Flash-Sale Marketing, Social Media Exposure, and Buying Behavior among College Students in Cotabato City

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ABSTRACT

This study examined the relationships among flash-sale marketing, social media exposure, and buying behavior among college students in Cotabato City. It described respondents' ratings of the three variables and tested their bivariate and simultaneous associations with buying behavior. A quantitative descriptive-correlational design was used, with data gathered through a structured, self-administered questionnaire. The analysis covered 251 complete respondent records and 59 Likert-scale items: 17 on flash-sale marketing, 22 on social media exposure, and 20 on buying behavior. Means and standard deviations summarized responses; Cronbach's alpha assessed internal consistency; Pearson correlation examined bivariate relationships; and multiple linear regression estimated the unique association of each predictor with buying behavior. Flash-sale marketing ($M = 3.493$, $SD = 0.759$) and social media exposure ($M = 3.468$, $SD = 0.757$) were both rated Agree, whereas buying behavior ($M = 3.331$, $SD = 0.830$) was rated Neutral. The item sets demonstrated high internal consistency ($\alpha = .942$, .958, and .959, respectively). Both flash-sale marketing ($r = .689$, $p < .001$) and social media exposure ($r = .806$, $p < .001$) were positively associated with buying behavior. In the joint regression model, social media exposure remained a significant positive predictor ($\beta = .718$, $p < .001$), while flash-sale marketing did not make a statistically significant unique contribution ($\beta = .109$, $p = .161$). Thus, social media exposure showed the stronger unique association when both predictors were considered simultaneously. Given the cross-sectional design and purposive sampling, the findings indicate associations rather than causal effects.

Keywords: Buying behavior, college students, flash-sale marketing, social media exposure

INTRODUCTION

Digital commerce and social media have become important environments in which consumers discover products, evaluate alternatives, and make purchasing decisions. For college students, online platforms provide frequent access to product advertisements, influencer recommendations, user-generated content, and time-limited promotions. Research on online buying behavior among college students has identified multiple factors that shape online purchase decisions, including the availability of information and the convenience of digital shopping (Jadhav & Khanna, 2016). Studies of social media and e-marketing also describe the role of digital content in consumers' purchasing processes (Hima et al., 2024; Hussain et al., 2023).

Flash-sale marketing is a promotional strategy in which discounts or product offers are available for a limited period or in limited quantities. Such restrictions may create urgency and perceived scarcity, encouraging consumers to make faster purchase decisions. The Scarcity Principle explains why limited availability can increase the perceived value or desirability of an offer (Cialdini, 2009). Empirical research has examined the association between flash-sale promotions and impulsive buying in online marketplaces (Lamis et al., 2022), while Wu et al. (2020) investigated how scarcity promotions can lead to impulse purchases in online markets. Research on e-commerce promotions has also considered fear of missing out as a mechanism associated with impulse buying (Andrade et al., 2025; Achmad et al., 2025).

Social media exposure involves more than the frequency of viewing advertisements. It can include repeated exposure to branded content, fear of missing out, narrative involvement, social presence, and perceived

relationships with influencers or content creators. The Stimulus-Organism-Response framework proposes that external environmental stimuli can shape individuals' internal responses and subsequent behavior (Mehrabian & Russell, 1974). This framework has been applied to online marketing and purchase-related responses (Chen et al., 2022; Hussain et al., 2023). In the present study, flash-sale marketing and social media exposure are treated as external stimuli that may be associated with students' reported buying behavior.

Parasocial Interaction Theory also provides a basis for understanding how audiences may develop a perceived sense of connection with media personalities. Horton and Wohl (1956) described parasocial interaction as a form of perceived intimacy between audiences and media figures. More recent research has examined social presence and parasocial interactions in the context of influencers and social media (Kim, 2022). These concepts are relevant to the present study because social media content may affect how students perceive products and promotional messages.

