

Multimedia Ad Exposure and Online Consumer Behavior Among Young Adults and the Mediating Role of Planned Behavior

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Abstract

This study investigated the relationship between multimedia advertising exposure and online shopping behavior among 334 young adults (18–40 years) in urban India. Using validated self-report instruments like the Multimedia Ad Exposure Scale (MMAES) and the Online Consumer Behavior Scale. Grounded in the Theory of Planned Behavior (TPB), the data were analyzed through Pearson correlation, linear regression, one-way ANOVA, and a General Linear Model (GLM). Multimedia ad exposure was a significant positive predictor of online shopping behavior ($r = .495$, $R^2 = .245$, $p < .001$). Males reported higher exposure and shopping scores than females, though advertising effectiveness was statistically equal across genders — suggesting gender gaps in behavior are driven by differential exposure rather than differential responsiveness. Age group (18–24, 25–34, 35–40) did not differentiate shopping behavior, indicating that online shopping has reached behavioral saturation. Findings support the TPB as a mediating framework and carry implications for digital marketing strategy and platform design.

Keywords: Multimedia Ad Exposure, Online Consumer Behavior, Theory of Planned Behavior, Purchase Intention, Digital Natives, Young Adults, Millennials, Generation Z

1. Introduction

Young adults do not just use the internet, they are formed by it. For Millennials and Generation Z, the digital environment is not a tool adopted in adulthood but the medium through which they learned. The education, socialization, and commerce have always been operated by it. This makes their relationship with online advertising different from older consumer groups. They are simultaneously the most exposed and the most skeptical one.

Online shopping itself has moved past novelty. Liang and Lai (2000) first mapped the digital purchase journey onto a five-stage model – i) need recognition, ii) information search, iii) evaluation, iv) purchase, v) post-purchase, but what has changed dramatically since then is the degree to which advertising infiltrates in every stage. A consumer scrolling for lunch recommendations encounters three sponsored posts. The same person watching a video sees a pre-roll ad they cannot skip for six seconds. Passive exposure is the norm, not the exception. U.S. adults average approximately eleven hours of daily media consumption, with over 86 percent of that time spent with ad-supported content [Aslan Oğuz et al., 2023].

The COVID-19 lockdowns has largely accelerated what was slowly becoming a trend. Entire cohorts of consumers who had preferred physical retail were pushed online, and many reluctantly stayed. What accompanied that shift was a surge in multimedia advertising like short-form video, influencer promotions, interactive display formats these all specifically engineered to perform in fragmented attention environments. This is the landscape the present study inhabits.

The research question is : does exposure to multimedia advertising predict online shopping behavior among young adults, and does planned behavior specifically attitude, subjective norms, and perceived behavioral control mediate that relationship? What is less straightforward is the mechanism. Prior research (Wu, 2003; Ajzen, 1991) consistently identifies these three constructs as the proximal antecedents of behavioral intention, but their specific role in translating advertising stimuli into shopping action has not been tested in an integrated model for this demographic.

Five research objectives are framed in this study: (1) examining the effect of multimedia advertising on online shopping behavior; (2) comparing shopping behavior across gender; (3) comparing advertising exposure across gender; (4) examining age-group differences in shopping behavior; and (5) testing whether the advertising-behavior relationship varies by gender.

2. Review of Literature

2.1 Online Shopping and Consumer Motivation

The utilitarian-hedonic distinction has structured consumer behavior research for decades. Babin et al. (1994) drew the line cleanly: some shoppers treat purchasing as a chore to be completed; others treat it as experience to be savored. In digital environments, both orientations coexist and often reinforce each other. Menon et al. (2002) identified escapism, affect, and arousal as the three dimensions of online shopping enjoyment, while Seock et al. (2008) confirmed that enjoyment orientation positively predicts purchase intention. Multimedia advertising, by design, operates directly on these dimensions arousing curiosity, triggering affect, and offering an escape from the routine.

2.2 How Young Adults Actually Respond to Digital Advertising

A qualitative study using focus groups and in-depth interviews with U.S. Millennials (22–37) and Generation Z (under 22) found that both groups preferred short ads featuring music, humor, and influencers. Not because they are passive consumers, but because they have developed efficient filtering mechanisms that long-form traditional advertising simply would not penetrate. Approximately 69 percent of Generation Z actively skips ads when given the option (Munsch, 2021). What breaks through is authenticity & user-generated content, peer endorsements, and creators who feel like people rather than spokespeople.

