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ARTICLE

Influence of Point-of-Sale (POS) Marketing on Consumers' Impulse Purchases of Packaged Agricultural Products in Vietnam

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ABSTRACT

Vietnam is a predominantly agricultural nation with considerable potential for developing and exporting processed agricultural products. Vietnamese consumers also demonstrate a growing openness to imported agricultural goods, reflecting an increasingly globalized pattern of consumption. This study investigates the impact of point-of-sale (POS) marketing on impulse buying behavior about packaged agricultural products within retail settings in Vietnam. A quantitative research design was employed, involving a survey of 318 consumers in Ho Chi Minh City, Vietnam, to assess the effects of various POS marketing elements on their impulsive purchasing decisions. Data were collected through direct interaction and self-administered questionnaires in supermarkets and shopping malls, utilizing the mall intercept method. The primary analytical technique employed was Partial Least Squares Structural Equation Modeling (PLS-SEM). The results indicate that POS marketing activities exert a significant influence on impulse buying behavior. Specifically, elements such as the store environment, POS advertising, promotional efforts, and interactions with sales personnel directly impact consumers' propensity to make unplanned purchases. Collectively, these factors contribute to stimulating impulsive buying behavior. Based on these findings, the study recommends that retailers adopt targeted POS marketing strategies to enhance impulse purchasing in the expanding market for packaged agricultural products in Vietnam.

Keywords: Agricultural Products; Agricultural Goods; Impulse Buying; Point-of-Sale Marketing; Packaged Goods

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1. Introduction

Impulse buying (IB) has been known as a complex and intriguing phenomenon in the field of marketing, often referred to as the "dark side" of consumer behavior. Previous studies indicate that IB accounts for a substantial portion of sales in the retail industry[1, 2]. This widespread phenomenon is a critical consideration for marketing strategies, particularly given the complexity and prevalence of impulse purchases across different categories[3, 4]. Defined as unplanned purchases driven by spontaneous decisions, impulse buying plays a critical role in shaping consumer choices and has captivated researchers for many years. As it becomes increasingly embedded in everyday consumption patterns, marketing professionals are beginning to appreciate its significance in consumer decision-making processes.

Based on the available literature, IB behavior is influenced by a variety of factors that shape consumer decision-making[2, 5, 6]. External motivators similarly play a critical role in influencing impulse buying behavior. These external factors, which include marketing cues and stimuli controlled by marketers, are specifically designed to encourage consumer purchases[7]. Point-of-sale (POS) marketing strategies operate as external stimuli that can significantly influence IB behavior. The concept of POS marketing is an in-store strategy aimed at influencing purchasing decisions at the moment a transaction occurs, to increase the likelihood of additional purchases, which requires a deep understanding of a brand's target customers across various shopping channels[8]. POS marketing aims to influence consumer purchasing behavior at the moment of transaction by facilitating direct interaction between consumers and products.

Despite extensive research on impulse buying, existing studies often present inconsistent findings, particularly across different industry contexts[2, 9, 10]. Wu and Lee investigate the effects of consumption situations and experiential marketing on brand image and impulse buying behavior within the cosmetics industry. Employing quantitative methods, including SPSS and structural equation modeling (SEM), their study reveals that both consumption situations and experiential marketing have a positive influence on brand image. Notably, the findings highlight that in the context of cosmetics, consumption situations affect impulse buying behavior indirectly through experiential marketing[9]. Bandyopadhyay et al. explore the influence of various types of sales promotions, along with hedonic shopping motivation and positive affect, on impulse buying behavior. The findings indicate that only monetary and non-monetary immediate promotions significantly trigger impulse buying. Additionally, the urge to buy is confirmed as a key mediating variable in the impulse buying process[11]. Khan et al. emphasized that sales promotions have become one of the most powerful tools for influencing consumer perceptions, exerting a significant impact on purchase decisions. They further observed that advertising holds substantial persuasive power; even seemingly harmless advertisements can influence consumer behavior and alter purchase intentions[12]. Furthermore, while many researchers affirm the role of marketing in influencing IB behavior[13], only a few studies specifically examine the marketing elements employed by marketers and retailers at the point of sale. Gogoi and Shillong[14] emphasized that impulsive buying, although primarily driven by emotions, is also influenced by a range of situational and psychological factors, including the store environment, life satisfaction, self-esteem, and the consumer's emotional state at the time of purchase. They argued that impulse buying can be triggered by unexpected needs, visual cues, promotional stimuli, or a temporary decline in the cognitive capacity to evaluate the pros and cons of a purchase decision. In the packaged goods sector, Duong and Kieu examine the impact of POS marketing on consumers' impulse buying behavior in Ho Chi Minh City, Vietnam. Utilizing survey data from 302 consumers and applying exploratory factor analysis (EFA) and partial least squares structural equation modeling (PLS-SEM), the study finds that POS materials, brand awareness, and product display significantly affect impulse buying, mediated by feelings of pleasure and the urge to buy[15]. While researchers have acknowledged the importance of the 'impulsive urge' as a precursor to actual IB[10, 11], empirical evidence reveals that such urges do not necessarily lead to purchases[12, 13]. As a result, there remains significant potential to deepen our understanding of the POS marketing components that di-

rectly influence IB behavior [9, 15]. Although a substantial body of international research has investigated the impact of POS marketing on impulsive purchasing behavior, this domain remains notably underexplored within the specific context of packaged agricultural product consumption.

Vietnam's packaged agricultural products market presents substantial opportunities for growth, supported by strong domestic demand, expanding export markets, and advancements in packaging technology. Businesses entering this sector can capitalize on these trends by focusing on quality, sustainability, and innovation. The Consumer Packaged Goods (CPG) market in Vietnam is expected to grow from $17 billion in 2023 to over $26.9 billion by 2028, reflecting a 45.7% increase over the period [16]. The agricultural food processing industry in Vietnam focuses on four main categories: the processing and preservation of meat and meat products, the processing and preservation of aquatic products, the processing of dairy products and dairy derivatives, and the processing and preservation of fruits and vegetables. Together, these sectors have exhibited sustained growth in recent years, driven by robust domestic demand and the broadening of export markets. Processed agricultural products are increasingly favored by Vietnamese consumers due to their convenience, encompassing both domestically produced and imported goods. This growing preference signifies a prominent shift in consumer behavior toward time-efficient and ready-to-use food solutions, largely driven by rapid urbanization, evolving lifestyles, and heightened concerns regarding food safety and quality. Vietnamese consumers particularly value the practicality of these products, which offer advantages in terms of storage, preparation, and consumption—features that are especially attractive in urban areas where busy schedules limit the feasibility of traditional food preparation. Moreover, the acceptance of both local and imported processed agricultural products reflects a diversified consumer market that is increasingly receptive to global food trends. These developments highlight the robustness of Vietnam's food processing sector and its critical contribution to the nation's economic growth.