Buying behavior in this study refers to respondents' self-reported purchasing tendencies, including unplanned, immediate, emotionally driven, and sudden-desire purchases. Prior research has examined online impulse buying among college students and the role of personal and interpersonal factors in such behavior (Guo et al., 2024). Studies of social media shopping among college students also provide context for examining digital exposure and purchasing decisions (Shrestha, 2025; Villanueva et al., 2025). In Cotabato City, Alim (2025) has examined social media marketing and consumer buying behavior, making it important to further investigate how flash-sale marketing and broader forms of social media exposure relate to buying behavior among college students.

Although prior studies have examined flash sales, social media marketing, and online purchasing, the present study brings these variables together among college students in Cotabato City. Specifically, it describes the levels of flash-sale marketing, social media exposure, and buying behavior; tests the relationships between each marketing-related variable and buying behavior; and explores their simultaneous association with buying behavior. The study uses a descriptive-correlational design; therefore, its findings are interpreted as statistical associations and not as evidence that the marketing variables cause purchasing behavior.

METHODOLOGY

Research Design

The study employed a quantitative descriptive-correlational research design. The descriptive component summarized respondents' ratings of flash-sale marketing, social media exposure, and buying behavior. The correlational component examined the relationships between each independent variable and buying behavior. Multiple linear regression was used as a supplementary analysis to examine the unique statistical contribution of each predictor when both were entered into the same model. The design does not establish causal effects.

Participants and Sampling

The analyzed dataset contained 251 respondent records. The original manuscript identifies the target participants as college students enrolled in selected higher education institutions in Cotabato City during School Year 2026–2027 who had experience with flash-sale promotions and used social media platforms. Purposive sampling was reported as the sampling approach. The supplied dataset contained complete responses to the 59 substantive Likert-scale items for all 251 records. The exact number and names of participating institutions, recruitment dates, and final eligibility-screening procedure should be confirmed by the researchers before submission.

Research Instrument

The structured, self-administered questionnaire consisted of four parts. Part I collected respondent profile information, including age, gender, year level, and college or program. Part II measured flash-sale marketing through 17 items. Part III measured social media exposure through 22 items. Part IV measured buying behavior through 20 items. The substantive items used a five-point Likert response format ranging from Strongly Disagree to Strongly Agree. The questionnaire dimensions and source attributions are retained from the original manuscript; the researchers should verify each adopted scale and its permission or attribution requirements.

Data Collection and Ethical Considerations

According to the original manuscript, the researchers sought the required permissions from academic authorities, informed eligible students about the study, and invited them to participate voluntarily through a Google Forms questionnaire. The manuscript also states that respondents were informed about the purpose of the study and that their responses were treated confidentially and used for academic purposes. Before journal submission, the researchers should ensure that the final paper accurately identifies the relevant institutional approval or exemption, consent procedure, data-protection measures, and any required ethics reference number. No ethics approval number was present in the supplied manuscript.

Data Analysis

The 59 Likert-scale items were coded numerically from 1 to 5. For each respondent, composite scores were calculated as the mean of the items assigned to each of the three major variables. Means and standard deviations summarized the composite scores and individual questionnaire items. Cronbach's alpha was calculated to assess the internal consistency of each complete item set. Pearson's product-moment correlation was used to test the bivariate relationships between each predictor and buying behavior. Spearman's rank correlation was also checked as a sensitivity analysis. Multiple linear regression entered flash-sale marketing and social media exposure simultaneously as predictors of buying behavior. HC3 heteroscedasticity-robust standard errors and confidence intervals were used for the regression coefficients. Statistical tests were two-tailed, with $p < .05$ used as the significance threshold. Analyses were conducted on the 251 complete records supplied by the researchers.

Because each major questionnaire variable combines several dimensions, the overall Cronbach's alpha values reported below refer to the complete item set for each variable. They do not replace dimension-level reliability estimates if these are required by the target journal or research adviser.

