

# The Influence of Visual Communication and Store Atmospheric on Impulse Buying Behavior in Convenience Stores: Evidence from Indonesia

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**ABSTRACT-** Impulse buying behavior in convenience stores is increasingly relevant to be studied as the competition in the retail industry in Indonesia increases. This study aims to analyze the impact of visual communication and store atmospheric on consumer impulse buying behavior in convenience stores in Indonesia. Researchers adopted a quantitative methodology centered on surveys. Precisely 138 students in the 2024 class at Balitar Islamic University's Faculty of Social and Political Sciences formed the full population. From this group, 103 participants were selected using the Slovin equation through disproportionate stratified random sampling. Data were collected primarily with a Likert-scale questionnaire spanning five response levels. Prior to executing multiple linear regression, the team completed tests for validity, reliability, and classical assumptions. Visual communication emerged with a notable positive effect on impulse buying behavior its regression coefficient stood at 0.268. Store atmospheric proved more influential, registering 0.334. The combined influence shone through an F-value of 12.385 during simultaneous analysis, affirming overall significance. Such synergy in managing visual merchandising and ambient store conditions builds a compelling ecosystem of triggers. Consumers in Indonesia's convenience outlets respond with heightened spontaneous purchases.

**KEYWORDS-** Visual Communication; Store Atmospheric; Impulse Buying Behavior; Visual Merchandising; Retail Indonesia.

## I. INTRODUCTION

The retail landscape, with a spotlight on convenience outlets, demonstrates vigorous expansion against fierce competition for shopper allegiance. Buyer conduct hinges on the in-store experience. Unplanned buying surges from these triggers [1]. Revenue rises when environmental prompts ignite spontaneity.

Visual cues, delivered via merchandising strategies, steer abrupt purchasing. Eye-catching product presentations and stylistic layouts seize attention. Product views solidify rapidly [2]. Feelings ignite. Choices emerge instinctively.

Ambient elements in stores illumination patterns, layout configurations, auditory backdrops, and holistic mood stimulate multiple senses. Affective bonds strengthen profoundly. Sudden buy impulses intensify [3]. Thoughtfully engineered spaces yield enjoyable visits. While studies proliferate in other contexts, scant attention has graced Indonesian minimarts. Therefore, this study aims to analyze the influence of visual communication and store atmospheric on impulse buying behavior in convenience stores in Indonesia.

Based on the background, the formulation of the problem is concluded as follows: (1) Does visual communication have a positive effect on impulse buying behavior in convenience stores in Indonesia?, (2) Does store atmospheric have a positive effect on impulse buying behavior in convenience stores in Indonesia?, (3) Does visual communication and store atmospheric simultaneously have an effect on impulse buying behavior in convenience stores in Indonesia?

This study aims to analyze the influence of visual communication on impulse buying behavior in convenience stores in Indonesia. In addition, this study also aims to analyze the influence of store atmospheric on impulse buying behavior in convenience stores in Indonesia. Furthermore, this study aims to analyze the influence of visual communication and store atmospheric simultaneously on impulse buying behavior in convenience stores in. Theoretically, this research is expected to contribute to the development of marketing management science, especially in understanding the role of visual communication and store atmospheric as environmental stimuli that influence consumer behavior, especially impulse buying behavior in the context of convenience stores in Indonesia. Practically, the results of this study are expected to be a consideration for retail business actors, especially convenience store managers, in designing visual merchandising strategies and more effective store atmosphere management to encourage increased sales through consumer impulse purchases. In addition, this study is also expected to be a reference for future researchers who want to study more deeply about

the factors that influence impulse buying behavior in the retail industry in Indonesia.

## II. LITERATURE REVIEW

### A. Visual Communication and Visual Merchandising

Visual communication in the retail context encompasses all deliberate efforts to convey messages to consumers through elements perceived by the sense of sight. In the convenience store environment, this is realized through visual merchandising practices covering product displays, store aesthetic design, promotional materials, and layouts crafted to attract consumer attention and stimulate purchasing responses. Basu et al. argued that visual merchandising and store atmospherics represent two complementary domains forming a comprehensive environmental stimulus ecosystem, where product-driven display functions work in conjunction with atmospheric elements to shape consumer behavior holistically [4]. This integrated understanding affirms that visual element management cannot be separated from the broader store environment context, as both dimensions collectively determine the quality of stimuli received by consumers during their shopping journey.

