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In-Store Social Cues and Impulse Purchasing Behavior at Supermarkets: The Moderating Effects of Customer Demographics

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Research Article

Abstract

Purpose: *This study aims to evaluate the association between impulse buying behavior and in-store social cues (salespeople, presence of other customers, and in-store events) at supermarkets in Yaoundé, Cameroon. The moderating influences of gender and age on this association are also examined.*

Methods: *Based on Leon Festinger's social comparison theory (1954), the study used a quantitative design and a model comprising three exogenous factors, two moderating variables, and one endogenous variable to direct the investigation. A total of 429 customers from four selected supermarkets participated in the surveys, which were conducted both in-person and online. Indexes for product placement, signage, point-of-sale displays, and store layouts were created using multiple correspondence analyses. The study's hypotheses were tested using the ordinary least squares estimation approach. By combining the two moderating variables with the elements of in-store design cues, the moderating effects of age and gender were examined.*

Results*: The findings revealed that the behavior of sales associates and the presence of other shoppers significantly stimulated impulse buying in Yaoundé supermarkets, consistent with established theories and empirical studies. While in-store events showed a negative and insignificant effect, this suggests context-specific factors may influence their effectiveness. Gender did not significantly moderate these relationships, but age played a crucial role, with older customers being more responsive to environmental and social cues. The overall significant influence of social cues suggests that shoppers perceived the in-store social elements as both exciting and appealing.*

Implications*: These findings underscore the importance of retail strategies that harness social influence, tailored to demographic variations. Cameroonian supermarkets should prioritize empowering and training their sales staff to ensure a positive customer experience. Creating a friendly and engaging environment through strategic staff placement and in-store activities can boost impulsive buying. Understanding customer interactions can also improve advertising and store design. Continuous monitoring of staff performance and customer feedback is crucial for optimizing these strategies.*

Keywords: Social Cues, Sales Associates, Impulse Purchase, Shoppers, In-Store Events

1. Introduction

In Cameroon, the retail sector has become one of the fastest-growing and most pervasive industries. As a result, managers of retail establishments in Cameroon now need to comprehend client purchasing patterns.

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Impulse buying behavior has garnered significant attention in the field of consumer psychology, particularly within retail environments such as supermarkets, where the layout, design, and ambient cues can substantially influence purchasing decisions (Verplanken & Sato, 2020). Impulse purchases, often characterized by spontaneous and unplanned buying behavior, are prompted by various stimuli, including visual merchandising, product placement, and in-store social environmental factors such as the behavior of personnel, the presence of other shoppers, and in-store social events (Khan & Shiri, 2021). Retailing has undergone significant changes because of Cameroon's evolving commercial landscape. The rise in internet shopping is one of the causes. Now that consumers have the freedom to choose their preferred channel, many stores' profit margins have drastically decreased due to intense competition. To adapt to the changing business environment, retailers must develop strategies to boost sales. This can be accomplished by focusing on increasing customer satisfaction levels, which may lead to more impulsive purchases. In a retail setting, customer satisfaction is influenced by several factors. The store's social cues are one of these factors (Gogoi, 2017).

Central Africa's distribution center has been in Cameroon. The retail industry contributed 4.3% of Cameroon's GDP in 2020 and was expected to contribute 4.5% in 2021, according to Trading Economics (Trading Economics, 2021). However, lockdowns and lower customer spending caused many firms to struggle, and the COVID-19 pandemic had a significant effect on Cameroon's retail industry. "Yaoundé" is a vibrant, expanding metropolis with a rich cultural heritage and stunning natural surroundings. It is a significant city in the region due to its varied economic activity and its function as Cameroon's political and administrative capital. Additionally, this has created a cohesive web of operations and activities that has drawn numerous supermarkets to the city, including Mahima, Super U, Casino, Dovv, and Santa Lucia, among others. These days, when choosing retail establishments for their purchases, customers request more advantageous features. Positive social interactions with other customers, a kind and informed salesperson, and in-store social events like games and demos are highly sought after. Research has shown that positive interactions with sales staff can foster feelings of trust and satisfaction, prompting impulse purchases (Guevarra *et al,* 2020). Conversely, negative or unhelpful interactions may deter buying behavior. In Cameroon's retail context, where personal engagement and hospitality are often highly valued culturally, the role of sales associates becomes doubly important (Mason, Wilson, & Tully, 2022). Social interactions and collective shopping experiences can create a sense of urgency or competition, leading to increased impulse buying (Baldinger & Rubinson, 2021). The dynamics of social proof, where individuals are influenced by observing the behaviors of others, can manifest in environments such as marketplaces and stores, which are popular in Yaoundé (Kahn *et al.,* 2020). Additionally, in-store events such as promotions, demonstrations, and product launches can significantly enhance the shopping atmosphere and trigger impulse purchasing behavior. These events create excitement and can serve as powerful stimuli that attract customers and encourage unplanned purchases (Prasad & Dev, 2018). However, the effectiveness of such events may vary based on cultural perceptions and shopping habits prevalent in Yaoundé. However, the specific effects of these social cues in the context of supermarkets in Yaoundé remain underexplored. Given the unique cultural and social dynamics of Yaoundé, understanding how these social cues manifest and influence shopper behavior is crucial. In Yaoundé, the influence of socio-economic factors and cultural contexts complicates the understanding of impulse buying behavior, making it imperative to assess how various in-store environment cues affect this behavior among different demographic groups.