RESULTS AND DISCUSSION

The analysis included 251 respondent records. All 59 substantive questionnaire items had complete numeric responses in the supplied dataset. The findings are presented in the order of the study variables, followed by reliability, correlation, and regression results.

Flash-Sale Marketing

As shown in Table 1, flash-sale marketing obtained an overall mean of 3.493 (SD = 0.759), interpreted as Agree. The item means ranged from 3.163 to 3.717. The highest item mean was FSQ5 (M = 3.717, SD = 1.071), while the lowest was FSBQ3 (M = 3.163, SD = 1.040). The overall result indicates that respondents generally agreed with the statements describing their exposure to or perceptions of flash-sale marketing.

Table 1. Item-level descriptive statistics for flash-sale marketing

Item code	Mean	SD	Interpretation
FSQ1	3.637	1.2000	Agree
FSQ2	3.494	1.1004	Agree
FSQ3	3.498	1.0407	Agree
FSQ4	3.558	1.0843	Agree
FSQ5	3.717	1.0713	Agree
FSAQ1	3.502	1.0710	Agree

FSAQ2	3.618	1.0569	Agree
FSAQ3	3.454	1.0625	Agree
FSAQ4	3.538	1.0166	Agree
FSBQ1	3.315	1.0201	Neutral
FSBQ2	3.319	1.0208	Neutral
FSBQ3	3.163	1.0398	Neutral
FSBQ4	3.363	1.0315	Neutral
FSCQ1	3.518	1.0093	Agree
FSCQ2	3.590	1.0559	Agree
FSCQ3	3.454	1.0319	Agree
FSCQ4	3.641	1.0114	Agree
Overall	3.493	0.7586	Agree

The finding is consistent with research describing flash sales as noticeable promotional events in online marketplaces and examining their relationship with impulse buying (Lamis et al., 2022; Wu et al., 2020). However, the descriptive mean alone does not indicate whether flash-sale marketing is significantly related to buying behavior; this question is addressed through the correlation and regression analyses below.

Social Media Exposure

As shown in Table 2, social media exposure obtained an overall mean of 3.468 (SD = 0.757), interpreted as Agree. The item means ranged from 3.120 to 3.689. The highest item mean was SEBQ4 (M = 3.689, SD = 0.999), and the lowest was SEDQ1 (M = 3.120, SD = 1.136). These results indicate that respondents generally agreed with statements measuring their exposure to social media marketing content and related experiences.

Table 2. Item-level descriptive statistics for social media exposure

Item code	**Mean**	**SD**	**Interpretation**
SEQ1	3.578	1.0416	Agree
SEQ2	3.339	0.9964	Neutral
SEQ3	3.578	0.9741	Agree
SEQ4	3.462	0.9217	Agree
SEQ5	3.538	0.9887	Agree
SEAQ1	3.386	1.0687	Neutral
SEAQ2	3.446	1.0040	Agree
SEAQ3	3.422	1.0940	Agree

SEBQ1	3.394	1.0732	Neutral
SEBQ2	3.426	0.9785	Agree
SEBQ3	3.470	1.0706	Agree
SEBQ4	3.689	0.9995	Agree
SECQ1	3.490	1.1149	Agree
SECQ2	3.478	1.0092	Agree
SECQ3	3.382	1.0262	Neutral
SECQ4	3.486	1.1040	Agree
SECQ5	3.398	1.0847	Neutral
SEDQ1	3.120	1.1356	Neutral
SEDQ2	3.522	0.9729	Agree
SEDQ3	3.558	1.0543	Agree
SEDQ4	3.538	1.0400	Agree
SEDQ5	3.590	1.0445	Agree
Overall	3.468	0.7574	Agree

The result is relevant to studies that examine social media marketing, e-marketing, and influencer-related experiences in relation to consumer responses (Hima et al., 2024; Hussain et al., 2023; Kim, 2022). The relatively high mean indicates reported exposure, but it should not be interpreted on its own as proof that social media content caused respondents to purchase products.

