulus that actively shapes and calibrates the consumer's initial expectations

prior to the transaction (Li et al., 2021). However, overly positive or exaggerated user reviews may inadvertently create highly unrealistic performance benchmarks that the actual, physical product ultimately fails to satisfy upon delivery (D'Acunto et al., 2025).

The internal psychological state of the consumer, representing the crucial "Organism" component within the SOR framework, is embodied in this research study by the concept of Post-Purchase Dissonance (PPD). This psychological discomfort acts as the central mediator operating between the initial purchase stimuli and the subsequent return intentions, as consumers attempt to resolve their psychological conflicts by actively seeking out and executing compensatory actions, such as returning the product (Powers & Jack, 2013; Ahmad et al., 2025). Adding a layer of complexity to this behavioral model, the concept of Perceived Environmental Efficacy (PEE) serves as a critical moderating variable impacting this overarching return intention. PEE dictates that individuals who firmly believe that their individual actions, such as making the conscious choice to avoid returning products to actively reduce their environmental footprint, can contribute to preservation are more likely to suppress their impulse to return products (Antil, 1984; Yan et al., 2024). Particularly within the context of rapidly emerging economies like Indonesia, where the principles of green consumption and sustainability are just beginning to gain significant traction among the populace, PEE possesses the potential to act as a powerful corrective behavioral force. This force may actively suppress the cognitive intention to return a product, even in situations where high levels of post-purchase dissonance are demonstrably present (Leary et al., 2024; Fernandez-Lores et al., 2024).

Despite the growing importance of return management strategies, empirical academic research that specifically focuses on the unique intersection between aggressive, high-frequency sales promotions and rising environmental consciousness within the specific cultural context of Indonesia remains surprisingly limited and underexplored. This study aims to fill that gap by examining the factors influencing Online Return Intention among Shopee users in Java. Java was explicitly chosen for this analysis as it represents the geographic region boasting the highest rates of e-commerce penetration, coupled with the most profound logistical complexities within the entire Indonesian archipelago (Kredivo, 2023). By systematically analyzing the intricate roles of IO, IB, and eWOM as stimuli, PPD as the mediating organism, and PEE as a potential moderator, this comprehensive research provides a comprehensive localized extension of the SOR framework. Ultimately, the empirical findings generated from this study are designed to offer highly actionable and strategic insights for digital e-commerce platforms. These insights will empower platforms to meticulously refine their aggressive promotional strategies and optimize their User Interface/User Experience (UI/UX) designs. Such refinements will ensure that these platforms not only successfully maximize their raw transaction volumes but also simultaneously mitigate the severe psychological burdens placed on consumers and the immense environmental costs associated with the modern cycle of product returns.

2. Methods

To address the research objectives, this study employed a highly structured quantitative descriptive research design. This design integrated an *ex post facto* approach to meticulously analyze the diverse factors that actively influence Online Return Intention (ORI) among the user base of Shopee during their participation in high-stress "double-date" promotional campaigns. As a communication study using a self-administered survey, this research acts as a foundational blueprint designed to accurately map out the intricate, multi-directional relationships between the identified variables without the introduction of any direct experimental intervention by the researchers (Cooper & Schindler, 2014; Sekaran & Bougie, 2016). The extensive data collection process adhered strictly to a cross-sectional survey methodology. This process was actively conducted over a defined temporal window spanning between the months of October and November in the year 2025. The survey was executed entirely under realistic field conditions to effectively capture the genuine, unadulterated real-world consumer behaviors that occur dynamically on these

digital platforms. The primary target population designated for this research comprised highly active Shopee users located within the nation of Indonesia. However, the study maintained a strict geographic focus exclusively on those consumers currently residing on the island of Java, a decision driven primarily by the island's exceptionally high rates of internet penetration and its overarching dominance in the nation's logistical networks.

To guarantee that the collected data accurately reflected the target demographic and to ensure the utmost relevance of the selected respondents, a stringent purposive sampling methodology was meticulously utilized. This specific sampling strategy was explicitly designed to target individuals who successfully fulfilled a comprehensive set of seven distinct inclusion criteria: aged over 17, Java residents, made purchases during double-date promos in the last 12 months, engaged in impulsive buying, relied on electronic Word-of-Mouth (eWOM), understood return mechanisms, and experienced information overload on the platform of Shopee. Following Hair's (2017) recommendation for a minimum sample of 5–10 times the number of estimated parameters, a minimum of 135 respondents was required for the 27 items. Out of 385 total responses collected via Google Forms, 163 valid responses were retained after rigorous screening and data cleaning. The final sample was predominantly female (68.72%) and aged 26–30 years (49.08%). Most participants held a Bachelor's degree (55.21%) and resided in DKI Jakarta (38.04%), representing a productive and digitally literate demographic.

The survey instrument itself was adapted from previously established and highly validated academic sources to unequivocally guarantee the content validity of the measurement tool. The scales utilized to measure Information Overload (4 items), Impulsive Buying (4 items), eWOM (7 items), Post-Purchase Dissonance (4 items), and Perceived Environmental Efficacy (4 items) were primarily sourced and adapted from the comprehensive framework developed by Fernandez-Lores et al. (2024). Additionally, the crucial dependent variable of Online Return Intention was measured using 4 items that were synthesized and derived from the combined methodologies of Fernandez-Lores et al. (2024) and Helinski et al. (2024). To ensure high granularity in the responses and to consciously minimize the statistical risk of neutral response bias, all of the incorporated variables were carefully measured utilizing a standardized six-point Likert scale, ranging definitively from 1 (representing Strongly Disagree) to 6 (representing Strongly Agree).