Existing literature suggests that sensory stimuli may have a greater influence on younger consumers, whereas older shoppers tend to prioritize practical considerations (Jiang & Zhang, 2022). Similarly, studies have shown that gender differences significantly impact shopping habits, with women exhibiting higher levels of impulse buying than men, influenced by emotional and social cues (Osei-Nimoh *et al.,* 2021). Despite these insights, a notable gap remains in the research, particularly in the Cameroonian context, with

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a specific focus on Yaoundé. Although significant advancements have been made in the discipline, a survey of empirical research reveals substantial gaps that remain. Firstly, most of the research was conducted in retail settings, which limits the broad applicability of the results in other situations. Furthermore, the authors did not quantify individual customer differences. Second, it is uncertain whether the results can be applied to other countries with distinct shopping norms and behaviors, such as Cameroon, as most of the studies have been carried out in Western societies. By examining the effects of various in-store social cues (sales associates, other customers, and in-store social events) on impulse buying behavior among Yaoundé shoppers, as well as the moderating effects of age and gender, this study seeks to add to the body of knowledge on consumer behavior. Gaining insight into these characteristics can help develop customized marketing plans that appeal to a range of consumer demographics in this expanding retail industry. Therefore, the purpose of this study is to respond to the following research questions:

a. How do sales associates affect consumers' impulsive buying habits at Yaoundé supermarkets?
b. In what ways do other customers' presences affect Yaoundé supermarket patrons' impulsive buying habits?
c. What impact do in-store social events have on Yaoundé supermarket patrons' impulsive buying habits?
d. How much does the association between impulse buying and in-store social cues in Yaoundé supermarkets depend on age and gender?

2. Review of the Literature and Development of Hypotheses

An overview of the research on social cues, impulsive buying, and the formulation of hypotheses will be included in this section. The section will conclude with a presentation of the study's research framework.

2.1. Review of Conceptual Literature

2.1.1 In-store Social Cues

According to Baker *et al.* (2002), social elements in a retail setting include the presence of other consumers and staff, as well as social conditions like congestion and interaction traits. These social cues, including the behavior of sales associates and shoppers, have a significant impact on consumer perceptions and decision-making. Sales associates serve as vital social signals by helping to create a welcoming atmosphere and guiding customers through the purchasing process with their professionalism and responsiveness (Bitner, 1990). The visibility and actions of other shoppers act as social proof, affecting individual behavior by signaling trustworthiness and popularity (Cialdini, 2007). The density of shoppers can either energize or detract from the experience, impacting satisfaction and sales. Organized social events, such as product demonstrations, contests, and promotional gatherings, foster social engagement, community building, and loyalty (Arnold & Reynolds, 2003). These events increase customer participation, dwell time, and help communicate brand values, making the shopping experience memorable and distinct. Overall, in-store social cues work collectively to shape perceptions, influence consumer behavior, and enhance the effectiveness of the retail environment.

2.1.2 Impulse Purchasing Behavior

Impulse purchasing behavior is a phenomenon where consumers make spontaneous buying decisions, often driven by emotional stimuli rather than thoughtful consideration. A lack of premeditation characterizes this behavior, which encompasses various types, including unplanned purchases, reminder purchases, and suggestion-based purchases (Inman *et al.,* 2009; Hassan et al., 2023). Understanding impulse buying involves analyzing both internal and external factors that drive this behavior (Dittmar *et al.,* 1996). Internal factors include individual traits such as personality attributes, emotional states, and cognitive styles, while external factors encompass environmental cues from the retail space, social influences, and promotional

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strategies that can stimulate impulsivity (Talukdar & Lindsey, 2013; Verplanken & Sato, 2011; Verplanken *et al.,* 2023).

External factors play a significant role in facilitating impulse buying by creating environments that are conducive to shopping. Elements such as store layout, product placement, sensory stimuli (including music, scents, and lighting), and promotional displays have a significant influence on consumers' purchasing decisions (Verplanken & Herabadi, 2001; Suri & Monroe, 2003). For example, attractive in-store displays and eye-catching promotions can create a sense of urgency that encourages impulsive buying (Khan *et al.,* 2021). Additionally, social influences, particularly in the age of social media, have increased the prevalence of impulse purchases. Consumers are often swayed by peer behavior and social media trends that encourage spontaneous buying (Nadeem *et al.,* 2024). Online shopping environments can also lead to impulsive purchasing behavior, which is impacted by social influence, product display, and website design (Huang & Kuo, 2013).

According to Han et al. (1991), there are five categories of impulse purchase. Pure impulse purchases occur without any prior intention to buy; these decisions are often the result of emotional responses to stimuli, such as attractive displays or engaging promotions (Suri & Monroe, 2003; Hassan *et al.,* 2023). Reminder impulse purchases arise when consumers are reminded of a product or brand that they had previously considered or needed, prompting them to buy it spontaneously (Rizwan *et al.,* 2023). According to Rook & Fisher (1995), situational considerations, such as product placement or store layout, often lead to impulsive purchases. The perception of value or discounts drives bargain impulse purchases, where customers feel pressured to seize a deal they believe is too good to pass up, often resulting in impulsive purchases (Khan et al., 2021). Research by Kacen & Lee (2002) found that the desire to save money or get a good deal frequently motivates cheap impulse purchases. Lastly, impulse purchases occur when people are persuaded to buy something they had not initially intended to acquire due to recommendations or advertisements (Verplanken et al., 2024). Research by Chevalier & Mazzalovo (2012) found that social variables, such as peer pressure or trust in the salesperson, frequently motivate spontaneous purchases.