In recent years, such products, including dried fruits, cashew nuts, tea, coffee, and pre-processed vegetables, have become increasingly available through modern retail channels, such as supermarkets, specialty agricultural outlets, and local delicacy shops. These retail environments are typically designed to foster impulsive buying through strategic product placement, promotional signage, visual merchandising, and aesthetically engaging displays. Nevertheless, impulsive purchasing behavior associated with packaged agricultural goods, which are simultaneously utilitarian and culturally tied to health and tradition, has not been comprehensively examined in connection with POS marketing tactics in the Vietnamese retail context. Addressing this research gap not only advances theoretical understanding within consumer behavior literature but also provides actionable insights for agricultural enterprises aiming to enhance in-store marketing effectiveness and strengthen domestic consumption, thereby increasing the value-added potential of Vietnamese agricultural products. Therefore, the main purpose of this study is to elucidate the mechanisms by which POS marketing mix elements influence impulse buying behavior, drawing upon the Stimulus-Organism-Response (SOR) theoretical framework. It addresses a notable gap in the literature by examining the relationship between POS marketing and impulsive purchasing within the context of Vietnam's processed agricultural food sector—an emerging market in which such dynamics remain insufficiently explored. By focusing on this specific product category and market setting, the study contributes to a more nuanced understanding of impulse buying behavior in non-Western contexts and offers valuable insights for marketers aiming to enhance their strategies in this rapidly expanding sector. Specifically, this research advances the literature by investigating impulse buying behavior in the under-examined context of packaged agricultural products, analyzing the impact of POS marketing stimuli on such behavior, and providing actionable implications for marketers and retailers operating in the agricultural product industry.

Furthermore, despite a growing body of research on impulse buying, conceptual ambiguity persists in the literature, particularly in distinguishing between the urge to buy impulsively and actual impulsive purchasing behavior. While some studies use these terms inter-

changeably, others treat them as distinct constructs, one reflecting an internal psychological state and the other an observable consumer action. This inconsistency has led to ongoing debate and methodological variation in the definition, measurement, and interpretation of impulse buying. Consequently, a significant gap remains in understanding how POS marketing stimuli influence the transition from impulsive urge to actual purchase behavior, particularly in emerging markets such as Vietnam. Addressing this conceptual gap is essential for developing more precise consumer behavior models and informing more effective marketing strategies. These contributions help bridge an existing gap in consumer behavior research and offer novel theoretical and practical insights for both academic scholars and industry practitioners.

The study's structure is as follows. First, the theoretical background is outlined, accompanied by a review of relevant literature on point-of-sale marketing and impulse buying. This is followed by the development of the research framework and hypotheses. Next, the methodology section details the data collection process and the characteristics of the final sample. The results of the data analysis are subsequently presented and examined, with implications drawn from the findings. Finally, the study concludes with a reflective discussion of its limitations and recommendations for future research.

2. Theoretical Foundations and Hypotheses Development

2.1. Point of Sale Marketing and IB Behavior

According to Stern[17], the concept of impulsive buying refers to purchasing actions made without prior preparation. IB is considered an unexpected, spontaneous behavior driven by an immediate and intense urge to purchase, typically accompanied by strong emotions such as excitement and pleasure[10]. Researchers have since expanded this definition, emphasizing the role of emotions and the motivations driving purchasing behavior. Impulse buying is typically defined by unplanned, spontaneous purchases that occur in response to a stimulus, often involving emotional or cognitive reactions, or a combination of both[18]. IB tendency is largely driven by the instantaneous satisfaction it delivers to consumers[19]. Stern[17] classified impulse buying into four distinct categories, based on the extent to which emotional and rational factors influence the decision-making process. Pure impulse buying is characterized by highly emotional, spontaneous purchases with little to no cognitive deliberation. The remaining three types—reminder, suggested, and planned impulse buying—involve varying degrees of interplay between affective and rational elements. Suggested impulse buying typically occurs when a consumer encounters a product for the first time and experiences an immediate desire to purchase it. Planned impulse buying refers to situations in which a consumer has a general intention to make a purchase but is motivated to act by factors such as promotions or special offers at the point of sale. Meanwhile, reminder impulse buying happens when seeing a product triggers a memory of a previous need, prompting a purchase decision[17]. Pure impulse buying, characterized as spontaneous, emotionally driven, and unplanned, is particularly relevant to packaged agricultural products due to the intrinsic attributes of these goods and the retail settings in which they are typically sold. Both the product characteristics and the shopping environment can be strategically designed to elicit emotional responses from consumers. Items such as fruit juices, dried fruits, and organic snacks often employ visually appealing packaging, natural imagery, and messaging that emphasizes freshness or health benefits, all of which serve to trigger positive affective responses in line with hedonic consumption cues[14]. Moreover, given their relatively low cost and minimal perceived risk, these products encourage swift purchase decisions with little cognitive deliberation.

Previous studies have focused on various factors at the point of sale that influence impulse buying behavior, such as store atmospherics[3, 20, 21], sale promotions[15, 22, 23], and visual stimuli[20, 24, 25]. Several studies indicate that situational factors, such as the store environment and interactions with store employees, play a significant role in shaping impulsive buying behavior[12, 26]. While previous studies have identified various elements linked to point-of-sale marketing activi-

ties, these components often lack clear conceptual differentiation and remain somewhat ambiguous in the literature. Prior studies have tended to focus on components of POS marketing in isolation, resulting in inconsistencies in identifying the specific elements that define POS marketing. By understanding how POS marketing interacts, marketers can optimize these strategies that encourage impulse buying behavior. This study investigates the marketing factors at the point of sale that influence impulse buying behavior, including variables such as store environment, point-of-sale advertising, promotions, and sales personnel, as well as their effects on both the IB urge and actual IB behavior.

2.2. The Stimulus-Organism-Response (SOR) Model

The SOR model posits that external stimuli affect an individual's internal state, which subsequently influences specific behavioral responses [27, 28]. The model is structured around three components: stimulus (S), organism (O), and response (R). The stimulus stage encompasses external elements that impact an individual's perceptions and emotional states. The organism stage refers to the internal cognitive and affective mechanisms that interpret these external inputs, thereby influencing subsequent behavioral responses. Finally, the response (R) reflects the individual's behavior or decision, which can be either an approach (e.g., purchasing) or an avoidance (e.g., leaving the store). This response is the outcome of the interaction between the stimulus and the consumer's internal state [28, 29].

Scholars have widely utilized the SOR model to examine impulse buying in multiple contexts [9, 21, 30, 31]. These studies demonstrate how environmental stimuli, such as store ambiance, product placement, and promotional cues, affect consumers' psychological responses, which in turn lead to behavioral responses like impulsive purchases. Chang et al [21] used the SOR model to explore how retail environment factors directly and indirectly influence impulse buying. Similarly, Hashmi et al. [31] found that store elements, acting as external stimuli, evoke hedonic emotions in consumers, which in turn trigger IB behavior. In conclusion, the SOR model remains a widely used and valuable framework for studying the external factors that influence purchasing behavior, especially in the context of impulse buying [2, 28]. Building on this theoretical foundation, the present study employs the SOR framework to investigate how marketing factors at the retail point of sale (S) influence consumers' psychological responses (O), which subsequently lead to specific behavioral outcomes (R) within the packaged agricultural products sector.