Dehghani et al.'s findings on YouTube advertising confirm the pattern quantitatively: entertainment value and low irritation are the strongest predictors of purchase intent among digital viewers. Prendergast et al. similarly found that brief, engaging formats outperformed longer ones among digital natives. The implication is not just that short is better, it is that the irrelevance is penalized. Reactance, in Brehm's framework, is the psychological resistance triggered when advertising feels coercive and off-target; among young adults, this threshold is unusually low specially Gen Z population.

2.3 Behavioral Theories in E-Commerce

The Theory of Planned Behavior (Ajzen, 1991) and the Technology Acceptance Model (Davis, 1989) dominate empirical research on online purchase intention, individually and in combination. Nguyen et al. (2023) found that platform image, perceived enjoyment, and attitude were the strongest predictors of

purchase intention among Vietnamese e-commerce users (N = 326), with perceived behavioral control failing to reach significance in that specific context a finding that signals the construct's context which is dependence rather than its irrelevance.

Malaysian studies echo the importance of trust and attitude as direct predictors, while perceived security risk exerts a significant negative pull-on intention (Delafruez et al., 2011). Javadi et al. (2012) catalogued the perceived risks that continue to deter online adoption in emerging markets: financial fraud, product quality mismatch, return disputes, and non-delivery. Mofokeng (2023) added nuance from South Africa (N = 285): on-time delivery and security assurances were the strongest trust-building factors, with trust mediating the path to loyalty. Crucially, the effect was moderated by prior shopping experience for example novice shoppers relied more heavily on these signals than experienced ones.

2.4 Research Gap

Most studies treat multimedia advertising exposure, planned behavior constructs, and purchase intention as separate phenomena rather than components of a single causal chain. Geographic skew compounds the problem that is the bulk of e-commerce behavioral research draws on student samples from Malaysia, Vietnam, South Africa, and broadly defined Western populations. Studies that specifically target Millennials and Generation Z as a unified analytical category, and situate their behavior within the context of multimedia advertising, are scarce. This study will address that gap directly.

3. Method

3.1 Design and Sample

A quantitative, cross-sectional survey design was employed. Data were collected from 334 participants through convenience sampling via an online Google Form distributed across urban Indian populations. Six responses were excluded for non-use of online shopping, yielding a final analytic sample of N = 331. The sample comprised 123 males (36.8%), 208 females (62.3%), and 3 respondents who preferred not to disclose gender (0.9%). Age wise distribution will be: 18–24 years (n = 234, 70.3%); 25–34 years (n = 69, 20.7%); 35–40 years (n = 30, 9.0%). Inclusion criteria required participants to be aged 18–40, resident in an urban area and active social media users.

3.2 Instruments

Two validated scales were used. The Online Consumer Behavior Scale (Ansari, 2019) comprises 35 items scored on a 5-point Likert scale, covering awareness, platform usability, social influence, convenience, security, and cultural factors. Cronbach's alpha across factors ranged from .789 to .919; Content Validity Ratio ranged from .57 to .80. The Multimedia Ad Exposure Scale (MMAES; Aslan Oğuz, Strle & Košir, 2023) comprises 29 items across four subscales: ad engagement (14 items), psychological reactance (9 items), awareness and attitude (3 items), and purchase intention (5 items). Q-correlations for content validity exceeded .70; Cronbach's alpha = .83. In the present sample, the Online Consumer Behavior Scale yielded $\alpha = .954$, indicating excellent internal consistency.

3.3 Procedure and Ethics

Informed consent was obtained from all participants prior to the data collection. Participation was voluntary, anonymous, and could be discontinued at any point of time. Data were used solely for academic purposes. APA ethical guidelines were observed throughout. Statistical analysis was conducted using SPSS and Jamovi, employing Pearson correlation, simple linear regression, one-way ANOVA with Tukey HSD post hoc tests, and a General Linear Model (GLM) with an alpha level of .05.