Typically, there are three stages involved in impulse buying behavior, which can be categorized as exposure, consideration, and action. During the exposure stage, customers are exposed to stimuli such as product displays or advertisements, which can lead to impulsive purchasing (Verplanken & Herabadi, 2001; Suri & Monroe, 2003). Decision-making during the deliberation stage is influenced by a combination of environmental cues and internal factors, including mood and personal characteristics (Jung Chang et al., 2014; Jiang & Zhang, 2023). Lastly, the action stage is when customers make the impulsive purchase, which can occasionally lead to emotions of regret later or instant delight (Dittmar et al., 1996; Kim & Park, 2013).

2.2. Development of Hypotheses

The association between store environment design cues and consumers' impulsive buying behavior has been the subject of some studies.

2.2.1. Sales Associates and Impulse Purchasing Behavior

Sales personnel significantly influence customer behavior by providing personalized advice, support, and product information, which increases the likelihood of purchase (Hui & Bateson, 1991). Recent empirical studies underscore the significant influence of sales associates on consumers' impulse purchasing behavior, highlighting the importance of interpersonal skills, expertise, and engagement. Kim and Park (2021) found that friendly and responsive sales staff enhance emotional engagement, thereby increasing spontaneous buying tendencies. Lee and Kim (2022) demonstrated that proactive engagement and personalized recommendations foster trust, reducing purchase hesitation and encouraging impulse purchases. Zhang et al. (2023) emphasized that sales associates' credibility and product knowledge boost consumer confidence,

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leading to higher impulsive buying, especially when communication effectively highlights product benefits. Additionally, Park and Lee (2022) identified that professionalism and warmth from sales staff create positive emotional states and social proof, further triggering impulse buying, particularly in environments where consumers feel uncertain. Collectively, these studies suggest that well-trained, engaging, and credible sales associates are crucial in stimulating impulse purchasing behaviors across retail settings. We, therefore, consider the following hypotheses.

H1: Sales associates significantly influence consumers' impulsive buying habits at supermarkets in Yaoundé.

2.2.2. Presence of Other Shoppers and Impulse Purchasing Behavior

Recent empirical studies have consistently demonstrated that the presence of other shoppers significantly influences impulse purchasing behavior in retail outlets. For instance, Chen and Li (2020) found that higher shopper density increases impulsive buying by enhancing social facilitation and creating a lively atmosphere that encourages spontaneous purchases. Similarly, Kim *et al.* (2021) reported that social cues, such as observing others' purchasing behavior, trigger conformity effects that boost impulse buying, especially among younger consumers. Johnson and Lee (2022) highlighted that the presence of multiple shoppers can elevate arousal levels and perceived shopping excitement, leading to more impulsive decisions. Furthermore, Nguyen and Park (2023) emphasized that the social environment fosters a sense of social proof, which enhances consumers' confidence to make unplanned purchases. Collectively, these studies highlight that the social context within retail settings plays a significant role in stimulating impulse purchases by leveraging social influence, arousal, and perceived norms. Recent research has confirmed the significance of shopper density and social cues in influencing spontaneous buying behavior. We therefore hypothesize as follows.

H2: At Yaoundé supermarkets, the presence of other customers has a significant impact on consumers' impulsive buying habits.

2.2.3. In-Store Social Events and Impulse Purchasing Behavior

Recent empirical research suggests that in-store social events have a significant impact on impulse purchasing behavior by enhancing emotional engagement and social connectivity within retail environments. For example, Kim *et al*. (2021) demonstrated that live demonstrations and interactive activities increase shoppers' arousal and spontaneous buying tendencies, especially when social interactions are prominent. Similarly, Lee and Park (2022) found that social events such as product sampling and influencer appearances foster a sense of community, which correlates positively with impulse purchase frequency. Wang *et al.* (2023) highlighted that festive or themed in-store events create an environment of heightened excitement and social validation, leading to increased impulsivity among consumers. Moreover, Garcia and Rodriguez (2022) observed that peer involvement during social events amplifies social influence mechanisms, prompting more unplanned purchases. Overall, these studies confirm that social events in retail outlets serve as powerful stimuli that leverage social and emotional factors to drive impulse buying behavior across diverse consumer groups. We therefore hypothesize that:

H3: In Yaoundé supermarkets, in-store social events have a significant effect on customers' impulsive buying habits.