2.3. Hypotheses Development

2.3.1. Store Environment and Impulse Buying Behavior

The impact of the retailer-controlled in-store environment on impulse buying behavior has been extensively documented in the literature [22, 32–37]. A growing body of research highlights that the store environment plays a pivotal role in influencing impulse purchasing decisions [6, 13, 22, 38]. Chang et al. [21] explored how ambient factors and design elements of the retail environment influence consumers' impulse buying behavior. Parsad et al. [29] demonstrated that aspects such as crowding, entertainment, lighting, aroma, and displays have a significant influence on impulse purchases. Recent studies have built upon these findings, with Durai and Stella [30] highlighting the positive effects of both store exterior and interior atmospherics, visual merchandising, layout, and displays on impulse buying. Similarly, Arthur et al. [23] identified factors such as in-store atmosphere, layout, sales personnel, promotional activities, and reference groups as crucial determinants of IB behavior. Subsequent studies have demonstrated that a well-designed store environment can enhance IB behavior [31, 32]. Therefore, we proposed the following hypotheses:

H1. *The store environment positively affects consumers' urge to buy impulsively.*

H2. *Store environment has a positive impact on actual impulse buying behavior.*

2.3.2. POS Advertising and Impulsive Buying Behavior

Youn and Faber conceptualized in-store marketing as stimuli employed by retailers to encourage con-

sumer purchases[7]. When consumers are attracted by compelling in-store advertising, they tend to engage in IB behavior[32]. Several studies have confirmed the role of POS advertising due to its significant informational and experiential impact within retail environments[24, 26, 33, 34].

Point-of-sale advertising is conceptualized as an in-store strategy designed to capture consumers' attention at the point of transaction, utilizing both static and digital display formats[35]. In other words, it is a form of communication used to influence the consumer's purchasing decision through various means, such as posters, brochures, or displays. The aim is to attract the public's attention, highlight the product's advantages, and create an environment conducive to sales. This advertising modality exerts its influence on consumer impulse buying behavior through two primary mechanisms: atmospheric effects and promotional effects[24, 35]. The atmospheric effect pertains to the overall ambiance of the retail environment, while the promotional effect arises from the reinforcement of other concurrent promotional efforts[24]. POS advertising represents a vital opportunity for retailers and manufacturers to directly engage with consumers at the critical point of purchase[24, 36]. Zhou and Wong found that in-store advertising posters not only communicate promotional information (such as discounts and offers) but also contribute to creating an enjoyable shopping experience, thereby stimulating impulsive purchases[24]. Silveira and Marreiros found that primary visual advertisements of brands at the point of sale have a significant impact on IB behavior[37]. Therefore, the present study proposes the following research hypotheses:

H3. *POS advertising positively impacts the urge to buy impulsively.*

H4. *POS advertising positively impacts actual impulsive buying behavior.*

2.3.3. Point of Sale Promotion and Impulsive Buying Behavior

Retailers stimulate impulse buying behavior through sales promotions[11]. Research has found that situational factors can arise from in-store stimuli, such as sales promotions, which influence impulse purchasing decisions[6, 11, 13, 22, 26, 38]. Bandyopadhyay et al.[11] found that monetary and non-monetary immediate promotions have a significant influence on the occurrence of impulse purchases. Furthermore, Khan et al. (2019) emphasize the growing importance of sales promotions as a powerful mechanism for shaping consumer perceptions and influencing purchasing decisions. Arthur et al.[23] and Katakam et al.[32] found promotional activities as determinants of impulsive purchasing behavior. Therefore, the study proposes the hypotheses:

H5. *POS sales promotion positively impacts the urge to buy impulsively.*

H6. *POS sales promotion positively impacts actual impulsive buying behavior.*

2.3.4. POS Salesperson and Impulsive Buying Behavior

Sales personnel are widely recognized as a pivotal factor in shaping customer decision-making[36]. Previous studies have confirmed that factors related to store employees can influence impulse buying behavior, including positive interactions[32], the friendliness of store employees[20], and the hospitality and assistance provided by store employees[39]. Parsad et al.[29] demonstrated that sales personnel in retail environments play a significant role in influencing impulse buying behavior. Atulkar and Kesari[40] posited that well-educated and trained salespeople, who provide accurate information and promptly address customer inquiries and concerns, can substantially enhance impulse buying behavior. Similarly, Arthur et al.[23] further corroborated this finding, identifying sales personnel as a key determinant of impulsive purchasing behavior. Based on this, the present research proposes hypotheses:

H7. *POS salesperson positively impacts the urge to buy impulsively.*

H8. *POS salesperson positively impacts actual impulsive buying behavior.*

2.3.5. Urge to Buy Impulsively and Actual Impulsive Buying Behavior

Beatty and Ferrell emphasize the importance of distinguishing between the 'urge to buy impulsively' and

the actual impulsive purchase[10]. Before making an impulse purchase, consumers often experience an urge to buy impulsively[10, 11]. The urge to buy impulsively is a feeling of desire triggered when a consumer encounters an item in a shopping environment, such as a particular product, model, or brand[13, 32]. This suggests that the urge to buy impulsively precedes the actual purchase, and is therefore expected to be positively related to impulsive buying behavior[10]. It is proposed that as consumers continue to browse in a store, the frequency and intensity of these urges increase, making impulsive purchases more likely[10]. In fact, during shopping trips, consumers frequently experience impulsive urges; they could fail to resist these urges and end up purchasing unplanned items without considering the potential consequences[10]. Numerous studies have confirmed that the urge to buy impulsively is positively associated with impulsive buying behavior[11, 13, 22, 32, 41, 42]. Therefore, it can be hypothesized that:

H9. *Urge to buy impulsively has a positive influence on impulse buying behavior (IB).*

2.3.6. Mediating Role of Urge to Buy Impulsively

Prior studies have commonly employed the urge to buy impulsively as a proxy for actual impulse purchasing behavior[43]. Nonetheless, empirical findings indicate that while this urge may reflect a heightened probability of making a purchase, it does not necessarily result in one. It has been suggested that as consumers move through a retail environment, they encounter a growing number of such urges, which in turn increases the chances of engaging in IB behavior[10]. Moreover, existing literature identifies the impulsive urge as both an antecedent and a mediating variable that plays a pivotal role in the decision to make an unplanned purchase[2, 12–14]. Based on this, the following hypothesis is proposed:

H10a. *Urge to buy impulsively mediates relationships between store environment and impulse buying behavior.*

H10b. *Urge to buy impulsively mediates relationships between POS Advertising and impulse buying behavior.*

H10c. *Urge to buy impulsively mediates relationships between POS Sales Promotion and impulse buying behavior.*

H10d. *Urge to buy impulsively mediates relationships between POS Salesperson and impulse buying behavior.*

Figure 1 illustrates all hypotheses concerning the relationships among the constructs.

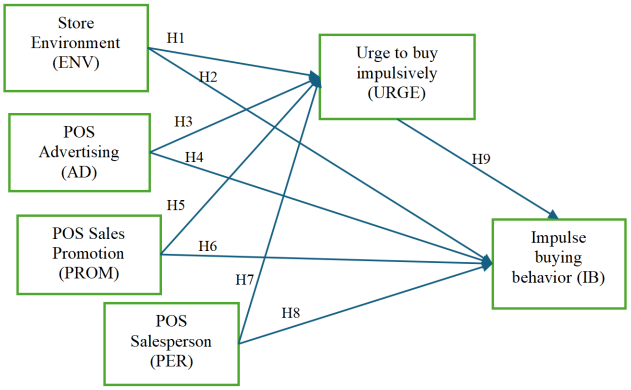

Figure 1. Proposed research model.