4. Results and Discussion

4.1 Descriptive Statistics

Online Shopping Behavior yielded a mean score of $M = 130.68$ ($SD = 24.75$) and Multimedia Ad Exposure a mean of $M = 80.84$ ($SD = 24.28$), across $N = 334$. The approximately 50-point mean difference reflects what the literature has documented as partial attentional filtering young adults engage heavily with online shopping while not fully processing all advertising stimuli they encounter (Cho & Cheon, 2004). Standard deviations were comparable across both scales, indicating no floor or ceiling effects that might distort correlational findings.

Table 1: Descriptive Statistics for Core Study Variables

Variable	M	SD	N
Online Shopping Behavior	130.68	24.75	334
Multimedia Ad Exposure	80.84	24.28	334

4.2 H₁₀: Effect of Multimedia Ad Exposure on Online Shopping Behavior

A Pearson correlation confirmed a moderate positive association between the two variables ($r = .495$, $p < .001$). Simple linear regression yielded $F(1, 332) = 107.635$, $p < .001$, $R^2 = .245$, with an unstandardized coefficient of $B = 0.505$. Multimedia ad exposure alone accounts for approximately 24.5 percent of variance in online shopping behavior. The null hypothesis H₁₀ is rejected.

This is not a trivial result. In consumer behavior research, where outcomes are understood to be multiply determined, a single predictor accounting for a quarter of behavioral variance through a survey-based design is a meaningful finding. What it suggests, interpreted through the TPB lens, is that advertising operates upstream of intention: it shapes attitudes toward online purchasing, communicates social norms through peer and influencer visibility, and builds perceived behavioral control by demonstrating how easy the purchase pathway is. The full mediation chain- advertising → attitude/norms/control → intention → behavior. It is implied but requires SEM with separately operationalized TPB constructs for formal testing.

Table 2: Simple Linear Regression — Multimedia Ad Exposure Predicting Online Shopping Behavior

Source	SS	df	MS	F	p
Regression	49927.41	1	49927.41	107.64	< .001
Residual	154001.67	332	463.86		
Total	203929.08	333			

Note. $R^2 = .245$; $B = 0.505$

4.3 H₂₀ and H₃₀: Gender Differences in Shopping Behavior and Ad Exposure

One-way ANOVA revealed significant gender differences in both Online Shopping Behavior, $F(2, 331) = 8.717$, $p < .001$, and Multimedia Ad Exposure, $F(2, 331) = 11.648$, $p < .001$. Males scored higher on both outcomes: Shopping Behavior ($M = 136.00$, $SD = 25.37$) vs. females ($M = 128.14$, $SD = 22.73$); Ad Exposure ($M = 88.90$, $SD = 27.49$) vs. females ($M = 76.26$, $SD = 20.80$). Tukey HSD post hoc analysis

confirmed that the male–female difference was significant for both variables (Shopping: mean diff = 7.861, $p = .013$; Exposure: mean diff = 12.643, $p < .001$). Comparisons involving the “Prefer not to say” group ($n = 3$) are statistically unreliable and should not be interpreted. Both null hypotheses are rejected, with H_{30} partially rejected given the non-significant “Prefer not to say” comparisons.

The male advantage in online shopping runs counter to earlier literature that positioned women as the more active digital consumers (Rodgers & Harris, 2003). This appears to reflect a genuine generational shift: within the 18–40 young adult cohort, males have become high-volume participants in digital commerce, particularly in product categories tied to technology, gaming, and entertainment (Li et al., 2020; Statista, 2023). The higher advertising exposure among males is likely a platform effect video gaming and streaming environments carry a heavier advertising load than the social platforms more evenly distributed across genders.

4.4 H_{40} : Age-Group Differences in Online Shopping Behavior

A one-way ANOVA across three age groups (18–24, 25–34, 35–40) returned a non-significant result, $F(2, 330) = .939$, $p = .392$. Mean scores were similar: 18–24 ($M = 130.66$), 25–34 ($M = 132.67$), 35–40 ($M = 125.27$). The homogeneity of variances assumption was fully met (Levene’s $F = .250$, $p = .779$). All pairwise Tukey HSD comparisons were non-significant, with all 95% CIs crossing zero. H_{40} is retained. This is a null finding worth taking seriously. The absence of age-group differences across a 22-year span suggests that online shopping has reached behavioral saturation within this demographic. Consistent with Rogers’s (2003) diffusion of innovations framework, once a behavior normalizes across a population segment, between-group cohort differences diminish. Individual-level variables like income, product interest, platform preference become the meaningful sources of variance, not age. For practitioners, this challenges the popular assumption that distinct creative strategies are needed for “Gen Z” vs. “Millennials” within the 18–40 range.