2.2.4. Moderating Effect of Customer Demographics (Gender and Age)

Recent empirical research suggests that age and gender significantly moderate the impact of in-store social cues, including the presence of sales associates, other shoppers, and social events, on impulse purchasing behavior. For example, Li and Zhao (2021) found that younger consumers are more influenced by social cues, such as peer presence and social events, resulting in higher impulse purchase rates compared to older consumers, who tend to be less swayed by such stimuli. Similarly, Kim and Lee (2022) reported that females

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exhibit greater susceptibility to social cues from sales associates and peer interactions, leading to increased impulsivity, whereas males show weaker effects. Wang et al. (2023) demonstrated that the presence of other shoppers amplifies impulse buying more among younger and female consumers due to heightened social conformity and emotional arousal. Furthermore, Zhang and Chen (2022) highlighted that in-store social events, such as promotional activities, tend to trigger stronger impulsive responses in younger shoppers, especially women, compared to older shoppers. Collectively, these studies highlight that demographic factors, such as age and gender, are critical moderators influencing how social cues affect impulsive purchasing in retail environments.

H4: In Yaoundé supermarkets, the association between impulse buying behavior and in-store social cues is significantly moderated by gender.

H5: The association between in-store social cues and impulsive buying behavior in Yaoundé supermarkets is significantly moderated by age.

2. 3. Conceptual Diagram

We develop the following research framework, which illustrates the relationship between variables, based on our hypothesis.

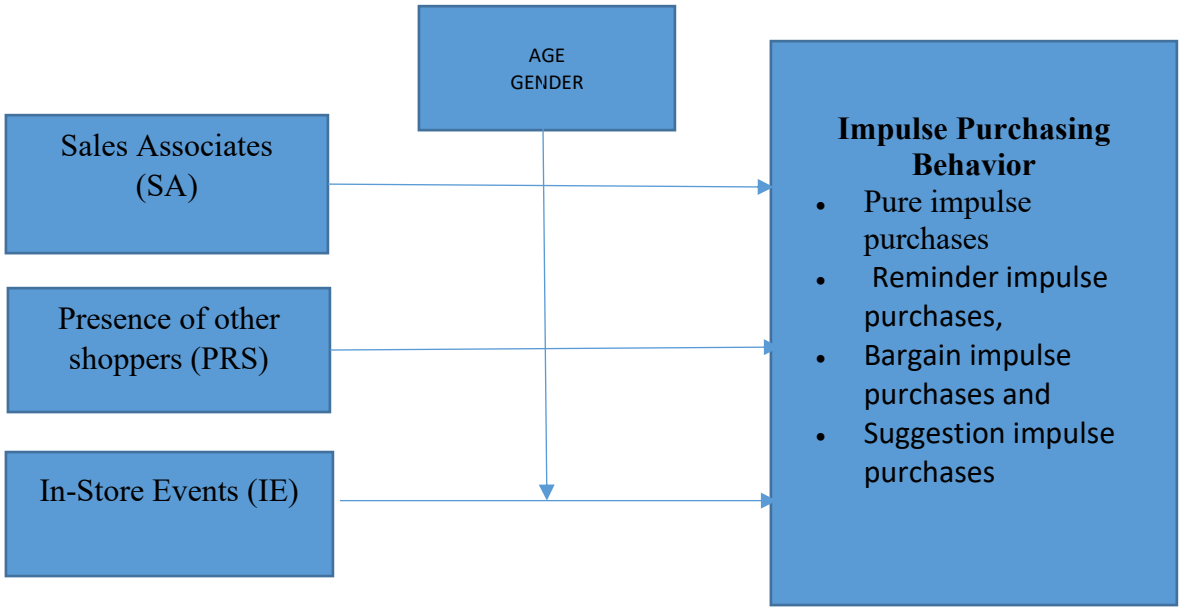

Fig. 1: Research Framework

Source: Adapted from Baker *et al* (2002)

3. Methodology

The study's methodology, which includes the research design, sample size, sampling strategy, model specification, data analysis techniques, validity and reliability of the research instrument, and ethical considerations, is presented in this section.

To depict a particular situation and describe the impact of in-store environment signals on impulse buying behavior, the study employed a quantitative approach that included surveys and a causal research design. The research procedure was guided by the quantitative study, which was founded on Leon Festinger's social comparison theory (1954).

Social comparison theory explains how people evaluate themselves by comparing themselves with others, influencing their self-esteem and attitudes. Proposed by Festinger in 1954, this concept identifies two types:

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upward comparisons with those perceived as superior and downward comparisons with those perceived as inferior. These comparisons occur across various domains, such as appearance, income, or abilities, which impact individuals' perceptions. The theory highlights that social influence from peers, family, and reference groups can shape behavior. In retail contexts, it helps explain how social comparisons affect impulse purchasing behavior.

As seen in Figure 1 above, this study is based on a model that included three social cue indicators: the influence of sales associates (SA), the presence of other customers (PRS), and in-store social events (IE) on impulse buying behavior (pure impulse purchase, reminder impulse purchases, bargain impulse purchases, and suggestion impulse purchases). Additionally, this study assumed that demographic factors (gender and age) influence the relationship between impulse buying behavior and in-store social cues. We define the econometric model for this investigation based on Baker's (1987) model. The model has the following specifications.

$$IPB_i = \beta_0 + \beta_1 SA_i + \beta_2 PRS_i + \beta_3 ISE_i + \beta_4 AGE_i + \beta_5 SEX_i + + \varepsilon_{1i} \ldots\ldots(1)$$