Buying Behavior

As presented in Table 3, buying behavior obtained an overall mean of 3.331 (SD = 0.830), interpreted as Neutral. Item means ranged from 3.135 to 3.454. The highest item mean was BBQ3 (M = 3.454, SD = 1.107), while the lowest was BBDQ2 (M = 3.135, SD = 1.196). The neutral overall result suggests that respondents did not consistently agree or disagree with the statements describing the buying behaviors measured by the questionnaire.

Table 3. Item-level descriptive statistics for buying behavior

Item code	**Mean**	**SD**	**Interpretation**
BBQ1	3.183	1.1412	Neutral
BBQ2	3.390	1.0691	Neutral
BBQ3	3.454	1.1067	Agree
BBQ4	3.434	1.0386	Agree

BBQ5	3.426	1.0907	Agree
BBQ6	3.367	1.1354	Neutral
BBAQ1	3.275	1.1455	Neutral
BBAQ2	3.466	1.0853	Agree
BBAQ3	3.363	1.1136	Neutral
BBAQ4	3.315	1.1030	Neutral
BBBQ1	3.255	1.1588	Neutral
BBBQ2	3.378	1.0900	Neutral
BBBQ3	3.299	1.0929	Neutral
BBCQ1	3.307	1.1443	Neutral
BBCQ2	3.390	0.9955	Neutral
BBCQ3	3.394	1.0353	Neutral
BBCQ4	3.351	1.0414	Neutral
BBDQ1	3.151	1.2268	Neutral
BBDQ2	3.135	1.1956	Neutral
BBDQ3	3.283	1.1505	Neutral
Overall	3.331	0.8296	Neutral

A neutral descriptive mean does not contradict the positive correlations reported later. A variable can have a neutral average level while still varying systematically with another variable. In this dataset, respondents' average reported buying behavior was neutral, but respondents with higher flash-sale marketing or social media exposure scores tended to report higher buying behavior scores.

Internal Consistency of the Measures

Cronbach's alpha was calculated for each complete item set. As shown in Table 4, all three sets produced alpha coefficients above .90, indicating high internal consistency in this sample. These estimates provide sample-based reliability evidence and do not, by themselves, establish construct validity.

Table 4. Internal consistency of the three item sets

Measure	**Items**	**Cronbach's α**	**Interpretation**
Flash-sale marketing	17	0.942	High internal consistency
Social media exposure	22	0.958	High internal consistency
Buying behavior	20	0.959	High internal consistency

Relationships Between the Variables

Pearson correlation analysis showed a positive, statistically significant relationship between flash-sale marketing and buying behavior ($r = .689$, $p < .001$). Social media exposure was also positively and significantly related to buying behavior ($r = .806$, $p < .001$). Spearman correlation produced similar results ($\rho = .702$ and $\rho = .811$, respectively; both $p < .001$), supporting the direction and significance of the bivariate findings.

Table 5 summarizes the correlation results. The association between social media exposure and buying behavior was stronger than the association between flash-sale marketing and buying behavior in this sample. These results are consistent with research linking social media marketing and online content to consumer purchasing responses (Hima et al., 2024; Shrestha, 2025; Villanueva et al., 2025), as well as studies connecting scarcity-based promotions with impulse buying (Lamis et al., 2022; Wu et al., 2020). Correlation does not establish causation, and the findings should be understood as relationships among self-reported scores.

Table 5. Correlations of flash-sale marketing and social media exposure with buying behavior

Predictor	Pearson r	p-value	Spearman ρ	p-value
Flash-sale marketing	0.689	< .001	0.702	< .001
Social media exposure	0.806	< .001	0.811	< .001

Joint Predictive Analysis

A multiple linear regression model was estimated with flash-sale marketing and social media exposure entered simultaneously as predictors of buying behavior. The model explained 65.4% of the variance in buying behavior ($R^2 = 0.654$; adjusted $R^2 = 0.651$). The overall model was statistically significant using HC3 robust inference (robust $F = 98.09$, $p < .001$).