The practical execution of this research was systematically carried out across three highly distinct and meticulously planned stages: an initial wording test, a subsequent pre-test, and finally, the deployment of the main survey. The wording test stage involved the active participation of six distinct professionals and academic scholars originating from a variety of diverse backgrounds. Their primary role was to rigorously evaluate and definitively ensure the absolute linguistic clarity and the foundational face validity of the survey instrument before wider distribution. Following the successful completion of this review, a formal pre-test phase was officially conducted utilizing a smaller subset of 36 appropriate respondents. During this critical phase, the construct validity and internal reliability of the instrument were mathematically confirmed utilizing the IBM SPSS 27 software suite. This process explicitly ensured that all utilized indicators successfully met or exceeded the stringent Kaiser-Meyer-Olkin (KMO) statistical threshold (requiring a value of ≥ 0.5) as well as the standard threshold for Cronbach's Alpha (requiring a value of >0.6). Once the integrity of the instrument was verified, the main phase of data collection was broadly carried out through targeted digital distribution methods, relying primarily on the popular social media platform Instagram and the messaging application WhatsApp. Importantly, the digital survey incorporated a highly prominent and clearly articulated informed consent section to absolutely guarantee the voluntary nature of the participation and to assure the strict confidentiality of all submitted data.

Inferential and descriptive statistics were performed using the highly advanced Partial Least Squares Structural Equation Modeling (PLS-SEM) technique, specifically utilizing the SmartPLS 4.0 software application. This sophisticated analytical process strictly adhered to the comprehensive two-stage evaluative procedure explicitly suggested in the academic literature by Hair et al. (2019). The critical first stage of this procedure involved an

exhaustive and detailed assessment of the proposed measurement model. The primary goal here was to rigorously evaluate convergent validity, a condition successfully met when individual factor loadings demonstrably exceeded the 0.70 benchmark and the Average Variance Extracted (AVE) values surpassed the 0.50 threshold. , while internal consistency reliability was confirmed via Composite Reliability (CR) and Cronbach's Alpha with thresholds above 0.70. Simultaneously, the internal consistency reliability of the model was mathematically confirmed through the calculation of Composite Reliability (CR) and Cronbach's Alpha scores, both of which comfortably exceeded the mandated thresholds of 0.70. Furthermore, the discriminant validity of the constructs was rigorously and meticulously verified by deploying three distinct statistical methods: the Fornell-Larcker criterion, the analysis of item cross-loadings, and the modern Heterotrait-Monotrait Ratio (HTMT). The HTMT evaluation utilized a highly strict maximum cut-off value of less than 0.90 to definitively ensure the conceptual distinctiveness of every construct. Progressing to the second stage of the methodology, the overarching structural model was comprehensively evaluated to formally test the validity of the hypothesized causal relationships. This was accomplished by deeply examining the generated path coefficients, the calculated R-square (R^2) values indicating explanatory power, and the specific effect sizes (f^2). To accurately analyze the highly complex mediation effects exerted by Post-Purchase Dissonance, alongside the nuanced moderating influence introduced by Perceived Environmental Efficacy, a robust bootstrapping resampling method was actively employed. Within this advanced analysis, definitive statistical significance was determined exclusively through the observation of T-statistics that safely exceeded the 1.965 threshold, paired with corresponding P-values falling strictly below the 0.05 confidence mark. Finally, the overall model fit was diagnosed using the Standardized Root Mean Square Residual (SRMR) metric. In this final check, attaining a resulting value of ≤0.10 served as clear indication of a highly acceptable and robust mathematical fit between the theoretically proposed model and the actual, empirically gathered real-world data.

3. Results and Discussion

3.1 Hypotesis development and research model

The foundational theoretical framework that structurally supports this entire academic study is deeply grounded in the widely recognized Stimulus-Organism-Response (SOR) model, which has been thoughtfully adapted and highly contextualized based on the seminal research conducted by Fernandez-Lores et al. (2024). When specifically applied to the unique, high-arousal environment of e-commerce "double-date" promotional events, the external environmental stimuli are clearly categorized into three distinct phenomena: the state of Information Overload, the behavioral manifestation of Impulsive Buying, and the social influence exerted through electronic Word-of-Mouth (eWOM). These three potent stimuli collectively act to directly influence and shape the individual consumer's internal, subjective psychological state, which represents the "Organism" element of the model. In this specific study, this internal state is accurately embodied by the construct of Post-Purchase Dissonance. This dissonant psychological state ultimately serves to dictate and propel the final behavioral Response, which manifests practically as the Online Return Intention.

The phenomenon of Information Overload (IO) actively materializes when consumers navigating digital storefronts find themselves entirely inundated with an excessive, unmanageable volume of complex product descriptions, anxiety-inducing countdown timers, and brightly flashing promotional banners. This sheer volume of data rapidly exceeds the inherent cognitive processing limits of the human brain (Eppler & Mengis, 2004). During the specific occurrences of Shopee's "double-date" sales extravaganzas, this severe cognitive overload almost invariably degrades the quality of the consumer's choices, leading directly to sub-optimal, rushed decision-making. Consequently, when these consumers ultimately receive the physical item and realize that it fails to meet the poorly

formed and inaccurately processed expectations they developed during the sale, they rapidly develop a strong psychological desire to reverse the entire digital transaction as a means to forcefully mitigate their deeply perceived personal and financial loss (Gao et al., 2018).