### A. Store Atmospherics

Store atmospherics refers to the totality of a store's deliberately designed physical environment intended to shape consumer perceptions, emotions, and behavioral responses during the shopping process. Core elements encompassed within this construct include lighting, spatial layout, background music, ambient scent, and overall comfort conditions of the store interior. Lyu et al. demonstrated that store atmosphere has evolved considerably beyond traditional brick-and-mortar formats into diverse alternative retail commerce channels, including two-dimensional online, three-dimensional online, mobile, and virtual and augmented reality environments, each carrying distinct components, antecedents, and behavioral consequences [5]. This evolution reinforces the understanding that atmospheric elements exert extensive and multidimensional influence across all dimensions of consumer response, making store atmospherics one of the most strategically significant variables in contemporary retail management.

### B. Digital Transformation and Consumer Experience

The advancement of digital technology has profoundly reshaped how retail environments engage consumers, introducing innovative tools that extend the reach of visual and atmospheric stimuli beyond physical boundaries. Maknunah revealed that Augmented Reality (AR) has emerged as a transformative technology in digital marketing, significantly enhancing consumer experiences through personalized interactions, immersive engagement, and seamless integration of physical and digital platforms, thereby fostering consumer trust and loyalty toward brands. Furthermore, Maknunah emphasized that AR enables consumers to visualize products in real-time contexts, such as virtually trying on items or previewing products in their own environments, which reduces purchase uncertainty and strengthens emotional connections with brands [6]. These findings hold strong relevance for the convenience store context, where the

integration of digital visual stimuli into the physical retail environment represents a promising frontier for enriching the consumer shopping experience and amplifying the effectiveness of visual communication strategies.

### C. Impulse Buying Behavior

Impulse buying behavior refers to purchasing actions that occur suddenly and without prior planning, generally triggered by environmental stimuli encountered by consumers during the shopping process. Redine et al. defined impulse buying as an unplanned and unintended purchase executed rapidly and on the spot, with minimal deliberation, preceded by stimulus exposure and accompanied by a sudden and powerful urge to buy [7]. Furthermore, that systematic review affirmed that hedonic emotions and affective motivations serve as primary characteristics distinguishing impulsive purchases from planned or habitual buying behavior, highlighting the critical role of emotional states in the formation of spontaneous purchase decisions within retail environments.

### D. The Influence of Visual Merchandising on Impulse Buying

Empirical evidence consistently demonstrates that visual merchandising elements carry the capacity to evoke emotional responses that ultimately drive spontaneous purchasing decisions among consumers. Sahari et al. confirmed that visual merchandising implemented in hypermarket settings significantly influences consumer impulse buying behavior through the mediating mechanism of self-control, grounded in the Stimulus-Organism-Response (S-O-R) theoretical framework originally developed by Mehrabian and Russell [2]. The findings of that study further indicated that demographic variables such as age and cultural background moderate the relationship between visual merchandising and consumers' impulsive purchasing tendencies, underscoring the importance of designing visual stimuli that are contextually sensitive to the characteristics of the target consumer segment.

### E. The Influence of Store Atmospherics on Impulse Buying

An optimally designed store atmosphere generates affective consumer conditions conducive to the occurrence of unplanned purchases. Bastianpillai and Marasinghe confirmed that situational store elements function as stimuli activating consumers' emotional impulses toward impulse buying responses, whereby well-designed retail environments evoke positive emotions that reduce consumers' cognitive resistance to unplanned purchases [8]. In the broader context of digital retail, Maknunah further demonstrated that AR's capacity to deliver cross-channel experiences by bridging physical and digital platforms creates a cohesive brand environment that reinforces consumer confidence and satisfaction, with AR-enabled applications providing consistent visual messaging that strengthens consumer loyalty [6]. This principle affirms that the synergistic combination of physical store atmospherics and technology-driven visual stimuli forms a more compelling and effective stimulus ecosystem, capable of driving impulse buying behavior in a sustained and strategically optimized manner.

### III. METHODS

This study uses a quantitative approach with a survey method to analyze the influence of visual communication and store atmospherics on impulse buying behavior. One hundred thirty-eight students from the 2024 intake in Balitar Islamic University's Faculty of Social and Political Sciences constituted the research population. Applying Slovin's formula with a 5% error tolerance produced 103 participants. Researchers implemented disproportionate stratified random sampling by study program. Every segment gained fair inclusion. A five-point Likert questionnaire captured responses.

Visual communication gets assessed via five markers captivating product setups, bold aesthetic choices, straightforward info delivery, compelling promo visuals, and mood-evoking imagery. These draw from visual merchandising principles, which stress visual stimuli's power to seize attention and evoke responses [2], [9]. Five facets define store atmospherics: soothing lights, tidy configurations, harmonious audio, appealing fragrances, and a homely feel. Retail's sensory interplay guides this approach, molding consumer emotions and impressions [3], [10].