We built the following model using Kim and Park's (2018) model as inspiration in order to examine the moderating influence of gender (specifically female gender) on the link between in-store social cues and customers' impulse buying behavior:

$$IPB_i = \gamma_0 + \gamma_1 AC_i + \gamma_2 SEX_i + \gamma_3 AGE_i + \gamma_4 SC * SEX_i \; + \; \mu_{1i} \ldots\ldots\ldots\ldots\ldots\ldots(2)$$

In a similar vein, we used the Ryu et al. (2023) study as a model to investigate the moderating influence of shoppers' age on the impact of in-store social cues on their impulse buying behavior.

$$IPB_i = \theta_0 + \theta_1 SC_i + \theta_4 SEX_i + \theta_5 AGE_i + \theta_8 SC * AGE_i \; + \mu_{2i} \ldots\ldots\ldots\ldots\ldots\ldots(3)$$

Here, IPB_i is an indicator of impulse buying behavior; parameters to be estimated are ; βi, γ_i & θ_1. In-store social cues and female gender are correlated with SC*SEX, while in-store social cues and different age groups are correlated with AC*AGE.

Customers of Yaoundé 5 and 6 supermarkets were the target demographic. The study employed structured questionnaires, administered both in person and online, to gather primary data. The questionnaire's design consisted of three sections. Section B examined the indications of in-store social cues (See Appendix 3), while Section A included demographic data. The sales associate index was captured in terms of customer engagement level, product knowledge, responsiveness, sales conversion rate, and customer satisfaction ratings. The presence of other shoppers' index was captured through foot traffic density, proximity between shoppers, frequency of customer interactions, duration of social engagements, and spatial distribution patterns within the store. In-store events were evaluated based on the number of promotional activities held, customer participation rates, sales spikes during events, foot traffic increases during events, and customer engagement levels.

Finally, the components of impulsive buying behavior were included in section C. It was recorded in terms of consumers finding products while shopping and choosing to buy them without giving them any thought beforehand, adding additional items to their cart while shopping, being influenced by attractive product features to upgrade their selections and purchase a more expensive or premium version of the products, giving in to the temptation to make impulsive snack purchases of items placed strategically near checkout counters while waiting in line to pay, being influenced by the sense of urgency created by supermarket promotions, and purchasing out of excitement and happiness while in the store.

The researchers made sure that buyers' answers were kept private, their identities were kept anonymous, and participation in the study was entirely voluntary. The questionnaires were distributed to individuals who expressed interest in participating in the study. A Likert scale with 1 denoting "strongly disagree" and 5 denoting "strongly agree" was employed. Of the 450 questionnaires sampled, 429 were returned. SPSS version 21 was used to analyze the coded data. Both descriptive and inferential analyses were performed on the first-hand data.

Indexes for social, design, and environmental cues in stores were created using multiple correspondence analyses. The study's hypotheses were further tested using the ordinary least squares estimation approach.

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Cronbach's α was used to analyze the 429 responses using the model's three variables. The internal consistency of the model's constructs was assessed using the reliability test. As indicated in Appendix 1, Cronbach's Alpha was employed to achieve this, with an approved threshold of at least 0.7. Given that the Cronbach's Alpha coefficient values ranged from 0.7085 to 0.7837, there was no violation of internal consistency among the participants for any of the variables. These were higher than the 0.60 cutoff point suggested by Chua (2006). As a result, the study's instrument and constructs were reliable and valid. Multi-collinearity was tested using the variance inflation index (VIF).

4. Results and Discussion

This section will consist of two subsections: the presentation of results (including descriptive statistics, OLS results, and the moderating effect of age and gender), as well as a discussion of the findings in relation to the specific objectives.

4.1 Presentation of the Results

According to the descriptive statistics in Table 1, the sample was predominantly female, with 258 respondents, or 60.1% of the sample, being female shoppers, and 171 respondents, or 39.9% of the sample, being male shoppers. This implies that shopping in Yaoundé is more important to women than to men. Additionally, consumers between the ages of 20 and 30 made up the majority of the sample, accounting for 63.6% (273) of the total, while 16.1% (69) were between the ages of 30 and 40, 13.3% (57) were under 20, 4% (17) were between the ages of 40 and 50, 1.4% (6) were between the ages of 50 and 60, and 1.6% (7) were respondents 60 years of age and older. It suggests that extremely young people make up the majority of the shoppers. Furthermore, as the mean VIF (1.41) is below Gujarati's (2004) recommended critical value of 2.5, the models do not support the occurrence of multicollinearity. The conclusion that there is no multicolinearity in the model is further supported by the fact that none of the individual VIFs surpass 10 (see Appendix 2).

Table 1: Respondents' Demographic Profile

Variables	Categories	Frequency	Percentage
Gender	Male	171	39.9%
	Female	258	60.1%
Age	Less than 20	57	13.3%
	[20 – 30]	273	63.6%
	[30 – 40]	69	16.1%
	[40 – 50]	17	4%
	[50 – 60]	6	1.4%
	60 and above	7	1.6%

Source: Computed by the authors from field data, 2025

In-store social cues are captured through three key components: the presence of sales associates, the presence of other shoppers, and in-store events. The OLS estimation procedure's results indicate that the sales associates' index coefficient is positive (0.1213628), suggesting that an increase in the number of sales associates will lead to more customers making impulsive purchases at Yaoundé supermarkets. Specifically, a one-point rise in the sales associates index will result in a 0.12-point rise in the impulsive buying behavior of consumers in Yaoundé supermarkets. Furthermore, it is worth noting that this result is statistically significant at the 1% level. As a result, salespeople greatly encourage customers to make impulsive purchases at Yaoundé supermarkets. These findings validate the H1 hypothesis. Similarly, as the coefficient of presence of other shoppers is positive (0.2063048), the presence of other shoppers has a favorable impact on consumers' impulsive buying behavior in supermarkets in Yaoundé. All other things being equal, the presence of other shoppers raises the shoppers' index of impulse buying behavior by 0.21 points.