Following a remarkably similar behavioral trajectory, the phenomenon of Impulsive Buying (IB) plays a critical role. This behavior, which is fundamentally characterized by highly spontaneous, emotionally driven, and entirely unplanned purchasing decisions, frequently operates by completely bypassing any normal pathways of rational cognitive evaluation. This acute lack of strategic forethought and financial planning frequently results in severe and immediate feelings of regret the moment the high-arousal, pressure-filled promotional environment inevitably fades. This sudden emotional crash directly and profoundly increases the consumer's subsequent intention to physically return the unneeded product (Lim et al., 2017).

Furthermore, the concept of electronic Word-of-Mouth (eWOM) acts as a highly significant external psychological stimulus by actively shaping and artificially inflating the consumer's initial expectations regarding the product's ultimate quality and performance. Interestingly, this creates a distinct paradox within the e-commerce ecosystem. Reviews that are excessively favorable or highly hyperbolic can inadvertently establish remarkably unrealistic benchmarks for the product. Consequently, when the actual, physical product predictably fails to perfectly align with these socially constructed, artificially high expectations, consumers inherently feel misled or deceived by the platform, thereby strongly fueling their latent intentions to initiate a return (Li et al., 2021). Thus, based on these robust theoretical foundations, this study confidently proposes the following initial set of hypotheses: H1a: Information overload has a positive effect on Online Return Intention. H1b: Impulsive buying behavior has a positive effect on Online Return Intention. H1c: eWOM has a positive effect on Online Return Intention.

According to Cognitive Dissonance Theory, as originally postulated by Festinger (1957 it is understood that individuals experience profound psychological discomfort whenever they detect that their internal beliefs or pre-established expectations are starkly inconsistent with observable reality. Operating within the structural confines of this study, the construct of Post-Purchase Dissonance (PPD) serves as the critical, mediating "Organism" that actively bridges the gap between the initial external purchase stimuli and the final behavioral return responses. Extensive prior research actively indicates that external factors such as IO, IB, and eWOM do not possess the capacity to merely trigger return behaviors directly in a vacuum, rather, they must first successfully induce a highly specific state of internal mental tension and profound regret (Chen et al., 2024). Consumers who report feeling cognitively overwhelmed by immense volumes of information, or those who admit to having purchased products through impulsive means, are demonstrably more psychologically susceptible to experiencing this intense "buyer’s remorse". To successfully alleviate this highly unpleasant psychological state and to ultimately restore their internal emotional balance, these distressed consumers are forced to adopt various compensatory behavioral strategies, the most notable and frequent of which is making the firm decision to physically return the offending product (Sweeney et al., 2000; Fernandez-Lores et al., 2024). Therefore, the following hypotheses are formulated: H2a: Post-purchase dissonance has a positive effect on Online Return Intention. H2b: Post-purchase dissonance mediates the relationship between Information Overload and Online Return Intention. H2c: Post-purchase dissonance mediates the relationship between Impulsive Buying and Online Return Intention. H2d: Post-purchase dissonance mediates the relationship between eWOM and Online Return Intention.

While it is broadly understood that PPD generally acts as the primary driver behind return intentions, it is crucial to recognize that this linear relationship can be significantly altered or disrupted by the introduction of the consumer's own personal ethical considerations. Specifically, the concept of Perceived Environmental Efficacy (PEE) refers to a consumer's deeply held internal belief that their own individual, personal actions can tangibly and meaningfully contribute to the broader goals of global ecological preservation

(Antil, 1984). When examining the standard e-commerce return cycle, the highly complex networks of reverse logistics undeniably contribute massive amounts of harmful carbon emissions and generate staggering volumes of non-recyclable packaging waste (Wang et al., 2021). Consumers who possess notably high levels of PEE are vastly more likely to remain acutely conscious of the severe environmental costs inherently associated with executing a product return. Consequently, even when these specific individuals are actively experiencing high levels of internal cognitive dissonance and deep purchase regret, these highly environmentally conscious consumers may actively and consciously choose to suppress their natural return intentions. They execute this suppression as a direct, compensatory measure designed to actively mitigate the expansion of their own personal ecological footprint (Panda et al., 2020; Fernandez-Lores et al., 2024). This theoretical dynamic strongly suggests that the construct of PEE possesses the unique capability to act as a powerful corrective behavioral buffer within the broader structural confines of the SOR model. Based entirely on this theoretical assumption, this study confidently proposes its final hypothesis: H3: Perceived Environmental Efficacy negatively moderates the relationship between Post-Purchase Dissonance and Online Return Intention.

Based on the the comprehensive discussion detailed above, the final proposed research model seamlessly integrates both the macro-environmental drivers and the highly personal psychological drivers of return behavior explicitly within the unique operational ecosystem of Shopee. The conceptual framework is illustrated in Figure 1 below.