Impulsive purchase tendencies were assessed using five markers unplanned grabs, emotion-fueled drives, no advance planning, hasty judgments, and enticements from the shop milieu. Retail atmospheres spark these via affective and situational nudges [8]. Analysts deployed multiple linear regression for insights. Validity and reliability verifications preceded all else. Tool integrity was assured. Normality, multicollinearity, and heteroscedasticity underwent scrutiny next. t-tests probed individual effects; F-tests gauged collective strength [11]. Sight-based merchandising hooks attention swiftly. Sentiments surge. Impulse transactions follow [2]:

H1: Visual communication exerts a positive influence on impulse buying behavior.

Physical store surroundings foster multisensory immersion through atmospheric design. Shoppers feel at ease. Bonds form emotionally. Impulse transactions accelerate [3]. So: H2: Store atmospherics boosts impulse buying tendencies positively.

Merged visual messaging and environmental tones heighten stimulative forces in tandem, steering buyer resolve [8]. Thus:

H3: Visual communication alongside store atmospherics exerts a simultaneous impact on impulse buying behavior.

### IV. RESULT

#### A. Validity Test

Validity checks verified that questionnaire statements accurately reflected their target concepts. The Pearson Product Moment method drove analysis. Significance under 0.05 marked items as valid. One hundred three students 2024 entrants in Balitar Islamic University's Faculty of Social and Political Sciences faced the scrutiny. Key findings on all variables appear next.

Table 1: Recapitulation of Validity Test Results

Item	r Count	Sig.	Remarks
X1.1	0,632	<0.001	Valid
X1.2	0,714	<0.001	Valid
X1.3	0,650	<0.001	Valid
X1.4	0,590	<0.001	Valid
X1.5	0,561	<0.001	Valid
X1.6	0,591	<0.001	Valid
X2.1	0,673	<0.001	Valid
X2.2	0,716	<0.001	Valid
X2.3	0,762	<0.001	Valid
X2.4	0,769	<0.001	Valid
X2.5	0,763	<0.001	Valid
Y.1	0,793	<0.001	Valid
Y.2	0,744	<0.001	Valid
Y.3	0,785	<0.001	Valid
Y.4	0,567	<0.001	Valid
Y.5	0,672	<0.001	Valid

Table 1 shows that all statements in the visual communication variable (X1) as many as 6 items, store atmospherics (X2) as many as 5 items, and impulse buying behavior (Y) as many as 5 items all show significance values below 0.05. This condition proves that all measurement instruments used in this study are declared valid and can be used for future testing.

#### B. Reliability Test

The reliability test aims to measure the level of consistency of research instruments when used repeatedly under the same conditions. The minimum standard set refers to Cronbach's Alpha value  $\geq 0.60$ . The following are the results of reliability testing for each variable.

Table 2: Reliability Test Results

Variable	Cronbach's Alpha	Number of Items	Remarks
Visual Communication (X1)	0,672	6	Reliable
Atmospherics Blinds (X2)	0,787	5	Reliable
Impulse Buying Behavior (Y)	0,759	5	Reliable

Based on Table 2, the three research variables resulted in Cronbach's Alpha values that completely exceeded the minimum threshold of 0.60. The visual communication variable obtained a value of 0.672, store atmospherics obtained a value of 0.787, and impulse buying behavior obtained a value of 0.759. These results confirm that the questionnaire instrument used in this study has an adequate level of consistency so that the data produced can be trusted for further analysis purposes.

**C. Classic Assumption Test**

**Normality Test-** The normality test was carried out to verify that the distribution of residual data in the regression model followed the normal distribution. The method used is the One-Sample Kolmogorov-Smirnov Test, provided that the data is declared to be normally distributed if the value of Asymp. greater than 0.05.

Table 3: Normality Test Results

Remarks	Value
N	103
Red	0,0000000
Std. Deviation	2,90084325
Test Statistic	0,050
Asymp. Sig. (2-tailed)	0,200
Conclusion	Normally Distributed

Table 3 shows that the value of Asymp. Sig. obtained by 0.200, which is greater than 0.05. These results prove that the residual data is normally distributed, so one of the fundamental requirements in the use of multiple linear regression analysis has been met in this study.

**Multicollinearity Test-** The multicollinearity test was carried out to detect whether there is a strong linear relationship among the independent variables in the regression model. Multicollinearity got probed via Tolerance metrics alongside Variance Inflation Factor (VIF) scores. Cutoff rules deemed regression sound: Tolerance above 0.10, VIF under 10.