3. Methodology

3.1. Measurements

All constructs were measured using the scale developed by previous studies, including Store environment[3, 13], POS sales promotion[22], POS advertising[13, 24], POS salesperson[13, 22], urge to buy impulsively[10], and impulse buying behavior[3, 22]. To ensure content validity, the questionnaire was reviewed by 4 academics holding doctoral degrees in marketing, with expertise in retail management and consumer behavior. In this study, expert validity refers to the extent to which the questionnaire items accurately reflect the intended constructs and align with the research objectives.

Upon completion of the initial draft, four scholars with practical expertise in agricultural marketing management were invited to review the questionnaire repeatedly. These experts assessed the research framework, question types, and semantic clarity, providing feedback on the measurement constructs, layout, logical consistency, and item sequence. All items were assessed using five-point Likert scales, where 1 corresponded to "strongly disagree" and 5 to "strongly agree. The questionnaire was subsequently revised based on their feedback to ensure content validity through expert review. The constructs and items are detailed in **Table 1**.

Table 1. Constructs and items.

Constructs	Code	Items
Store environment [3, 13]	ENV1	The store X was clean and bright
	ENV2	The store X had appropriate music
	ENV3	The store X had an impressive interior design
	ENV4	The store X had attractive displays
	ENV5	It was easy to locate products/ merchandise in the store X
POS Sales promotion [22]	PROM1	I feel urged to buy products on promotion (free gifts, buy 1 get 1 free…)
	PROM2	I will buy unplanned products if there are price bargain
	PROM3	When I see good offers, I often buy more than needed
	PROM4	I often buy things if they are on sale
POS Salesperson [13, 22]	PER1	Store X employed professionally trained sales personnel
	PER2	The store X recruited knowledgeable salesperson
	PER3	The store X had friendly salesperson
	PER4	The store X had helpful salesperson
POS Advertising [3, 24]	AD1	Advertising at store X was attractive
	AD2	Advertising at store X was pleasant
	AD3	Advertising at store X was modern
	AD4	Advertising at store X was informative
Urge to impulsely purchase [10]	URGE1	I experienced sudden urges to purchase packaged agricultural products that I had not originally planned to buy on this trip
	URGE2	On this trip, I came across various packaged agricultural products that I wanted to buy
	URGE3	On this trip, I felt a sudden urge to buy packaged agricultural products
	URGE4	During this trip, I experienced the excitement of searching for packaged agricultural products
Impulse buying behavior [3, 22]	IB1	I bought packaged agricultural items I had not planned to purchase on this trip
	IB2	I ended up spending more money than I originally set out to spend on packaged agricultural products
	IB3	I bought more than what I had planned to buy packaged agricultural products
	IB4	I indulged in the impulsive purchase of packaged agricultural products

3.2. Sample and Data Collection

This study employed a quantitative research design to examine the influence of point-of-sale (POS) marketing on impulse buying behavior in the context of packaged agricultural products in Vietnam. The research was conducted in two stages: a preliminary quantitative phase and a main quantitative phase. The preliminary phase involved a pilot survey designed to refine questionnaire items, ensure the clarity and reliability of measurement scales, and validate the initial structure of the proposed model. Feedback from this phase informed revisions to the instrument prior to the full-scale data collection. Ho Chi Minh City was selected as the survey site representing Vietnam in this study due to its status as the country's largest economic and commercial center. The city is characterized by a high level of modern consumption and a well-developed network of supermarkets, convenience stores, and retail chains. It is also distinguished by its dynamism, openness to emerging consumer trends, and cultural diversity, which is attributable to the presence of residents from various regions across the country. These characteristics make Ho Chi Minh City a particularly suitable and representative context for investigating impulse buying behavior in modern retail settings, especially concerning pack-

aged agricultural products, which are gaining increasing prominence in this market.

In the preliminary phase, a purposive sampling strategy was employed, with self-administered questionnaires distributed to targeted respondents. The screening results indicate that women are the primary decision-makers in purchasing packaged products and consumer goods in most families. This finding aligns with consumer behavior patterns in Vietnam, where women often take on the responsibility of household shopping. Furthermore, it reflects a cultural characteristic typical of Eastern societies, in which women traditionally hold a central role in managing domestic household tasks. Therefore, a cross-sectional method was used to survey female consumers aged 18 and above, living in Ho Chi Minh City. According to Hair et al.[44], a minimum sample size of 50 is required, with a preference for samples exceeding 100. Bagozzi and Yi[45] further recommend that at least 150 responses are necessary to ensure analytical robustness. Similarly, Hatcher[46] suggests that the sample size for factor analysis should be at least five times the number of observed variables. Based on these guidelines, this study initially collected data from 160 participants. After discarding 5 incomplete or invalid responses, 150 valid questionnaires were retained, meeting the recommended threshold (25 items × 5). The pretest questionnaires were analyzed using item analysis, primarily to assess the discriminative power of the scales. The study adhered to DeVellis's reliability guidelines[47], which suggest that Cronbach's Alpha below 0.65 indicates low reliability. After eliminating problematic items, the remaining variables demonstrated optimal levels of reliability.

Following the preliminary research phase, the study proceeded to the formal quantitative research phase. where the research hypotheses and the proposed model were tested. The data in this stage were collected using a structured questionnaire administered to individuals with prior experience purchasing agricultural products from modern retail channels. A non-probability sampling method was employed, and the survey was conducted on-site with consumers at supermarkets and specialized agricultural stores in Ho Chi Minh City—settings where packaged agricultural goods are commonly displayed and promoted using various POS marketing strategies. The sample size was determined based on the guidelines for PLS-SEM. To ensure sufficient statistical power and reliable model estimation, a minimum of 300 observations was required[44, 47]. Interviewers were thoroughly recruited and trained in how to instruct respondents and administer the questionnaires carefully. An informed consent form was provided to participants, emphasizing the voluntary nature of their participation. Following the survey, all participants were debriefed and thanked for their involvement. To ensure an adequate sample size, 450 formal questionnaires were distributed, yielding 400 responses. After removing 82 incomplete questionnaires, 318 valid responses remained, yielding a valid response rate of 79.5%. The data analysis involved two statistical software packages. Initially, SPSS version 26 was employed to analyze demographic distributions and to check for common method bias (CMB). Following this, PLS-SEM was conducted using SmartPLS version 3.3.3 to evaluate the proposed hypotheses[48]. PLS-SEM is extensively used in marketing research to examine complex relationships among latent constructs, including mediation effects, and to determine the explained variance within variable relationships[49]. Additionally, PLS-SEM is well-suited for exploratory studies and research focused on prediction[50].

4. Results

4.1. Participant Information

The distribution of respondents by age reveals that 24.5% (78 respondents) are between 18 and 25 years old; 35.2% (112 respondents) are between 26 and 35 years old, 34.3% (109 respondents) are aged 36 to 45 years old, and 6% (19 respondent) is between 46 and 60 years old. In terms of education, 29.6% (94 respondents) have completed high school or its equivalent, 31.8% (101 respondents) possess a Bachelor's degree, and 38.7% (123 respondents) hold a master's degree. Regarding employment status, the results indicate a diverse distribution across various sectors. Specifically, 13.2% (42 respondents) are employed in government positions, 17.9% (57 respondents) occupy profes-

sional roles, and 16.0% (51 respondents) work in the private sector. Additionally, 13.5% (43 respondents) are involved in teaching, 17.0% (54 respondents) are engaged in business activities, and 22.3% (71 respondents) are employed in other occupations. Finally, the income distribution among the respondents shows variability across different ranges. Specifically, 15.4% (49 respondents) earn less than 5 million VND, 17.3% (55 respondents) earn between 5 and 9.9 million VND, and 17.0% (54 respondents) earn between 10 and 14.9 million VND. Furthermore, 19.5% (62 respondents) earn between 15 and 19.9 million VND, 16.4% (52 respondents) earn between 20 and 25 million VND, and 14.5% (46 respondents) earn above 25 million VND. The information concerning all participants is presented in **Table 2**.