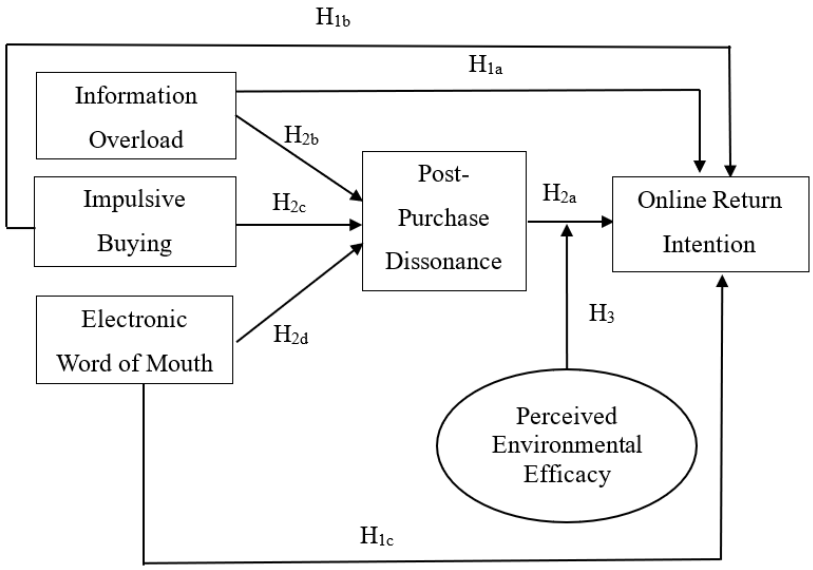

Fig. 1. Study framework
(Fernandez-Lores, et al., 2024)

3.2 Findings

3.2.1 Measurement model assessment

The critical first step undertaken in the comprehensive assessment of the reflective measurement model involved a meticulous evaluation of the individual indicator loadings to definitively guarantee highly satisfactory levels of item reliability. As vividly demonstrated within the detailed cross-loading analysis (Table 1), the specific mathematical loading values calculated for all utilized items spanned a highly acceptable range, falling exactly between 0.608 and 0.851. Adhering strictly to the rigorous methodological criteria formally suggested by Hair et al. (2019), it is generally preferred that loading values sit comfortably above the 0.70 benchmark. However, these same criteria explicitly concede that values registering slightly above the 0.60 threshold remain perfectly acceptable, particularly within the context of exploratory research paradigms, provided that

the overarching validity of the primary construct remains fully maintained. Consequently, within the precise parameters of this specific study, every single item was confidently retained for further analysis because they unequivocally met these baseline statistical requirements. This successful retention clearly indicates that all included indicators operate as highly reliable and mathematically sound representations of their respective theoretical constructs.

The crucial metric of internal consistency reliability was subsequently subjected to further assessment, specifically utilizing three distinct statistical tools Cronbach's Alpha, the Rho_A metric, and the calculation of Composite Reliability (CR). As shown in Table 1, the empirical data undeniably showed that the calculated Cronbach's Alpha values spanning across all included constructs occupied a healthy range from a minimum of 0.727 up to a maximum of 0.835. Similarly, the robust CR values measured consistently higher, occupying a range starting at 0.819 and peaking at 0.884. Because every single one of these independently calculated values successfully and comfortably exceeded the strongly recommended academic threshold of 0.70 as firmly established by Hair et al. (2019), the data confirms the presence of exceptionally strong internal consistency spanning across all the utilized latent variables. These variables include the critical constructs of Information Overload (IO), Impulsive Buying (IB), electronic Word-of-Mouth (eWOM), Post-Purchase Dissonance (PPD), Perceived Environmental Efficacy (PEE), and finally the dependent behavioral outcome of Online Return Intention (ORI).

Table 1. Results of measurement model assessment

Latent Variable	Code	Outer Loading	Cronbach Alpha	Composite Reliability	AVE
Information Overload	IO1	0.735	0.793	0.857	0.600
	IO2	0.822			
	IO3	0.796			
	IO4	0.742			
Impulsive Buying	IB1	0.812	0.842	0.884	0.656
	IB2	0.830			
	IB3	0.812			
	IB4	0.784			
Electronic Word-of-Mouth	eWOM1	0.608	0.835	0.877	0.508
	eWOM2	0.769			
	eWOM3	0.793			
	eWOM4	0.811			
	eWOM5	0.686			
	eWOM6	0.658			
	eWOM7	0.634			
Post-Purchase Dissonance	PPD1	0.797	0.798	0.865	0.616
	PPD2	0.851			
	PPD3	0.724			
	PPD4	0.763			
Perceived Environmental Efficacy	PEE1	0.834	0.727	0.819	0.532
	PEE2	0.696			
	PEE3	0.703			
	PEE4	0.674			
Online Return Intention	ORI1	0.816	0.837	0.876	0.638
	ORI2	0.851			
	ORI3	0.811			
	ORI4	0.711			

Furthermore, the vital concept of convergent validity was meticulously examined and mathematically verified by calculating the Average Variance Extracted (AVE) for each construct. The finalized mathematical results clearly indicated that all generated AVE values occupied a healthy statistical range spanning strictly from 0.508 to 0.656. Notably, every single value within this range consistently and successfully surpassed the highly critical 0.50

baseline benchmark that is universally recommended within the methodological literature by Hair et al. (2019). This statistical success serves to definitively demonstrate that the theoretical constructs are mathematically capable of explaining more than 50% of the total measured variance occurring within their respective specific indicators. This reality perfectly signifies the achievement of a highly adequate and totally satisfactory level of convergent validity across the entire model.