Table 4: Multicollinearity Test Results

Variable	Tolerance	VIF	Remarks
Visual Communication (X1)	0,824	1,214	No Multicollinearity
Atmospherics Blinds (X2)	0,824	1,214	No Multicollinearity

Table 4 reveals Tolerance of 0.824 and VIF of 1.214 for visual communication. Store atmospherics matched exactly. Standards prevailed: Tolerance surpassing 0.10, VIF under 10. Multicollinearity evaded the regression framework entirely. Predictors entered multiple linear analysis unscathed by collinear distortions among themselves.

**Heteroscedasticity Test-** Tests probed heteroscedasticity variance instability in residuals over observations. The Glejser technique guided detection. Models passed when p-values for predictors versus residual absolutes topped 0.05.

Table 5: Heteroscedasticity Test Results

Variable	B	Std. Error	t	Sig.	Remarks
(Constant)	2,704	1,595	1,695	0,093	—
Visual Communication (X1)	0,063	0,068	0,920	0,360	No Heteroscedasticity

Atmospherics Blinds (X2)	-0,090	0,062	-1,451	0,150	No Heteroscedasticity
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Based on Table 5, the value of visual communication significance is 0.360 and store atmospherics is 0.150, both far beyond the limit of 0.05. This proves that the regression model in this study is free from heteroscedasticity problems, so that the estimated regression coefficient produced is efficient and unbiased.

**D. Hypothesis Test**

**1. Partial Test (t-test)**

The t-test is used to evaluate the influence of each independent variable individually on the dependent variable. This test answers the formulation of the first and second problems, namely whether visual communication and store atmospherics separately have a positive effect on impulse buying behavior in convenience stores in Indonesia. Variables count as influential when their p-values dip below 0.05.

Table 6: Results of the t-test (partial)

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	4,555	2,783	—	1,636	0,105
Visual Communication (X1)	0,268	0,119	0,221	2,243	0,027
Atmospherics Blinds (X2)	0,334	0,108	0,305	3,091	0,003

Visuals scored  $t = 2.243$  ( $p = 0.027 < 0.05$ ). H1 holds firm. Sights notched  $t = 2.423$  with  $p = 0.017$  beneath the 0.05 line, backing hypothesis 1 solidly because each visual bump raises snap buys 0.268 units if rest stay put. Ambiance hit  $t = 3.091$  ( $p = 0.003$ ). H2 passed muster. One-point gains in atmospheric elements actively elevate impulse purchases by 0.334 units, while standardized beta coefficients underscore their dominance because they reveal 0.305 for atmospherics compared to 0.221 for visuals when they fuel unplanned consumer purchases.

**2. Simultaneous Test (F Test)**

Researchers conducted an F-test to evaluate the combined influence of visual communication and store atmospherics on impulse buying patterns, which directly addressed the third research question, and p-values under 0.05 confirm the model's robust explanatory power.

Table 7: Test F Results (Simultaneous)

Models	Sum of Squares	df	Mean Square	F	Sig.
Regression	212,613	2	106,307	12,385	<0.001
Residual	858,319	100	8,583	—	—
Total	1070,932	102	—	—	—

Table 7 shows that researchers calculated an F-value of 12.385, which achieved a significance level below 0.001 and thus fell well under the 0.05 threshold. These results prove that visual communication and store atmospherics simultaneously have a significant effect on impulse buying behavior in convenience stores in Indonesia, so H3 is

accepted. These findings indicate that a combination of visual stimulus elements and synergically designed store atmospheric conditions will result in a stronger drive to consumer impulsive buying behavior than if each factor worked separately.

### E. Multiple Linear Regression Equations

Based on the results of the t-test in Table 6, the multiple linear regression equations formed in this study are as follows.

Table 8: Summary of Multiple Linear Regression Equations

Variable	Coefficient (B)	Std. Error	Beta	Sig.
Constant	4,555	2,783	—	0,105
Visual Communication (X1)	0,268	0,119	0,221	0,027
Atmospherics Blinds (X2)	0,334	0,108	0,305	0,003

The regression equation formed is  $Y = 4.555 + 0.268X_1 + 0.334X_2$ . A constant value of 4.555 indicates that without the contribution of visual communication or store atmospherics, consumer impulse buying behavior remains at a base value of 4.555. The visual communication regression coefficient of 0.268 indicates that every increase in one unit of visual elements in the store will drive an increase in impulse buying behavior by 0.268 units. Similarly, the store atmospherics coefficient of 0.334 indicates that every one unit improvement in the store's atmospheric condition will increase impulse buying behavior by 0.334 units. Overall, all problem formulations in this study have been answered, namely visual communication has a partial positive effect, store atmospherics has a partial positive effect, and both have a simultaneous effect on consumer impulse buying behavior in convenience stores in Indonesia.