Table 2. Characteristics of respondents.

Demographic Information		Frequency	Percent
Age	18-25 years	78	24.5%
	26-35 years	112	35.2%
	36-45 years	109	34.3%
	46-60 years	19	6.0%
Education	Pre Degree/ Plus Two	94	29.6%
	Bachelor's degrees	101	31.8%
	Master's degree	123	38.7%
Occupation	Government Employee	42	13.2%
	Professional	57	17.9%
	Private job	51	16.0%
	Teaching	43	13.5%
	Business	54	17.0%
	Others	71	22.3%
Income	Less than 5 million VND	49	15.4%
	5–9.9 million VND	55	17.3%
	10–14.9 million VND	54	17.0%
	15–19.9 million VND	62	19.5%
	20–25 million VND	52	16.4%
	Above 25 million VND	46	14.5%
	Total	318	100.0%

4.2. Common Method Bias

Given the cross-sectional nature of this study, CMB was evaluated using several approaches, including Harman's single-factor test[51]. An EFA was conducted employing the Harman single-factor technique to detect potential CMB. The analysis revealed that the first factor accounted for 31.6% of the total variance, which remained below the critical 50% threshold. Six factors were extracted based on eigenvalues exceeding 1.00. These results indicate that CMB is unlikely to affect the study's findings significantly.

4.3. Measurement Model Assessment

In this study, the results of statistical analyses are interpreted through the lens of the reliability and validity of the measurement model. Reliability is evaluated using indicators such as Indicator Reliability, Cronbach's Alpha (CA), and Composite Reliability (CR), all of which assess the internal consistency of the constructs[49]. Validity is examined in terms of convergent validity, typically measured by the Average Variance Extracted (AVE), and discriminant validity, which is assessed using the Fornell-Larcker criterion, cross-loadings, and the

Heterotrait-Monotrait ratio (HTMT) [49, 52].

Reliability Analysis: All observed variables exhibit outer loadings exceeding 0.708, with individual item loadings falling within the recommended range of 0.720 to 0.855. Therefore, the indicator reliability is considered satisfactory [49] (**Table 3**). Furthermore, the research findings also indicate that all reliability indicators, including CA and CR, exceed the commonly accepted threshold of 0.70, demonstrating strong internal consistency [49]. These results confirm that the measurement instruments employed in this study possess satisfactory internal reliability.

Table 3. Measurement model results.

Constructs	Items	Outer Loadings	Outer VIF Values	Cronbach's Alpha	Composite Reliability	AVE
Store Environment (ENV)	ENV1	0.777	1.741	0.863	0.901	0.646
	ENV2	0.816	1.991			
	ENV3	0.811	2.019			
	ENV4	0.789	1.752			
	ENV5	0.823	1.996			
POS Advertising (AD)	AD1	0.865	2.082	0.822	0.882	0.652
	AD2	0.843	1.960			
	AD3	0.720	1.475			
	AD4	0.794	1.660			
POS Sales Promotion (PROM)	PROM1	0.786	1.656	0.835	0.889	0.668
	PROM2	0.824	1.890			
	PROM3	0.798	1.780			
	PROM4	0.859	1.965			
POS Salesperson (PER)	PER1	0.800	1.773	0.837	0.891	0.671
	PER2	0.833	1.740			
	PER3	0.816	1.913			
	PER4	0.827	1.869			
Urge to buy impulsively (URGE)	URGE1	0.855	2.081	0.863	0.901	0.646
	URGE2	0.786	1.698			
	URGE3	0.853	2.092			
	URGE4	0.799	1.687			
Impulse buying behavior (IB))	IB1	0.828	1.920	0.842	0.894	0.679
	IB2	0.870	2.304			
	IB3	0.833	1.978			
	IB4	0.844	2.100			

Note: AVE=Average Variance Extracted.

Validity Assessment: All constructs exhibit AVE values exceeding the recommended threshold of 0.50, thereby satisfying the criteria for convergent validity [49]. This indicates that the measurement scales effectively capture the underlying constructs. **Table 3** summarizes the evaluation of the measurement model, including indicator reliability, scale reliability, convergent validity, and outer Variance Inflation Factor (VIF) values. The analysis of outer VIF values reveals no signs of multicollinearity among the observed variables.

To assess the discriminant validity of the measurement scales, the Fornell-Larcker criterion was applied [49, 52]. The square roots of the AVE values for each construct are greater than their corresponding inter-construct correlations, indicating that the scales meet the requirements for discriminant validity (Table 4). In addition, discriminant validity was further evaluated using the HTMT. As presented in Table 5, all HTMT values are below the conservative threshold of 0.85 [53], thereby confirming adequate discriminant validity among all constructs.

Table 4. Fornell-Larcker criterion results.

Constructs	IB	AD	PER	PROM	ENV	URGE
Impulse buying behavior (IB)	**0.844**					
POS Advertising (AD)	0.414	**0.808**				
POS Salesperson (PER)	0.449	0.198	**0.819**			
POS Sales Promotion (PROM)	0.466	0.219	0.267	**0.817**		
Store Environment (ENV)	0.454	0.191	0.191	0.242	**0.804**	
Urge to buy impulsively (URGE)	0.706	0.416	0.404	0.463	0.482	**0.824**

Note: The square root of AVE values are shown as the bold values in the diagonal cells.

Table 5. Heterotrait-Monotrait Ratio (HTMT) results.

Constructs	IB	AD	PER	PROM	ENV
Impulse buying behavior (IB)					
POS Advertising (AD)	0.488				
POS Salesperson (PER)	0.522	0.244			
POS Sales Promotion (PROM)	0.542	0.255	0.310		
Store Environment (ENV)	0.523	0.221	0.224	0.288	
Urge to buy impulsively (URGE)	0.825	0.491	0.473	0.549	0.562

4.4. Structural Model and Hypothes Testing

To examine the proposed hypotheses, this study employs PLS-SEM, utilizing a bootstrap resampling technique with 5,000 iterations. The analysis follows established evaluation criteria, including the assessment of multicollinearity, the estimation of path coefficients (β) from exogenous to endogenous variables, and the testing of their statistical significance [44, 49]. Additionally, the model's explanatory power is evaluated through the coefficient of determination (R^2), while effect sizes (f^2) are calculated to assess the relative influence of each predictor variable [49]. The key findings from the analysis are presented below:

Table 6. Inner VIF values.