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Table 2: Disaggregated Composite Index OLS Results

In-store social cues	Sales associates index	0.1213628**	0.0560067	2.17	0.031
	Presence of other shoppers index	0.2063048***	0.0618666	3.33	0.001
	In-store events index	-0.0653281	0.0502364	-1.30	0.194
Gender	Female gender dummy	-0.0481887***	0.0167212	-2.88	0.004
Marital Status	Married status dummy	-0.1570209***	0.0268604	-5.85	0.000
Education	Higher education dummy	-0.0081617	0.0326763	-0.25	0.803
Age	Age [20 – 30]	-0.0254803	0.0251937	-1.01	0.312
	Age [30 – 40]	0.0719486**	0.034902	2.06	0.040
	Age ≥40	0.1687347***	0.0468798	3.60	0.000
	_cons	0.2861286***	0.058274	4.91	0.000
R-squared		**0.3999**	**Adj R-squared**		**0.3751**
F(17, 411)		**16.11**	**Prob > F**		**0.0000**
Breusch-Pagan Chi2		**0.01**	**Prob > chi2**		**0.9208**

Source: Computed by the author from field data, 2025

Table 3: Gender's moderating role in the association between impulse buying and in-store social cues

	(0)(**Model Without Moderation**	(1) (**Model After Moderation**)
VARIABLES	ipbi	ipbi
In-store social index	0.220***	0.311***
	(0.0542)	(0.0825)
Female gender dummy	-0.0459***	0.00524
	(0.0171)	(0.0391)
	(0.0320)	(0.0320)
Age [20 – 30[dummy	-0.0351	-0.0371
	(0.0252)	(0.0252)
Age [30 – 40[dummy	0.0614*	0.0555
	(0.0350)	(0.0352)
Age ≥40 dummy	0.199***	0.185***
	(0.0472)	(0.0480)
Social cues_female		-0.138
		(0.0951)
Constant	0.306***	0.278***
	(0.0406)	(0.0447)
Observations	**429**	**429**
R-squared	**0.351**	**0.355**
F-statistics	**25.21**	**22.96**
Prob > F	**0.0000**	**0.0000**
Breusch Pagan Chi2	**1.58**	**1.75**
Prob > chi2	**0.2082**	**0.1854**

Source: Field data collected by the authors, 2025

Note: *** p<0.01, ** p<0.05, * p<0.1 are the standard errors in parentheses. ipbi stands for impulse buying behavior, 0 for a model without moderation, and 1 for the moderating influence of gender on social cues.

This outcome is significant at the 1% level, much like the preceding variable. In other words, the presence of other customers in the store has a favorable and significant impact on the impulsive buying behavior of Yaoundé supermarket customers. This enables us to accept H2 as well. The coefficient of the in-store events index is negative (-0.0653281), which indicates a negative correlation between in-store events and consumers' impulsive buying behavior in Yaoundé supermarkets, in contrast to other in-store social cue

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components. In actuality, the shoppers' impulse buying behavior index will drop by 0.07 points for every unit point that the in-store event index rises.
This outcome is statistically negligible, however. Therefore, in-store activities have no discernible impact on consumers' impulsive buying habits at Yaoundé supermarkets. Next, we deny H3. Regarding the validity of the results, we observe that, at the 1% level, the overall model remains globally significant, as the likelihood ratio statistic (0.0000) is still significantly lower than 0.01.
Additional findings from equation (1) in Table 3 show that the interaction term between female gender and in-store social cues has a negative coefficient (-0.138), suggesting that female gender reduces the beneficial impact of in-store social cues on consumers' impulsive buying behavior at Yaoundé supermarkets. More specifically, the influence of in-store environmental cues is reduced from 0.220 to 0.173 (0.311 – 0.138) for females. As a result, the association between in-store social cues and consumers' impulsive buying behavior at Yaoundé supermarkets is negatively impacted by female gender. However, this moderating impact is statistically insignificant.

Table 4: The moderating role of age in the association between impulse buying behavior and in-store social cues

	(0)	**(1)**
VARIABLES	ipbi	ipbi
In-store social index	0.220***	-0.102
	(0.0542)	(0.140)
Female gender dummy	-0.0459***	-0.0390**
Age [20 – 30[dummy	-0.0351	0.180***
	(0.0252)	(0.0626)
Age [30 – 40[dummy	0.0614*	-0.0147
	(0.0350)	(0.0763)
Age ≥40 dummy	0.199***	-0.0415
	(0.0472)	(0.0984)
Social cues_Age [20 – 30[		0.368**
		(0.142)
Social cues_Age [30 – 40[		0.186
		(0.167)
Social cues _age ≥40		0.566***
		(0.204)
Constant	0.306***	0.441***
	(0.0406)	(0.0631)
Observations	**429**	**429**
R-squared	**0.351**	**0.368**
F-statistics	**25.21**	**20.17**
Prob > F	**0.0000**	**0.0000**
Breusch Pagan Chi2	**1.58**	**0.69**
Prob > chi2	**0.2082**	**0.4063**

Source: Field data collected by the authors, 2025

Note: *** p<0.01, ** p<0.05, * p<0.1 are the standard errors in parentheses. Ipbi stands for impulsive buying behavior, 0 for a model without moderation, and 1 for the moderating influence of age on design cues.