## V. DISCUSSION

### A. The Influence of Visual Communication on Impulse Buying Behavior

The results of this study prove that visual communication has a positive and significant effect on consumer impulse buying behavior in convenience stores in Indonesia, with a significance value of 0.027 and a regression coefficient of 0.268. This number means that every one unit increase in the quality of visual elements in a store will drive an increase in impulse buying behavior by 0.268 units assuming the other variables are constant. These findings confirm that visual stimuli are one of the most dominant stimuli that are first captured by the consumer senses in the retail environment before purchasing decisions are formed. Conceptually, the Visual Communication Such as product displays, store aesthetic design, promotional materials, and visual information work as cognitive as well as emotional triggers that accelerate the consumer decision-making process. Contemporary retail scholarship reveals a tightening bond between visual merchandising and atmospherics, as product-centered displays complement expansive store-level arrangements to mold consumer conduct in full [4]. Such fusion yields a richer, more potent

web of ambient triggers that propel impulse purchases far beyond what isolated components achieve alone.

These results carry heightened weight within convenience stores' distinct profile. Supermarkets or hypermarkets require consumers to ponder deeply, but convenience outlets run on rapid, intuitive spending fueled by gut reactions to nearby, eye-level prompts. Close-range visual signals like product exteriors directly ignite snap buys during hasty shopping, whereas far-off ones exert no immediate sway [12]. Effective visual designs convert routine convenience store visits into spur-of-the-moment purchases. Shoppers' emotions ignite this triumph. Studies on online shopping highlight how visual sharpness and precision outshine other cues in providing instant delight, while they cultivate a vivid product reality within buyers' thoughts [13]. Retailers in physical spaces tap identical mental triggers. Striking setups featuring vivid hues and refined forms arouse upbeat feelings. Barriers to unplanned buys crumble under such influences.

Visual designs create enjoyable and memorable experiences that surpass the capabilities of digital competitors, while traditional retail environments excel in crafting immersive atmospheres that fully engage the senses. Managers should prioritize sensory enhancements, with visuals serving as a foundational element in core strategies designed to foster pleasurable shopping experiences [14]. Enhancing visual appeal involves more than just product appearances because it incorporates thoughtfully planned spatial arrangements, strategic color selections, and intentional focal points that maximize shopper exposure to specific items.

Operators of convenience stores in Indonesia can apply these findings to obtain practical guidance, so they need to allocate resources toward advanced visual configurations such as eye-catching end-cap displays, signage that merges information with aesthetic appeal, and product placements aligned with natural eye movement patterns and decision-making processes. Local shoppers typically enter these stores for quick visits and make rapid choices, which means visuals must deliver immediate and compelling persuasive effects from the initial glance. Effective designs remain straightforward because they organize information clearly to direct attention efficiently.

Visual elements that convey relevant content intensify their effects when paired with atmospheric aesthetics, and promotional displays highlighting discounts, limited stock availability, or time-sensitive countdowns evoke emotions conducive to spontaneous purchases. Video-based shopping studies demonstrate that time constraints and promotional atmospheres increase shopper arousal, which in turn facilitates impulsive behaviors [15]. Brick-and-mortar stores replicate these dynamics through visuals that emphasize urgency and value in order to drive unplanned expenditures.

Understanding the mechanisms of visual processing in minimarkets connects directly to neuroscience principles of visual perception because the brain employs two distinct pathways, with the ventral stream identifying objects and the dorsal stream navigating spatial environments, so shoppers activate both simultaneously to locate products and evaluate visual cues within aisle layouts.

Researchers utilize eye-tracking technology, which has become standard in retail investigations, to reveal patterns of visual attention, and consumers bypass comprehensive

scans to focus intensely on high-stimulation areas such as shelves at eye level, aisle corners, and checkout counters that function as primary impulse purchase locations. Experienced managers position high-margin or promotional products in these spots to convert visual fixation into actual sales.

Temporal dynamics influence visual effectiveness significantly, even though minimarket professionals frequently overlook this aspect despite its critical role, and average visits last less than ten minutes, which requires visuals to deliver rapid persuasion and emotional arousal. The cognitive process of thin-slicing enables the brain to evaluate stimuli within milliseconds, so retailers observe instantaneous judgments that generate immediate emotional responses, and the quality of that initial impression ultimately determines whether impulse buying occurs.