Constructs	Impulse Buying Behavior (IB)	Urge to Buy Impulsively (URGE)
POS Advertising (AD)	1.212	1.092
POS Salesperson (PER)	1.208	1.116
POS Sales Promotion (PROM)	1.288	1.148
Store Environment (ENV)	1.303	1.100
Urge to buy impulsively (URGE)	1.908	

Multicollinearity: Multicollinearity was evaluated by examining the VIF values of the latent variables. According to the criteria, if all VIF values from a full collinearity test are equal to or below 3.3, the model is considered free from standard method bias [54]. As shown in **Table 6**, the VIF values for all predictor paths ranged from 1.109 to 1.908, remaining well under the 3.3 threshold. Therefore, collinearity among the predictors was not a concern in this dataset.

Estimation of Impact Coefficients: The estimated Beta (β) coefficients indicate the magnitude of the relationship between exogenous and endogenous variables, as well as the direction of the effect (either positive or negative). The results of the analysis showed support for all the proposed hypotheses (**Table 7**).

According to **Table 7**, the store environment demonstrated a significant positive effect on the urge to buy impulsively (β = 0.326; p = 0.000), thus supporting hypothesis H1. Additionally, the influence of store environment on impulse buying behavior (IB) was both positive and significant (β = 0.147; p = 0.001), confirming H2. Similarly, POS advertising exhibited positive impacts on both the urge to buy impulsively (URGE) (β = 0.251; p = 0.000) and impulse buying behavior (IB) (β = 0.135; p = 0.000), supporting hypotheses H3 and H4. The results also revealed that POS sales promotion had a pos-

itive effect on the urge to buy impulsively (β = 0.271; p = 0.000) and impulse buying behavior (IB) (β = 0.150; p = 0.001), thereby supporting H5 and H6. Furthermore, hypotheses H7 and H8 were supported, as POS salesperson showed a positive impact on both urge to buy impulsively (URGE) (β = 0.220; p = 0.000) and impulse buying behavior (IB) (β = 0.177; p = 0.000). Finally, the urge to buy impulsively was found to have a strong positive effect on impulse buying behavior (β = 0.438; p = 0.000), confirming H9.

Table 7. Hypotheses testing results.

Paths	Original Sample (O)	Sample Mean (M)	T Statistics (|O/STDEV|)	*p* Values	Results
Direct Effects					
H1: ENV -> URGE	0.326	0.328	7.908	0.000	Supported
H2: ENV -> IB	0.147	0.147	3.416	0.001	Supported
H3: AD -> URGE	0.251	0.251	5.558	0.000	Supported
H4: AD -> IB	0.135	0.136	3.521	0.000	Supported
H5: PROM -> URGE	0.271	0.271	6.286	0.000	Supported
H6: PROM -> IB	0.150	0.152	3.260	0.001	Supported
H7: PER -> URGE	0.220	0.220	5.802	0.000	Supported
H8: PER) -> IB	0.177	0.179	4.425	0.000	Supported
H9: URGE -> IB	0.438	0.435	8.602	0.000	Supported
Indirect Effects					
H10a: ENV -> URGE -> IB	0.143	0.142	5.787	0.000	Supported
H10b: AD -> URGE -> IB	0.110	0.109	4.849	0.000	Supported
H10c: PROM -> URGE -> IB	0.119	0.118	4.810	0.000	Supported
H10d: PER -> URGE -> IB	0.096	0.096	4.710	0.000	Supported
Total Effects					
ENV -> IB	0.290	0.290	7.725	0.000	Supported
AD -> IB	0.245	0.245	5.284	0.000	Supported
PROM -> IB	0.269	0.270	6.241	0.000	Supported
PER -> IB	0.274	0.274	6.745	0.000	Supported

Additionally, the analysis results showed that the urge to buy impulsively plays a mediating role in the relationship between the four components of POS marketing and IB behavior, exhibiting a significant indirect effect with partial mediation. The analysis suggests that the urge to buy impulsively functions as a crucial mediator in the relationship between store environment and IB behavior (β = 0.143; p = 0.000), POS advertising and IB behavior (β = 0.110; p = 0.000), POS sales promotion and IB behavior (β = 0.119; p = 0.000), and POS salesperson and IB behavior (β = 0.096; p = 0.000). Specifically, the study indicates that these POS marketing factors affect customers' emotional and psychological responses, thereby creating an impulsive urge to purchase. This urge, in turn, drives actual IB behavior. However, the mediation effect is partial, meaning that although the urge to buy impulsively explains part of the relationship, the POS marketing components still exert a direct influence on impulse buying behavior, independent of the mediator. The significant indirect effect underscores that POS marketing components contribute to impulse buying not only by triggering the urge to purchase impulsively but also through other direct means. This finding suggests that POS marketing has a dual impact, influencing impulse purchases both through emotional triggers and direct behavioral cues.

Through the standardized regression coefficient (β) (**Table 7**), it is evident that the store environment has the strongest and most significant influence on consumers' impulse buying behavior of packaged agricultural products (β = 0.290; p = 0.000). This is followed by the impact of POS salesperson, which also shows a considerable but comparatively weaker effect (β = 0.274; p = 0.000). POS promotional activities rank third, exerting a moderate influence (β = 0.269; p = 0.000, while POS advertising has the least impact among the examined variables (β = 0.245, p = 0.000), indicating a relatively weaker role in triggering impulsive purchases in

this context.

R^2 and f^2 Coefficients: The R^2 value indicates the proportion of variance in the endogenous variable that is accounted for by the exogenous variables. Thresholds of 0.75, 0.5, and 0.25 are interpreted as representing substantial, moderate, and weak predictive power, respectively [49]. In this study, the adjusted R^2 values for the endogenous constructs URGE and IB are 0.469 and 0.575, respectively (**Table 8**). This suggests that the independent variables explain 46.9% of the variance in URGE and 57.5% of the variance in IB, reflecting a moderate level of predictive capability. Based on Cohen's criteria, f^2 values of 0.02, 0.15, and 0.35 signify small, medium, and large effect sizes, respectively [54]. The effect size analysis reveals that the impacts of ENV, AD, and PROM on URGE are moderate; the indirect effects of ENV, AD, and PROM on IB via URGE are small; the effect of URGE on IB is moderate; and the influence of PER on both URGE and IB is small (**Table 9**).

Table 8. R^2 Adjusted R^2 and Q^2 coefficients.

Endogenous variables	R Square	R Square Adjusted	Q^2 (=1-SSE/SSO)
Urge to buy impulsively (URGE)	0.476	0.469	0.315
Impulse buying behavior (IB)	0.581	0.575	0.408

Table 9. f^2 coefficients.