Looking at the moderating effect of age on the effect of in-store social cues on shoppers' impulse purchasing behavior (equation 1), results from Table 4 indicate that all the coefficients of interaction terms are positive. In contrast, the coefficient of in-store social cues becomes negative (-0.102) and statistically insignificant. A unit point increase in the index of in-store social cues will result in approximately 0.266 points (0.102 + 0.368) compared to 0.220 points without the interaction term. Additionally, at the 5% level, this moderating

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influence is strong. Being between the ages of 20 and 30, therefore, greatly amplifies the impact of in-store social cues on consumers' impulsive buying behavior in Yaoundé supermarkets. The age range [30–40] was found to have no discernible moderating influence on the association between in-store social cues and consumers' impulsive buying behavior, in contrast to the age group [20–30]. Additional findings indicate that for customers aged 40 and above, a one-unit increase in the in-store social cues index results in an approximate 0.464-point (0.102 + 0.362) increase in the impulse buying behavior index in Yaoundé supermarkets. Furthermore, at the 1% level, this moderating impact is statistically significant.

In summary, age significantly increases the impact of in-store social cues on consumers' impulsive buying behavior in Yaoundé supermarkets. Regarding the validity of the findings, it is worth noting that all four models have p-values greater than 0.1 (10%), indicating that they are not heteroscedastic and are statistically significant at the 1% level. As a result, the results mentioned above are trustworthy and legitimate. They are hence predictable.

5. Discussion

Results from our estimation framework indicate that in-store social factors have a significant influence on impulse purchasing behavior among customers in Yaoundé supermarkets. The first component, sales associates, exerts a positive and substantial effect, aligning with Kotler's (1974) atmospherics model, which emphasizes the importance of human elements in retail environments. Empirical findings are consistent with Kim and Park (2021), who argued that friendly, responsive staff enhance emotional engagement, thus promoting spontaneous buying. Lee and Kim (2022) further support this by showing that proactive engagement and personalized recommendations foster trust, reducing hesitation and encouraging impulsive decisions. Zhang et al. (2023) emphasize that credible and knowledgeable salespeople enhance consumer confidence, particularly when communication focuses on product benefits. Additionally, Park and Lee (2022) indicate that professionalism and warmth from staff create positive emotional states and social proof, which can trigger impulse purchases, particularly in uncertain environments. Collectively, these insights underscore the pivotal role of sales associates in encouraging spontaneous buying through emotional and social cues.

Our findings also reveal that the presence of other shoppers has a significant impact on impulse purchasing behavior in Yaoundé supermarkets. This effect aligns with Festinger's (1954) Social Comparison Theory, which explains how individuals evaluate themselves by comparing with others, influencing self-esteem and attitudes. Observing peer purchasing behavior can lead to conformity effects that heighten impulse buying, especially among younger consumers, as noted by Kim et al. (2021). Johnson and Lee (2022) emphasize that multiple shoppers increase arousal levels and shopping excitement, which encourages impulsivity. Nguyen and Park (2023) note that observing others and experiencing social proof fosters consumer confidence in making unplanned purchases. These studies collectively underscore the importance of social influence within retail settings, where shopper density and social cues play pivotal roles in triggering spontaneous buying behavior by creating an environment conducive to social conformity and heightened arousal.

Contrary to expectations, the in-store event index exhibits a negative coefficient (-0.0653), indicating a statistically insignificant but negative relationship with impulse purchasing in Yaoundé supermarkets. This contradicts findings from Kim et al. (2021), who demonstrated that live demonstrations and interactive activities generally increase shoppers' arousal and impulsivity. Similarly, Lee and Park (2022) found that social events, such as product sampling and influencer appearances, foster a sense of community, leading to more impulse purchases. Wang et al. (2023) highlighted that festive or themed events heighten excitement and social validation, thereby boosting impulsivity. Garcia and Rodriguez (2022) observed that peer involvement during such events amplifies social influence mechanisms. The insignificant negative association in our study may be due to contextual or cultural factors, or possibly because the effect of in-store events is less pronounced in the local retail setting, suggesting the need for further exploration of event-specific strategies to stimulate impulse buying.

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Regarding demographic moderations, our analysis reveals that gender does not significantly influence the relationship between environmental cues and impulse buying; however, females tend to weaken this link slightly. This aligns with the statistical insignificance observed, indicating that shoppers' sensitivity to store environment cues in Yaoundé supermarkets does not depend on gender. This contrasts with Ryu, Lee, and Kim (2018), who found gender differences in impulse purchasing in South Korea, which may be attributed to cultural or sample differences. Our results may reflect a predominantly female sample or cultural factors that do not markedly alter shopping responses to environmental stimuli. Conversely, age exhibits a significant positive moderating effect: older consumers (those above 20 years) are more influenced by store design and social cues, thereby amplifying their impulse buying tendencies. This finding resonates with Ryu, Lee, and Kim (2023), who noted that store design cues have a greater impact on older consumers, and aligns with Huang and Chen (2019), who emphasize that store environment effects vary across age groups, with older consumers being more receptive to certain in-store stimuli.