Crafting an effective visual strategy requires maintaining consistent and cohesive narratives throughout the entire store environment because elements like storefronts, window displays, shelving configurations, and point-of-purchase materials all contribute to a unified brand story that shoppers perceive along their navigation path, which fosters trust, enhances ease of shopping, and activates cognitive fluency the preference for smooth perceptual inputs over complex ones that reduces mental effort and promotes emotionally driven impulse expenditures.

Cultural contexts profoundly influence visual design strategies in Indonesia since local consumers prefer vibrant color schemes, interactive layouts, and familiar motifs, and cross-cultural psychological research indicates that visual responses vary across groups, so strategies successful in Western or other Asian markets require adaptations to align with preferences in the Indonesian archipelago. Local executives investigate favored aesthetics and integrate them into designs that resonate deeply with consumer sensibilities.

Technological advancements introduce innovative visual tactics for physical minimarkets because dynamic digital screens, interactive touch displays providing detailed product information, and augmented reality integrations within aisles amplify the capacity of visuals to stimulate impulse behaviors, and adaptable screens outperform static posters by adjusting content in real time based on factors like time of day, weather conditions, or crowd characteristics. Spot-on timing amps feels toward rash grabs.

Lasting punch needs green tweaks and fresh spins. Repeat sights dull emotions via habit blur in sense lore. Chiefs swap elements routinely for seasons or pushes, but proactive swaps dodge boredom in steady crowds too. Steady format flips, style shifts, and content jolts keep sparks of wonder, pull, and joy alive for enduring impulse pulls.

### ***B. The Effect of Store Atmospherics on Impulse Buying Behavior***

The store atmospherics variable was shown to contribute to a greater influence on impulse buying behavior than visual communication, as reflected by a higher Beta coefficient value, which was 0.305 compared to 0.221, with a significance level of 0.003 and a regression coefficient of 0.334. Empirical evidence from these findings demonstrates that the comprehensive store

atmosphere encompassing lighting, layout, background music, ambient scents, and overall comfort exerts a more potent influence on prompting consumers toward unplanned purchases than visual stimuli in isolation, and these outcomes highlight the critical value of adopting multisensory strategies in managing retail environments.

An integrative analytical framework provides the theoretical basis for the superior impact of atmospherics because it delineates the components, precursors, and outcomes of store atmospheres across diverse retail formats, and systematic research spanning over four decades has pinpointed hundreds of variables linked directly to store atmosphere constructs while formulating a cohesive model that illustrates how atmospheric cues interact synergistically to shape consumer responses in physical stores, two-dimensional online platforms, three-dimensional online settings, mobile applications, and virtual or augmented reality environments [5]. The extensive complexity and wide-reaching effects of atmospherics account for its stronger effect on impulse buying relative to the narrower scope of visual stimuli.

A multisensory emotional activation process elucidates the psychological pathways linking atmospherics to impulse buying tendencies because consumers entering a convenience store process visual inputs alongside auditory cues from background music, olfactory signals from ambient aromas, kinesthetic feedback from layout comfort, and thermal sensations from temperature and lighting, so this integration of multisensory elements generates holistic Gestalt shopping experiences that profoundly shape affective states. Comprehensive investigations into impulse buying behaviors confirm that emotional conditions maintain intricate and substantial connections to consumer impulse buying behavior (CIBB), with emotional effects functioning through multiple interconnected mechanisms [16]. Store atmospheres designed optimally enable retailers to manipulate these emotional states strategically in ways that elicit impulse purchase reactions.

Amid the evolving landscape of modern retail, atmospherics gain heightened importance as physical stores compete more fiercely with digital shopping platforms, and although e-commerce ecosystems present ongoing existential threats to brick-and-mortar outlets, these venues possess a unique strength in providing atmospheric experiences that digital channels cannot duplicate. Astute managers must shift from standardized atmospheric designs to tailored environments that adapt to individual consumer preferences while also incorporating interpersonal engagements and in-store events as vital atmospheric elements that enhance the overall shopping journey [14]. Personalizing the store atmosphere opens a promising new domain in retail management because it holds the capacity to amplify the impact of environmental cues substantially.

These insights acquire further robustness when examined alongside consumer behavior patterns in mobile commerce ecosystems, and studies reveal that visual appeal and portability key attributes of mobile applications boost consumers' hedonic value, which subsequently emerges as a robust predictor of impulse buying [17]. The same psychological process underlies hedonic value triggered by superior shopping environments in both physical and digital contexts, so it parallels the mechanisms of

atmospherics within physical retail settings. Shoppers who derive pleasure and enjoyment from a given shopping atmosphere encounter reduced barriers to impulse purchases because positive affective states diminish cognitive inhibitions against unplanned spending.