The concept of discriminant validity was subsequently evaluated through the simultaneous deployment of three highly robust and mathematically demanding criteria: the analysis of raw cross-loadings, the application of the Fornell-Larcker criterion, and the calculation of the Heterotrait–Monotrait (HTMT) ratio. Based on the cross-loading results (Table 1), every single utilized indicator successfully exhibited its absolute highest mathematical loading factor strictly upon its own intended, specific latent construct, especially when directly compared against any other competing construct currently present within the overarching model. Furthermore, when strictly applying the rules of the Fornell-Larcker criterion (Table 2), the researchers carefully analyzed the square root of the AVE for every individual construct (e.g., IB = 0.810 dan ORI = 0.799). The final data unequivocally confirmed that each of these calculated square root values was mathematically far greater than its highest known correlation value with any other separate construct located within the same model. This result firmly confirm that each distinct variable is totally and completely empirically distinct from its peers.

Table 2. Results of Fornell-Larcker criterion

	IB	IO	ORI	PEE	PPD	eWOM
IB	0.810					
IO	0.450	0.775				
ORI	-0.028	-0.02	0.799			
PEE	0.299	0.313	0.236	0.730		
PPD	0.444	0.412	0.056	0.359	0.785	
eWOM	0.220	0.259	0.19	0.272	0.195	0.713

Finally, the study utilized the HTMT ratio, which represents a vastly more modern, sophisticated, and highly rigorous statistical criterion formally introduced to the academic community by Henseler et al. (2015). This test was executed to provide an additional, final layer of validation regarding construct uniqueness. Within the precise calculations of this study, the generated HTMT values were found to occupy a notably low range, falling exactly between 0.085 and 0.556 (Table 3). Crucially, every single one of these values sat incredibly significantly below the highly conservative maximum threshold value of 0.90 (Hair et al., 2019). The success of these specific mathematical results serves to definitively confirm that the theoretical constructs absolutely do not bleed into or overlap with one another. They are entirely and purely conceptually distinct, with each carefully measuring completely different, unique, and highly specific dimensions of the overarching Shopee consumer shopping experience. Overall, these impressively robust mathematical findings definitively affirm that the entire proposed measurement model succeeds in demonstrating exceptionally high levels of both reliability and validity. This ultimately provides an incredibly strong, virtually unassailable statistical foundation to support the highly complex structural path analysis that follows.

Table 3. Results of heterotrait–monotrait ratio of correlations (HTMT)

	IB	IO	ORI	PEE	PPD	eWOM
IB						
IO	0.556					
ORI	0.144	0.120				
PEE	0.393	0.447	0.275			
PPD	0.490	0.481	0.085	0.415		
eWOM	0.282	0.335	0.222	0.356	0.254	

3.2.2 Structural model assessment

The comprehensive evaluation of the structural model (inner model) officially commenced by conducting a rigorous collinearity test. The primary objective of this specific test was to definitively ensure the complete mathematical absence of any detrimental multicollinearity existing amongst the selected predictor variables. The successfully calculated Variance Inflation Factor (VIF) values spanning across all included variables registered within an exceptionally low and remarkably safe range, falling strictly between 1.067 and 1.422. It is highly notable that these specific mathematical results sit incredibly comfortably below the highly conservative safety threshold of 3.0, and they are massively lower than the more commonly utilized, deeply relaxed cut-off point of 10.0, as frequently referenced by Hair et al. (2019). These outstanding results serve to clearly indicate that the statistical threat of multicollinearity is absolutely not a viable concern within the structural confines of this specific model. This success solidly confirms the total statistical independence of all included exogenous variables.

Directly following the successful completion of the collinearity assessment, an extensive structural path analysis was systematically performed. The core purpose of this procedure was to formally and mathematically test the validity of the various direct causal relationships proposed within the conceptual model. To determine true statistical significance, the researchers heavily relied upon an incredibly robust bootstrapping resampling procedure. This complex computational method meticulously utilized a massive set of 5,000 completely independent resamples, all evaluated at a highly stringent 95% confidence level (α= 0.05). The true explanatory power of the finalized structural model was subsequently evaluated deeply through an analysis of the adjusted R^2 values. This crucial evaluation revealed that the current proposed model successfully explains precisely 24.3% of the total observable variance occurring within the Post-Purchase Dissonance (PPD construct, whilst simultaneously managing to explain exactly 6.4% of the total variance associated with the ultimate outcome variable Online Return Intention (ORI).

Table 4. Results of path analysis coefficient (β), t-values and significance level (p-value)

Variable relations	Path Coefficient (β)	T-Statistics	P- Values	Conclusion
Electronic Word-of-Mouth -> Online Return Intention	0.164	1.463	0.072	Not significant
Electronic Word-of-Mouth -> Post-Purchase Dissonance	0.06	0.586	0.279	Not significant
Impulsive Buying -> Online Return Intention	-0.099	0.817	0.207	Not significant
Impulsive Buying -> Post-Purchase Dissonance	0.317	3.338	0.000	Significant
Information Overload -> Online Return Intention	-0.101	0.877	0.190	Not significant
Information Overload -> Post-Purchase Dissonance	0.254	2.998	0.001	Significant
Perceived Environmental Efficacy x Post-Purchase Dissonance -> Online Return Intention	0.041	0.428	0.334	Not significant
Post-Purchase Dissonance -> Online Return Intention	0.02	0.165	0.434	Not significant