Paths	f^2	Effect Size
Store Environment (ENV) Urge to buy impulsively (URGE)	0.184	Moderate
Store Environment (ENV) Impulse buying behavior (IB)	0.040	Weak
POS Advertising (AD) Urge to buy impulsively (URGE)	0.110	Moderate
POS Advertising (AD) Impulse buying behavior (IB)	0.036	Weak
POS Sales Promotion (PROM) Urge to buy impulsively (URGE)	0.122	Moderate
POS Sales Promotion (PROM) Impulse buying behavior (IB)	0.042	Weak
POS Salesperson (PER) Urge to buy impulsively (URGE)	0.083	Weak
POS Salesperson (PER) Impulse buying behavior (IB)	0.062	Weak
Urge to buy impulsively (URGE) Impulse buying behavior (IB)	0.240	Moderate

5. Discussion

First, we found that the store environment stimulus has a positive influence on UGRE and IB in physical stores (H1 and H2 were supported). These findings suggest that the store environment substantially interferes with consumers' cognitive state and purchase impulse decisions at the retail point of sale. Confirming previous research, the store environment's impact on impulse buying behavior has been extensively confirmed in the literature [6, 13, 22, 32, 38]. These results support the earlier findings of previous works [3, 13, 21–23, 29–32]. This result highlights the significant role that store atmosphere and environment play in influencing retailers, shaping consumer behavior by fostering impulse purchases through a sensory-rich and emotionally engaging experience. By strategically combining visual, auditory, and olfactory cues, along with meticulously planned store layouts and product placements, retailers can effectively guide shoppers toward making spontaneous, unplanned purchases. The store atmosphere engages the senses in ways that elicit emotional responses, such as excitement, comfort, exclusivity, and a sense of urgency. For example, bright colors and bold signage can generate a sense of excitement and urgency, prompting shoppers to act swiftly in response to promotions. In contrast, soft lighting and soothing music can create a sense of comfort, encouraging consumers to relax and explore additional items, thereby increasing the likelihood of impulse purchases. Furthermore, appealing scents, such as the aroma of fresh coffee or baked goods, enhance the overall shopping experience and evoke positive emotions, which may encourage unplanned purchases. The strategic placement of products is also crucial in influencing consumer behavior. For instance, items placed in high-traffic areas, such as near checkout counters or end-of-aisle displays, are more likely to attract attention, triggering spontaneous purchasing decisions. Similarly, limited-time of-

fers or products presented with a sense of scarcity can instill a sense of urgency, prompting consumers to act swiftly to avoid missing out. This deliberate orchestration of environmental factors—sight, sound, scent, and store design—enables retailers to boost sales and influence consumer behavior by making the shopping environment more engaging and persuasive. When shoppers feel emotionally connected or are immersed in an atmosphere that stimulates excitement or urgency, they are more likely to make purchases outside of their initial intentions, thereby enhancing the store's overall profitability.

Additionally, H3 and H4 were supported. This finding confirms previous studies that have examined the role of POS advertising due to its significant impact within retail environments[24, 26, 32–34, 37]. The findings confirm that POS advertisements of brands at the point of sale have a significant impact on unplanned purchasing behavior. POS advertising refers to promotional materials, such as signage, displays, and digital ads, placed strategically near the checkout or product areas, designed to capture shoppers' attention as they make purchasing decisions. This study highlights how these advertisements can trigger spontaneous buying decisions, leading consumers to purchase items they did not initially intend to buy. To gain deeper insights into this phenomenon, we conducted in-depth interviews with respondents about the impact of POS advertisements on their unplanned purchasing behavior. This approach allowed us to understand the underlying mechanisms driving these impulsive decisions. Several factors contribute to this effect, including the visibility and timing of the ads, the emotional appeal of the messaging, and the perceived value or urgency conveyed through promotions such as discounts or limited-time offers. The presence of POS ads also creates a sense of convenience, as they often promote products directly related to items the consumer is already considering or has already purchased. Moreover, the findings suggest that such advertisements tap into psychological triggers, such as impulse buying and the fear of missing out (FOMO), compelling consumers to make purchases on the spot. Consumers, when faced with an ad promoting a time-sensitive offer or a product they had not previously considered, may act impulsively, fearing they might regret missing the opportunity. This can create a quick emotional connection that overrides their original purchasing plan. As a result, retailers and brands can leverage these POS marketing tactics to increase sales and boost the overall profitability of their offerings, especially in high-traffic areas or near checkout points where consumers are more likely to engage with these ads in a moment of decision-making. Through this strategic placement and the careful crafting of messages, retailers can maximize the chances of influencing consumer behavior and driving sales.

Additionally, the statistical results support H5 and H6. These results suggest that sales promotions serve as incentives that heighten consumers' desire for products, leading to increased IB behavior. This supports the findings of Arthur et al., who identified promotional activities as key factors influencing IB[23]. The result also confirms previous findings[11, 13, 22, 26, 38], revealing that POS sales promotions offering immediate rewards, such as price discounts and reductions, strongly prompt impulsive buying. Sales promotions play a critical role in driving impulsive buying behavior by creating conditions that trigger immediate, unplanned purchasing decisions. These promotions, which typically involve discounts, limited-time offers, bundle deals, or gifts, function as potent external stimuli that significantly influence consumer decision-making at the point of sale. From a psychological perspective, sales promotions operate by eliciting emotions such as urgency, excitement, and the FOMO. When consumers perceive a limited-time offer or a substantial discount, they often experience a sense of pressure to act quickly, even if the purchase was not initially part of their intended shopping list. This perceived urgency can override rational decision-making processes, thereby encouraging impulsive purchases. Moreover, the perception of obtaining a "good deal" or added value through a promotion increases the likelihood of spontaneous buying, as consumers are inclined to make decisions that align with their desire for immediate gratification. Additionally, sales promotions may reduce the cognitive load involved in decision-making. By offering clear and immediate benefits, such as discounts or bonus products, these promotions simplify the purchasing process and lower the barriers to

purchase. This reduction in decision-making complexity can prompt consumers to buy products they had not originally planned to purchase, particularly when they are already in a buying mindset or when the promotion is tied to a product they are already considering.

The results also confirm the positive effects of POS salesperson on URGE and impulse buying (H7 and H8). The support of H7 and H8 aligns with previous studies, which confirm that sales personnel are widely recognized as a pivotal factor in shaping customers' impulse buying behavior[23, 29]. These findings confirm that the role of a salesperson in influencing URGE and IB behavior is significant, as salespeople play a key role in triggering spontaneous purchasing behavior. They can effectively leverage various psychological triggers and communication strategies to prompt customers into making unplanned purchases. By utilizing techniques such as creating a sense of urgency, offering personalized recommendations, establishing emotional connections, and providing social proof, salespeople can significantly enhance the likelihood of impulse buying. These strategies tap into the underlying psychological mechanisms of consumer decision-making, encouraging immediate and often emotional purchasing decisions that were not initially part of the consumer's intention.

The results also demonstrate that the urge to buy impulsively (URGE) significantly predicts impulse buying behavior (IB), supporting hypothesis H9. This aligns with the recognized importance of differentiating between the urge to purchase impulsively and the actual act of impulsive buying[10]. Consequently, our findings build upon existing literature by enhancing the understanding of the pathway leading to IB[10, 11], and corroborate multiple studies that have established a positive relationship between the URGE and IB behavior[11, 13, 22, 32, 41, 42]. The urge to buy impulsively is positively correlated with impulsive buying behavior, suggesting that when consumers experience a strong desire to make a purchase, they are more likely to engage in unplanned, spontaneous buying decisions. Emotional or psychological triggers, such as excitement, urgency, or the desire for immediate gratification typically drive this urge. As these emotions are heightened, consumers may bypass rational decision-making processes and act on impulse. The relationship between urge and IB behavior indicates that as the urge to purchase intensifies, the likelihood of IB also increases. Several factors, including store atmosphere, promotional offers, product placement, and the persuasive influence of salespeople can influence this connection. In environments where emotional and psychological cues are particularly pronounced, consumers are more prone to acting on their impulses, leading to unplanned purchases. Thus, understanding and leveraging this connection is essential for retailers aiming to boost sales through impulse-driven consumer behavior.