The discovery that store atmospherics exert greater influence than visual communication carries significant strategic consequences for how convenience store managers distribute resources, so although investments in visual communication retain proven value and importance, leaders should channel primary budgetary resources and focus toward elevating the holistic atmospheric quality of their stores. Managers must prioritize agendas such as refining lighting systems to foster comfortable ambiances without compromising product visibility, curating background music aligned with target consumer profiles, maintaining appealing ambient scents, and devising intuitive layouts that prevent overcrowding, and when operators integrate these atmospheric components cohesively and consistently, they cultivate shopping settings that persistently stimulate consumer impulse buying.

Appreciating why store atmospherics surpass visual communication in promoting impulse purchases demands insight into how physical retail environments engage multiple psychological dimensions of consumers concurrently because atmospherics extend beyond mere visual inputs to deliver comprehensive experiences that activate the full spectrum of human senses in unison. Upon entering a convenience store, individuals instinctively process air temperature through skin sensation, aromas via olfaction, music through hearing, light intensity through vision, and spatial openness or confinement through proprioception, so this subconscious multisensory integration shapes affective states that powerfully drive propensities for unplanned spending.

Retail architecture and environmental psychology research reveals the intricate nuances of lighting as a key atmospheric variable because factors like light intensity, quality, direction, color temperature, and contrasts between illuminated and shadowed areas each exert distinct effects on consumer actions and moods. Warm lighting featuring lower color temperatures generates cozy and intimate atmospheres that prompt shoppers to extend their stay, whereas cooler and brighter illumination conveys cleanliness and efficiency to facilitate swift purchase decisions. Convenience stores, which emphasize rapid and hassle-free transactions, require intelligent lighting designs that harmonize atmospheric comfort to prolong dwell time with efficient illumination aiding quick product location.

Researchers have extensively examined background music as an atmospheric element in stores since the 1980s, and neuroscience alongside music psychology advancements have progressively refined insights into its influence mechanisms. Studies demonstrate that music tempo directly affects consumers' in-store movement speed and visit duration because slower tempos decelerate pacing and extend time spent inside, yet music's role in fostering impulse buying within convenience stores demands subtler consideration since this format prioritizes quick transactions where prolonging stays excessively proves counterproductive. Music proves particularly pertinent in this setting through its mood induction capacity, so carefully selected tracks generate positive emotional states

that heighten consumers' readiness for unplanned purchases.

Scent marketing emerges as a captivating yet underexploited dimension of store atmospherics in modern retail strategies, particularly within the Indonesian market. The human olfactory system has a direct and unique neuronal connection with the amygdala and hippocampus brain structures that play a central role in the processing of emotions and memory not through the thalamus as it does through the thalamus as with other sensory systems. These distinctive neuronal characteristics explain why scent has such a powerful ability to evoke emotional memory and create profound affective associations, often far beyond the ability of visual or auditory stimuli in terms of the depth of emotional resonance they evoke. For convenience store managers, the implications are very practical: the use of appropriate and consistent scents within the store can create a strong positive emotional association between consumers and the shopping experience at the store, which in turn increases the frequency of visits, dwelling time, and impulse buying tendencies simultaneously.

Store layout configuration as a component of store atmospherics has a dimension of influence that goes beyond just the efficiency of consumer navigation in the store. Layouts designed with environmental psychology principles in mind can strategically create conditions that increase the probability of impulse buying at various points in the store. The concept of a decompression zone a transitional area between the exterior and interior of a store where consumers psychologically switch from out-of-store mode to shopping mode is one of the most overlooked but significant elements of layout. These zones need to be designed to give consumers the opportunity to be visually and mentally oriented, reduce the cognitive burden of transition, and open themselves to the environmental stimuli they encounter in the store. Convenience stores that fail to optimize their decompression zones have the potential to miss out on most impulse buying opportunities because consumers enter the store in a cognitive state that is not yet fully open to environmental stimuli.

Perceived crowding, or the density levels that consumers experience, functions as a store atmospheric factor exhibiting an inverted U-shaped relationship with impulse buying because excessively sparse stores generate understimulating environments that may provoke social unease, whereas overly packed ones impose cognitive and physical strains that disrupt decision making and prompt immediate exits. Managers achieve optimal conditions at moderate density levels that foster vibrant atmospheres while preserving ease of movement, and convenience store operators can regulate these perceptions not only by controlling simultaneous customer numbers but also by employing layout configurations, selecting appropriate fixtures and furniture, and deploying visual or acoustic features to simulate expanded or more dynamic spaces as circumstances require.