The significance test results indicate that out of all examined relationships, only two paths were statistically significant, while six were not. Significant relationships include the influence of Impulsive Buying (IB) on Post-Purchase Dissonance (PPD) with a T-statistic of 3.338 (p = 0.000) and the effect of Information Overload (IO) on Post-Purchase Dissonance (PPD) with a T-statistic of 2.998 (p = 0.001). On the other hand, six relationships did not meet the threshold for significance. These include the direct influence of electronic Word-of-Mouth (eWOM) on Online Return Intention (ORI) (T = 1.463, p = 0.072) and Post-

Purchase Dissonance (PPD) (T = 0.586, p = 0.279). Furthermore, direct paths from Impulsive Buying (IB) (T = 0.817, p = 0.207) and Information Overload (IO) (T = 0.877, p = 0.190) to Online Return Intention (ORI) were not significant. Notably, the path from the mediating variable Post-Purchase Dissonance (PPD) to Online Return Intention (ORI) was also no6t significant (T = 0.165, p = 0.434), and the moderating effect of Perceived Environmental Efficacy (PEE) x Post-Purchase Dissonance (PPD) on Online Return Intention (ORI) failed to reach significance (T = 0.428, p = 0.334).

The predictive accuracy results show that Post-Purchase Dissonance has a low-to-moderate level of explained variance (R^2 = 24.3%) as influenced by Information Overload and Impulsive Buying. In contrast, Online Return Intention demonstrates a lower predictive accuracy (Adjusted R^2 = 6.4%), indicating that only a small portion of its variance is explained by the predictors in the model, with 93.6% of the variance attributed to other factors not covered in this study.

Among all constructs assessed through the f^2 effect size based on Kenny's (2018) criteria, four paths were found to have a relatively strong structural impact. These include: Impulsive Buying (IB) on Post-Purchase Dissonance (PPD) (f^2 = 0.106), Information Overload (IO) on Post-Purchase Dissonance (PPD) (f^2 = 0.067), Perceived Environmental Efficacy (PEE) on Online Return Intention (ORI) (f^2 = 0.056), and electronic Word-of-Mouth (eWOM) on Online Return Intention (ORI) (f^2 = 0.026). These values highlight the predictive contribution of these variables within the model. Conversely, the paths from Impulsive Buying (IB) and Information Overload (IO) to Online Return Intention (ORI) showed a moderate effect size (f^2 = 0.008), while the remaining paths, including the mediating role of Post-Purchase Dissonance (PPD) on Online Return Intention (ORI) (f^2 = 0.000) and the moderating effect of Perceived Environmental Efficacy (PEE) x Post-Purchase Dissonance (PPD) (f^2 = 0.003), demonstrated weak or negligible effects. These results emphasize that while promotional stimuli effectively trigger internal dissonance, the transition to online return intention is constrained by factors beyond the current psychological framework.

3.2.3 Hypothesis testing

The hypothesis testing results, serve to vividly expose the exceptionally highly complex, often contradictory, and deeply nuanced psychological dynamics that exist. These dynamics constantly operate between the initial burst of external purchase stimuli, the deeply uncomfortable post-purchase psychological states, and the final crystallization of online return intentions, particularly when these behaviors are contextualized directly within the highly specific, hyper-arousing ecosystem of Shopee's massive double-date promotional campaigns. When carefully analyzing the impact of the initial purchase stimuli, both Information Overload (IO) and Impulsive Buying (IB) were mathematically proven to wield a highly significant, deeply positive direct influence strictly upon the secondary "Organism" phase of the framework, which is represented by Post-Purchase Dissonance (PPD). This finding was definitively supported mathematically (H2b: β = 0.254, T = 2.998, p = 0.001; H2c: β = 0.317, T = 3.338, p = 0.000). Conversely, the social factor of electronic Word-of-Mouth (eWOM) entirely failed to exert any mathematically significant or recognizable effect whatsoever upon the development of Post-Purchase Dissonance (PPD) (H2d: β = 0.060, T = 0.586, p = 0.279). When the researchers pivoted their focus to analyze the potential direct effects exerted upon the final dependent variable of Online Return Intention (ORI), the results were starkly revealing, absolutely none of the three original external stimuli managed to reach the necessary threshold to claim statistical significance. The data definitively rejected these direct pathways for Information Overload (IO) (H1a: β = -0.101, T = 0.877, p = 0.190), Impulsive Buying (IB) (H1b: β = -0.099, T = 0.817, p = 0.207), and electronic Word-of-Mouth (eWOM) (H1c: β = 0.164, T = 1.463, p = 0.072). Furthermore, moving down the causal chain, the internal state of Post-Purchase Dissonance (PPD) incredibly failed to exert any significant direct mathematical impact upon the crystallization of Online Return Intention (ORI) (H2a: β = 0.020, T = 0.165, p = 0.434). Consequently, the highly theoretical moderating effect supposedly generated by Perceived Environmental

Efficacy (PEE) acting upon the specific relationship occurring between PPD and ORI was similarly, and entirely, mathematically unsupported by the empirical data (H3: β = 0.041, T = 0.428, p = 0.334).