6. Implications for Policy and Conclusion

The primary objective of this study was to investigate the relationship between impulse buying behavior and social cues in retail settings. To achieve this, the study employed a quantitative approach that incorporated surveys and a causal research design. It was based on Leon Festinger's (1954) social comparison theory and modified from Baker et al.'s (2002) model. Using a quantitative, causal research design, surveys were conducted, adapting Baker et al.'s (2002) model and Festinger's (1954) social comparison theory. In-store social cues were measured through the presence of sales associates, visibility of fellow shoppers, and in-store events. Ordinary Least Squares (OLS) estimations revealed a positive and significant impact of in-store social factors on impulse buying. In summary, in-store social cues such as sales associate behavior and the presence of other shoppers significantly stimulate impulse buying in Yaoundé supermarkets, consistent with established theories and empirical studies. While in-store events show an adverse, insignificant effect, this suggests context-specific factors may influence their effectiveness. Demographic factors, such as gender, do not significantly moderate these relationships; however, age plays a crucial role, with older customers being more responsive to environmental and social cues. These findings underscore the importance of tailoring retail strategies to leverage social influence and store environment design, especially considering demographic differences. Overall, the study offers valuable insights into the complex dynamics of impulse purchasing behavior in the local retail context, highlighting avenues for future research and practical applications to enhance consumer engagement, sales intention, actual purchase behavior, and product evaluation. Supermarkets in Cameroon should prioritize training and empowering sales associates to foster positive customer interactions. Creating a welcoming and engaging atmosphere, including the strategic placement of staff and potentially incorporating in-store events, can further stimulate impulse purchases. Understanding how other shoppers influence decisions could also inform store layout and promotional strategies. Continuous monitoring and evaluation of staff performance and customer responses are crucial for maximizing the effectiveness of these interventions.

7. Limitations and Directions for Future Research

However, there are certain restrictions on the study. The main drawback is that the results are based on studies done with customers at four different supermarkets in one city (Yaoundé). Therefore, a more comprehensive study that includes all supermarkets in Cameroon's various cities should be conducted to ensure the findings are applicable nationally. Furthermore, this study did not include additional variables from Kotler's (1974) atmospherics model, such as in-store environmental cues and design aspects; these factors could be incorporated in future research to provide a more thorough analysis.

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Authors' Contributions: Fidelis Vernyuy Sigimi conceived the idea, reviewed the literature, analyzed the data, and prepared the first draft. Buwah Nuela Neba conducted the econometric analysis, supervised the project, and edited the paper. All authors approved the final version of the manuscript.

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Appendix

Appendix 1: Cronbach's alpha test of reliability results

Variables	Number of items	Mean Cronbach's alpha	Decision
Presence of other shoppers	7	0.7969	Acceptable
In-store events	6	0.8764	Very Good
Impulse purchasing behavior	7	0.7884	Acceptable

Appendix 2: Variance inflation index

Variable	VIF	1/VIF
In-store events index	1.88	0.531558
Sales associates index	1.86	0.538562
Presence of other shoppers' index	1.65	0.605977
Mean VIF	**1.796**	

Appendix 3: Questionnaire

Please place a tick **(√)** or a mark **(x)** in the box (cell) that represents your appropriate level of agreement: **5**= **SA**-Strongly Agree, **4**= **A**- Agree, **3**=**N**- Neutral, **2=** D - Disagree, **1**=**SD** - Strongly Disagree.

SECTION B: IN-STORE SOCIAL CUES

	SALES ASSOCIATES	**SA (5)**	**A (4)**	**N (3)**	**D (2)**	**SD (1)**
7	The sales associates possess a good knowledge of the products.					
8	The sales associates are friendly, approachable, and attentive to customers.					
9	The sales associates in the store actively listen to customers.					
10	The sales associates are attentive and responsive.					
11	The sales associates in the supermarket are well-informed and up-to-date on new product launches.					
12	The sales associates have a professional and courteous demeanor.					
13	The sales associates are proactive in processing transactions.					
	PRESENCE OF OTHER SHOPPERS					
14	The shoppers in the supermarket respect queues.					
15	Shoppers observe others' choices, browsing patterns, and product interactions.					
16	Shoppers engage in conversations and try products together with others.					
17	Shoppers often seek advice from fellow shoppers.					
18	The store strikes a good balance between enough shoppers for a vibrant environment and not feeling overcrowded.					
19	The store does not feel overcrowded with too many shoppers.					
20	Shoppers move freely despite the presence of others.					
	IN-STORE EVENTS					
21	The supermarket invites guest speakers and influencers who deliver presentations and share insights.					
22	Customers are offered refreshments, including snacks and beverages, in-store.					
23	The supermarket offers product samples and hosts product demonstrations.					
24	The supermarket organizes contests and interactive experiences in-store.					
25	The in-store events are well-organized and professionally managed.					
26	The in-store events are educational and informational.					

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