Ensuring atmospheric consistency over time emerges as a crucial aspect warranting heightened focus in convenience store management because visitors encountering the same outlet at varied intervals such as mornings, noons, evenings, weekdays, or weekends frequently notice stark differences arising from shifts in natural lighting, ambient noise, room temperatures, and crowd levels. Such inconsistencies breed discrepancies between expectations

from prior visits and subsequent realities, which can undermine atmospherics' capacity to cultivate emotions favorable for impulse buying, so professional operational protocols must incorporate standardization of atmospheric quality to accommodate daily and weekly fluctuations.

### C. The Simultaneous Influence of Visual Communication and Store Atmospherics on Impulse Buying Behavior

An F-test encompassing all factors yielded 12.385 ( $p < 0.001$ ), which confirms that visual cues and atmospheric elements together propel spontaneous purchases in Indonesian convenience stores. Impulse buying patterns align with the equation  $Y = 4.555 + 0.268X_1 + 0.334X_2$ , where inputs integrate upon a baseline of 4.555 that persists even without stimuli. Teamed data underscores cue harmony fueling spurts.

Rash spends tangle psycho-social strands beyond lone threads. E-stream arenas reveal linked sparks sales tricks, seller vibes, tech sheen, feed flair that tangle with thoughts, moods, and personal ticks to spawn sudden grabs [18]. Real stores echo the mashup because visuals and settings boost mutual grip.

Boost loops unpack visual-air teaming. Cozy backdrops mesh eye-pop wares, stacking feels deeper than solo shots for superior whim prep. Online clip studies note view-audio pairs hiking buzz and glee to guide young spends [15]. Store scenes replay this buzz-pleasure link through visual-setting duets.

Pooled outcomes bolster frames for local shop spurts. Broad consumer whim scans push whole webs trapping social, mood, gadget, character, and money strands together rather than solo slices [16]. Our probe meets this by proving visual and air cues merge into true clout.

Store bosses pull solid plays from these ties. Quick-shop leads view visuals and air as joined backbones in fluid guest flows, not foe bids for cash. An integrative framework that includes components Visual Merchandising and Atmospherics as two complementary domains in the context of traditional retail as well as E-tailer affirms the importance of this integrated approach in retail management research and practice [4]. The implementation of an integrated strategy that aligns the quality of visual elements with the atmospheric conditions of the store will result in a synergistic strengthening effect that maximizes the potential impulse buying consumers.

The strengthening of the synergy between these two variables is also relevant in the context of the characteristics of Indonesian consumers who are increasingly exposed to stimulus-rich digital shopping experiences. Consumers who are accustomed to rich visual interfaces and immersive digital shopping experiences will have higher expectations of the quality of the physical store environment. Research on Mobile Commerce demonstrate that the financial capacity (financial capacity) the consumer acts as a significant moderator in the relationship between emotional and behavioral conditions impulse buying [17]. The implication of these findings in the context of current research is that the combination strategy Visual Communication and Atmospherics It needs to be adjusted to the demographic profile and economic capacity of the target consumer segment, so that the designed environmental stimulus can optimally convert

positive emotional conditions into actual purchase transactions.

Overall, the findings of this study provide strong and comprehensive empirical evidence that integrated management of the convenience store environment by paying attention to visual communication and store atmospherics aspects simultaneously and synergistically is a strategy that has been proven to be effective in encouraging impulse buying behavior consumers in Indonesia. These findings enrich the treasure trove of retail marketing management literature while providing evidence-based guidelines for store managers in designing more stimulating, memorable, and ultimately commercially profitable shopping experiences.

## VI. CONCLUSION

This study empirically confirms that visual communication and store atmospherics have a positive and significant impact on consumer impulse buying behavior in convenience stores in Indonesia, both partially and simultaneously. Store ambiance claimed greater solo impact,  $\beta = 0.305$  exceeding visual communication's  $\beta = 0.221$ , as multi-sense settings ignite more intense emotional reactions in buyers than isolated visual inputs. Combined analyses confirm the two factors collaborate dynamically to build an environmental cue framework that propels spontaneous buying choices.

Indonesian convenience store operators should pursue a unified approach that merges enhancements to visual elements like checkout displays, advertising panels, and perception-driven merchandise arrangements with broader atmospheric upgrades encompassing illumination, ambient sounds, olfactory elements, and navigational clarity. Decision-makers must regard these components as a consolidated funding priority rather than distinct initiatives. Subsequent investigators could broaden participant pools and incorporate intermediary factors such as pleasure-seeking drives or affective excitement to achieve deeper insights into the mechanisms fueling impulsive purchases within Indonesia's retail sector.

## CONFLICT OF INTEREST

The authors declared that they have no conflict of interest.

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