Table 5. Hypothesis testing

No.	Hypotesis question	Research result	Path Coefficient (*β*)	T-Value	P-Value
H1a	IO -> ORI	Not Supported	-0.101	0.877	0.190
H1b	IB -> ORI	Not Supported	-0.099	0.817	0.207
H1c	eWOM -> ORI	Not Supported	0.164	1.463	0.072
H2a	PPD -> ORI	Not Supported	0.020	0.165	0.434
H2b	IO -> PPD	Supported	0.254	2.998	0.001
H2c	IB -> PPD	Supported	0.317	3.338	0.000
H2d	eWOM -> PPD	Not Supported	0.060	0.586	0.279
H3	PEE x PPD -> ORI	Not Supported	0.041	0.428	0.334

The deeply involved mediation analysis subsequently managed to add a layer of vital clarity to these somewhat confusing relationships by aggressively interpreting them strictly through the theoretical lens provided by the Stimulus-Organism-Response (SOR) framework. The data successfully proved that the psychological state of Post-Purchase Dissonance (PPD) indeed acts as a highly significant, profoundly active mediator bridging the vast behavioral gap between the onset of Information Overload (IO) and the eventual emergence of Online Return Intention (ORI) (H2b: β = 0.254, T = 2.998, p = 0.001). Post-Purchase Dissonance (PPD) performed this exact same successful mediating role in the relationship existing between Impulsive Buying (IB) and Online Return Intention (ORI) (H2c: β = 0.317, t = 3.338, p = 0.000). However, completely predictably based on prior data, absolutely zero mediation effect could be found regarding the variable of electronic Word-of-Mouth (eWOM) (H2d: β = 0.06, T = 0.586, p = 0.279).

The culmination of these exceptionally detailed statistical results serves to forcefully emphasize a highly crucial reality of modern e-commerce consumer behavior. While aggressive promotional stimuli such, as the deliberate flooding of excessive data or the artificial stoking of impulsive behaviors, absolutely do not possess the power to directly force consumers to initiate returns in a vacuum, they function by operating entirely indirectly. They achieve their damaging results entirely by serving as the vital catalyst that fosters intense psychological discomfort and deep-seated cognitive dissonance within the mind of the buyer nknown as Post-Purchase Dissonance (PPD). However, the incredibly glaring, almost shocking lack of any significant direct mathematical impact flowing from Post-Purchase Dissonance (PPD) straight into Online Return Intention (ORI) serves to highlight the existence of a massive, undeniably critical intention-behavior gap deeply entrenched within the specific confines of the contemporary Indonesian e-commerce marketplace. This massive gap explicitly indicates that even in those extreme scenarios where the internal psychological "Organism" is actively suffering from staggeringly high levels of deep regret, the final behavioral "Response" as the actual, physical intention to pack up and return the product is completely suppressed. This suppression is not psychological, but operational. It is enacted by the presence of immensely formidable procedural and complex behavioral barriers that are easily identified within any deep consumer behavior analysis. These ultimate barriers include intensely complex, highly un-navigable return mechanisms and the deeply felt, highly frustrating perceived opportunity costs associated with fighting platform bureaucracy.

3.3 Discussion

This study aims to analyze the vast array of underlying, multi-dimensional factors that actively and continuously influence the development of Online Return Intention (ORI) specifically among the highly active base of Shopee users residing in Indonesia. This analysis was highly concentrated on tracking behaviors precisely during the incredibly high-pressure, intensely chaotic operational windows defined by "double-date" promotional

campaigns. By systematically utilizing the well-regarded Stimulus-Organism-Response (SOR) framework as its guiding mechanism, the research successfully evaluates precisely how the external environmental forces of Information Overload (IO), Impulsive Buying (IB), and electronic Word-of-Mouth (eWOM) operate as incredibly potent external stimuli. These stimuli function specifically by triggering the onset of Post-Purchase Dissonance (PPD), which acts as the deeply affected psychological organism, which then theoretically drives the final, observable behavioral response taking the form of a return intention.

The findings reveal that neither Information Overload (IO) nor Impulsive Buying (IB) possess the capability to directly, independently increase the frequency of Online Return Intentions (H1a and H1b are rejected). This fascinating behavioral reality strongly suggests that the mere act of bombarding a consumer with excessive promotional data, or tricking them into making highly spontaneous, emotionally-charged purchasing decisions, simply does not immediately or automatically translate into a sudden desire to return those specific products. Instead, what the data heavily implies is that modern digital consumers have actively evolved to highly employ sophisticated, highly internalized cognitive coping mechanisms specifically designed to drastically mitigate this sensory overload. They execute this coping strategy by intentionally developing a severe tunnel vision, actively choosing to focus their limited cognitive resources exclusively on the most minimal, highly relevant cues available to them such as the massive red numbers indicating price drops or the simplified visual star ratings while simultaneously and completely ignoring the massive volumes of excessive, confusing descriptive details surrounding the product.

However, despite this lack of a direct relationship, both IO and IB demonstrate a highly significant, incredibly powerful indirect effect. This profound effect operates entirely and exclusively through the complete and total mathematical mediation of Post-Purchase Dissonance (H2b and H2c are supported). This highly specific finding clearly indicates that the true impact of these highly aggressive promotional stimuli is primarily and fundamentally psychological in its nature. These external tactics first function by forcefully inducing a highly distressed state of cognitive anxiety, deep buyer's remorse, and intense internal regret (categorized as PPD). It is precisely this intense psychological distress that then serves as the absolutely mandatory, highly necessary internal emotional fuel required to initially spark and subsequently sustain any form of return intentions.