This study employed the urge to buy impulsively (UGRE) as a sequential mediator to examine the relationship between four components of POS marketing and impulse buying behavior (IB), with hypotheses H10a, H10b, H10c, and H10d all supported. These results align with the SOR model[27] and build on Beatty and Ferrell's[10] work, which highlights the mediating role of UGRE. Prior research has identified UGRE as both a precursor and a mediator that facilitates the ultimate decision to make an impulse purchase[2, 12–14]. By incorporating UGRE as a sequential mediator, this study explores how different POS marketing elements influence impulsive buying through internal cognitive and emotional responses. This approach reveals the underlying processes linking specific POS marketing tactics such as store environment, sales promotions, advertising, and salesperson interactions to spontaneous consumer purchasing behavior. The findings offer a clearer understanding of the causal pathways in consumer decision-making and emphasize the critical mediating function of UGRE in the relationship between marketing stimuli and unplanned purchases. Ultimately, this research provides valuable insights for retailers on how to strategically design and implement POS marketing initiatives to encourage impulse buying effectively.

Previous studies have consistently emphasized the strong impact of traditional marketing communications, particularly advertising and sales promotions, on consumers' impulse buying behavior. These studies, conducted primarily in the context of fast-moving consumer goods (FMCG) and cosmetics, found that promotional campaigns and visual advertising stimuli were primary

triggers of unplanned purchases, especially when combined with hedonic motivation and emotional arousal. However, the present study, which focuses on packaged agricultural products, reveals a distinct pattern. While POS promotions and advertising still exert a positive influence, they are less impactful than more immediate experiential elements such as the retail environment and salesperson interactions. Specifically, the in-store environment was found to have the strongest effect on impulse buying, followed by engagement with sales personnel at the point of sale. This divergence may be attributed to the unique characteristics of agricultural products, which are often associated with freshness, trustworthiness, and sensory cues (e.g., aroma, texture, and display aesthetics). In this category, consumers tend to rely more heavily on physical stimuli and interpersonal communication, particularly in markets where brand loyalty is weak or product standardization is low. Real-time guidance from sales staff and the overall sensory appeal of the store likely reduce cognitive evaluation, thereby increasing the likelihood of impulsive decisions.

6. Conclusion and Implications

This study aimed to examine the impact of POS marketing on the urge to buy impulsively (URGE) and actual impulse buying behavior among consumers in Vietnam's processed agricultural products industry. This research makes a meaningful contribution to the body of knowledge on consumer behavior and retail marketing in several key ways. To begin with, it advances the application of the SOR theoretical model within the relatively understudied domain of Vietnam's packaged agricultural product market—an emerging sector where the influence of POS marketing remains insufficiently examined. Additionally, the study introduces a conceptual refinement by distinguishing between the psychological urge to make impulsive purchases (URGE) and the actual enactment of impulse buying behavior. By empirically investigating the linkage between these two constructs, the research helps to clarify a previously ambiguous area in the literature. It sheds light on the mediating role of internal cognitive states in the consumer decision-making process. Furthermore, the study empirically validates four prominent POS marketing stimuli—store environment, personal selling staff, promotional incentives, and in-store advertising—as influential factors that stimulate impulsive purchase behavior within modern retail settings. These insights provide practical value for practitioners by offering strategic direction for designing and executing of effective retail marketing tactics. Overall, the study not only contributes to theoretical development but also supports evidence-based decision-making for businesses navigating consumer markets in culturally dynamic and economically evolving contexts.

Based on the empirical evidence, the determinants of impulsive buying for packaged agricultural products can be ranked, in order of diminishing influence, as follows: (1) the in-store (retail) environment, (2) the POS salesperson, (3) the POS promotions, and (4) the POS advertising. These results indicate that impulsive buying behaviour is shaped more by the immediate shopping experience than by conventional marketing communications. This reinforces the strategic importance of investing in sensory-rich retail environments and well-trained POS staff who can enhance consumers' emotional engagement and trust, especially in emerging markets like Vietnam, where in-person interactions continue to play a pivotal role in the buying process. The findings suggest several important implications for POS marketing strategies within the agricultural retail sector in Vietnam, particularly concerning how to stimulate impulse buying behavior effectively.

Enhancing the Retail Environment: Retailers should prioritize the development of aesthetically pleasing, clean, and sensory-rich store environments that convey freshness, authenticity, and high-quality products. Key environmental attributes, such as well-lit and healthy conditions, ambient background music, thoughtfully designed interiors, and visually appealing product displays, were found to exert a significant influence on consumers' spontaneous purchasing behavior. Furthermore, the ease with which products can be located contributes to a seamless and satisfying shopping experience, thereby increasing the propensity for unplanned purchases.

Recruiting and Training Frontline Sales Staff:

Sales personnel emerged as the second most influential factor in shaping impulse buying behavior. Accordingly, investments in comprehensive training programs that enhance product expertise, interpersonal communication, and customer engagement skills are essential. Respondents indicated that the presence of professionally trained, knowledgeable, friendly, and helpful sales staff fostered trust and emotional rapport, which in turn facilitated impulsive purchase decisions.

Developing POS Promotion Strategies: While promotional activities remain a pertinent and effective marketing lever, their impact is significantly heightened when they are integrated into the overall in-store experience. The study revealed that promotional techniques, such as gifts, "buy one get one free" offers, and price discounts, elicited a strong urge to buy among consumers. A notable proportion of participants reported purchasing more than originally intended or making unplanned purchases upon encountering attractive promotional offers. Therefore, the design and implementation of promotional strategies should align with the store's emotional and sensory environment to maximize their effect.

Focusing on POS Advertising: Although POS advertising demonstrated the least influence among the variables examined, its strategic potential should not be underestimated. Participants responded positively to advertising perceived as attractive, pleasant, modern, and informative, suggesting that traditional formats may benefit from incorporating interactive, sensory-based, or context-aware elements. In the agricultural retail setting, where authenticity, sensory engagement, and consumer trust are particularly valued—POS advertising should be carefully crafted to reinforce these dimensions and support impulse buying behavior.

7. Limitations

Despite this study's contributions, it presents limitations that offer directions for future research. Firstly, demographic factors such as age, gender, and income—previously shown to affect impulse buying behavior—were not included in the analysis. Future research should investigate the moderating effects of these variables, particularly income, on the relationship between sales promotions and the urge to buy. Secondly, although the survey methodology was appropriate, experimental designs manipulating promotional cues could yield more robust causal inferences. Examining social shopping contexts, such as shopping with companions, represents another promising avenue for exploration. Thirdly, the present study focused exclusively on pure impulse buying; exploring other types of impulse buying could reveal behavioral distinctions. Additional factors such as product availability and time constraints, which were not addressed here, also warrant further investigation. Moreover, since the sample was confined to Ho Chi Minh City, expanding to other regions would enhance the generalizability of the findings. Finally, integrating socio-cultural variables could deepen understanding of how cultural factors moderate impulse buying behavior across diverse contexts.

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Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki and in compliance with the current regulations on academic integrity in scientific and technological activities of the University of Finance – Marketing, as stipulated in Decision No. 473/QĐ-UFM-QLKHHTQT, dated March 6, 2025.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability

The data presented in this study are available on request from the author.

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Conflicts of Interest

The author disclosed no conflict of interest.

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