As shown in Table 6, social media exposure was a statistically significant positive predictor of buying behavior when flash-sale marketing was controlled (standardized $\beta = .718$, $p < .001$). Flash-sale marketing was not statistically significant in the joint model (standardized $\beta = .109$, $p = .161$). The variance inflation factor for each predictor was approximately 2.886, indicating that the predictors were correlated but not at a level that automatically prevents their inclusion in the same model.

The regression result adds an important qualification to the bivariate correlations. Flash-sale marketing was significantly correlated with buying behavior when examined alone, but it did not make a statistically significant unique contribution after social media exposure was included in the model. This may reflect the substantial overlap between the two predictors ($r = .808$). The results therefore support a positive bivariate association for both variables, while social media exposure shows the stronger unique association in the joint model. The analysis does not demonstrate that social media exposure causes buying behavior.

Table 6. Multiple regression predicting buying behavior

Predictor	B	Robust SE	Standardized β	p-value	95% CI for B
Flash-sale marketing	0.119	0.085	0.109	0.161	[-0.047, 0.285]
Social media exposure	0.787	0.083	0.718	< .001	[0.624, 0.949]

Model summary: $N = 251$; $R^2 = 0.654$; adjusted $R^2 = 0.651$; robust $F = 98.09$; model $p < .001$. HC3 robust standard errors were used.

CONCLUSION

The study found that college students in Cotabato City generally agreed that they encountered or experienced flash-sale marketing (M = 3.493) and social media exposure (M = 3.468). Their overall buying behavior score was neutral (M = 3.331). The three item sets demonstrated high internal consistency in the analyzed sample.

Both flash-sale marketing and social media exposure had positive, statistically significant bivariate relationships with buying behavior. However, in the multiple regression model, social media exposure remained a significant positive predictor, whereas flash-sale marketing did not show a statistically significant unique contribution after social media exposure was controlled. Accordingly, the findings suggest that social media exposure has the stronger unique statistical association with buying behavior in this sample. Because the research used a cross-sectional, nonexperimental, purposive-sampling design, the results should not be interpreted as causal effects or generalized to all college students in Cotabato City without caution.

RECOMMENDATIONS

1. **College students.** Set personal spending limits, compare products and prices, and pause before purchasing items promoted through flash sales or social media. Students may use a planned budget and prioritize needs over wants to reduce unplanned spending.

2. **Educational institutions.** Strengthen financial literacy activities that address online promotions, influencer marketing, limited-time offers, and responsible digital purchasing. Practical exercises on budgeting and evaluating online claims may help students make informed decisions.

3. **Online sellers and digital marketers.** Present accurate product descriptions, transparent discount information, and clear promotional conditions. Avoid misleading urgency claims or content that obscures product limitations.

4. **Researchers and future studies.** Replicate the study with probability sampling or a broader set of institutions, report respondent-profile distributions using cleaned and consistently coded data, and examine the separate dimensions of each construct. Longitudinal or experimental designs would be needed to make stronger claims about causal effects.

5. **Research team before submission.** Confirm the sampling frame, participating institutions, data-collection dates, ethics documentation, exact scale dimensions, and scoring interpretation ranges. Ensure that all cited works are included in the reference list and that each reference is traceable to its original publication.

Limitations

The study relies on self-reported questionnaire responses and a purposive sample, which may limit representativeness and introduce response or selection bias. The cross-sectional design cannot establish temporal order or causation. The predictors were strongly correlated with each other, so the regression coefficients should be interpreted as their unique associations within this particular model. The supplied dataset did not include a verified sampling frame, institution-level counts, or an ethics approval identifier; these details should be added or clarified by the research team.

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