When analyzing the consumer base deeply embedded within Indonesia's highly unique, exceptionally high-context, and intensely collectivist societal culture, it becomes apparent that these individuals highly likely perceive the utility of eWOM in a vastly different manner. Rather than utilizing it as a powerful, rigid expectation-setting stimulus that demands perfection, they instead utilize it far more casually as a simple, highly practical tool primarily intended for basic uncertainty reduction and simple pre-purchase factual verification. Electronic Word-of-Mouth (eWOM) shows neither a significant direct effect onon ORI (H1c is rejected) nor a significant indirect effect through PPD (H2d is rejected). This result diverges from the reference study by Fernandez-Lores, et al. (2024), likely due to cultural and contextual differences. In Indonesia's high-context and collectivist culture, consumers may perceive eWOM more as a tool for uncertainty reduction and pre-purchase verification rather than an expectation-setting stimulus. Furthermore, the tendency to maintain social harmony in such cultures often discourages the expression of negative emotions (eNWOM), making social proof less likely to trigger the intense psychological dissonance required to drive return behavior.

Interestingly, Post-Purchase Dissonance (PPD) itself does not have a direct significant impact on ORI (H2a is rejected). While 85.89% of respondents reported feeling regret or doubt after a purchase, this internal state failed to translate into return intentions. This phenomenon highlights a significant intention-behavior gap caused by formidable procedural barriers. The complexity of return mechanisms, the time-consuming nature of the bureaucracy and the opportunity cost, where the effort of returning outweighs the product’s relatively low price, act as structural filters that suppress return actions despite high levels of consumer dissatisfaction.

Finally, the theoretical moderating variable of Perceived Environmental Efficacy (PEE) entirely and completely fails to significantly moderate the highly critical relationship existing between PPD and ORI (H3 is rejected). While the specific respondents participating in this study undeniably demonstrated highly elevated levels of generalized environmental awareness, the highly theoretical, deeply noble psychological influence supposedly exerted by PEE was entirely and completely overshadowed and utterly crushed by the immense weight of the highly frustrating procedural hurdles previously discussed. These structural deterrents are so dominant in the Indonesian e-commerce landscape that additional psychological moderators like environmental concern become less visible in their effect. Overall, the study concludes that while promotional strategies successfully drive sales, they significantly heighten consumer dissonance, which is only held back from becoming an operational burden (returns) by the current administrative friction within the platform's ecosystem.

4. Conclusions

This study aimed to analyze the factors influencing Online Return Intention (ORI) among Shopee users during "double-date" promotional campaigns, employing the Stimulus-Organism-Response (SOR) framework to examine the roles of Information Overload (IO), Impulsive Buying (IB), and electronic Word-of-Mouth (eWOM) as stimuli, with Post-Purchase Dissonance (PPD) as a mediator and Perceived Environmental Efficacy (PEE) as a moderator. Findings reveal that none of the external stimuli IO, IB, or eWOM have a direct and significant effect on ORI. Regarding information overload, consumers appear to employ coping strategies by focusing only on relevant cues to navigate excessive data. Similarly, impulsive buying does not directly trigger returns. Instead, its impact is psychological, requiring the presence of post-purchase regret as a prerequisite. For eWOM, the lack of direct effect suggests that online reviews serve primarily as uncertainty reduction tools that help consumers make better-informed decisions, or conversely, are viewed with enough skepticism that they fail to create the high expectations necessary to drive return intentions.

Crucially, the research confirms the mediating role of Post-Purchase Dissonance (PPD), which fully mediates the influence of both Information Overload and Impulsive Buying on ORI. This indicates that excessive promotional information and unplanned purchases first manifest as psychological discomfort and cognitive anxiety, which then serve as the internal mechanism potentially driving the desire to return a product. However, PPD does not significantly mediate the relationship between eWOM and ORI, highlighting that social proof in this context is more of a pre-purchase verification tool rather than a driver of post-purchase regret.

Notably, neither PPD nor the moderating variable PEE significantly influenced ORI directly. This departure from previous literature (Fernandez-Lores et al., 2024) reveals a significant intention-behavior gap within the Indonesian e-commerce ecosystem. The study identifies that formidable procedural and behavioral barriers such as complex return mechanisms, time-consuming bureaucracies, and the perceived opportunity cost where return efforts outweigh the product’s price effectively prevent consumers from translating their dissonance into actual return actions. Consequently, these structural hurdles are so dominant that they overshadow psychological factors like environmental efficacy (PEE). For future research, it is recommended to investigate procedural friction as a specific constraint in emerging markets to provide sharper insights into the practical boundaries of consumer psychology in digital retail.

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The authors contributed to the data acquisition, analysis, and interpretation in this study. Conceptualization: E.F. and N.G.R.; Methodology: E.F. and N.G.R.; Data Curation: E.F.; Writing – Original Draft Preparation: E.F.; Writing – Review & Editing: E.F. and N.G.R.

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Declaration of Generative AI Use
During the preparation of this work, the authors used Gemini to assist in improving English grammar and structurally refining selected sentences from an independently written initial draft to ensure a more rigorous academic tone. The AI was utilized selectively to evaluate and enhance isolated sentences that required linguistic polish. After using this tool, the authors reviewed and edited the content as needed, meticulously paraphrasing the AI-generated suggestions prior to incorporating them into the final manuscript and took full responsibility for the content of the publication.

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