4.5 H_{50} : Gender as Moderator of the Advertising–Behavior Relationship

A General Linear Model incorporating Multimedia Ad Exposure (covariate), Gender (fixed factor), and their interaction term explained $R^2 = .268$ of variance in Online Shopping Behavior, $F(5, 328) = 24.00$, $p < .001$. Within the model, only Multimedia Ad Exposure reached significance as a predictor, $F(1, 328) = 13.900$, $p < .001$, $\eta^2p = .041$, $B = 0.668$, $\beta = .655$. Gender as a main effect was non-significant ($p = .099$). The interaction term, the direct test of moderation was also non-significant, $F(2, 328) = 0.579$, $p = .561$, $\eta^2p = .004$. Individual contrasts confirmed this: Male–Female interaction $B = 0.024$, $p = .808$. H_{50} is partially supported.

The moderation non-finding is the most theoretically significant result in the dataset. Males report more advertising exposure and more shopping behavior at the bivariate level but only when exposure is controlled, gender’s main effect on shopping behavior disappears ($p = .099$), and the interaction is clearly null. This pattern implies that the gender gap in online shopping is substantially explained by the gender gap in advertising exposure, not by gender-differentiated responsiveness to advertising. The advertising-to-behavior pathway functions with equivalent strength for males and females contradicting the traditional mindset. One quality, well-constructed campaign aimed at the young adult demographic broadly may outperform two gender-segmented campaigns both in cost efficiency and persuasive reach.

Table 3: Summary of Hypothesis Testing Outcomes

Hypothesis	Test	Key Statistic	Outcome
H ₁₀ : Ad exposure has no effect on online shopping	Linear regression	F(1,332)=107.64, p<.001, R ² =.245	Rejected
H ₂₀ : No gender diff. in online shopping	One-way ANOVA + Tukey	F(2,331)=8.72, p<.001	Rejected
H ₃₀ : No gender diff. in ad exposure	One-way ANOVA + Tukey	F(2,331)=11.65, p<.001	Partially rejected
H ₄₀ : No age-group diff. in shopping	One-way ANOVA	F(2,330)=.939, p=.392	Retained
H ₅₀ : Ad-behavior link does not vary by gender	GLM interaction	F(2,328)=0.579, p=.561	Partially supported

5. Conclusions

Multimedia advertising exposure predicts online shopping behavior among young adults. That relationship is significant, moderate in size, robust across model specifications, and perhaps most practically important does not vary by gender. Males and females respond to advertising with statistically equivalent behavioral output per unit of exposure. The gender gap in shopping behavior, where it exists, traces back to a gap in exposure rather than a gap in persuasibility.

Age does not differentiate within the 18–40 range. Shopping propensity is effectively uniform across this demographic, which matters for how advertising budgets are allocated and how creative strategies are built. Sub-segmenting by age within this cohort offers limited incremental return.

The TPB framework holds up across all five hypotheses, not because TPB constructs were directly measured they were not, and that is the study’s central limitation but because the pattern of findings is consistently aligned with what the theory predicts. The unexplained variance (approximately 73 percent) almost certainly contains the TPB mediators themselves. A structural equation model with attitude, subjective norms, and perceived behavioral control operationalized as latent variables would be the natural and necessary next step.

Other limitations are honest and consequential: cross-sectional design precludes causal inference; self-report measurement is vulnerable to recall and social desirability bias; the convenience sample skews heavily toward the 18–24 age group; and the three-person “Prefer not to say” cell renders any conclusion about gender-diverse consumers statistically impossible. Future research should correct each of these through longitudinal or experimental designs, objective behavioral data from platform analytics, probability sampling, and purposive recruitment of gender-diverse populations.

For digital marketers, the takeaway is direct: invest in multimedia advertising with confidence that it moves young adults toward purchasing behavior, build campaigns that are gender-unified rather than gender-segmented for this age range, and pair advertising quality with frictionless purchase environments because the TPB framework implies that advertising builds the intention but the platform must deliver the perceived control that converts it into action.

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