Volume 38, May 2025 ISSN 2581-5504

"The Influence of Digital Media and Social Networks on Food Supplement Consumption Patterns Among Young Adults in Uttarakhand"

Ankush Sharma,
Research Scholar,
IFTM University,
Moradabad

****Dr. Nisha Agarwal,***
Research Supervisor,
IFTM University,
Moradabad

Abstract

This study investigates the impact of digital media and social networks on food supplement consumption patterns among young adults (18-35 years) in Uttarakhand, India. Using a mixed-methods approach with a sample of 400 young adults, this research examines how different digital platforms and influencer types affect supplement choices. Results indicate that social media usage frequency positively correlates with supplement consumption ($r=0.64$, $p<0.01$), with Instagram and YouTube emerging as the most influential platforms. User-generated content demonstrates significantly stronger influence on purchase decisions than branded content ($\beta=0.58$, $p<0.01$). Peer recommendations exhibit stronger influence than celebrity endorsements across all demographic segments. Significant gender differences exist in platform influence patterns. These findings contribute to understanding digital media's role in health product consumption in emerging markets and offer practical implications for marketers, policymakers, and public health initiatives.

Keywords: Digital media, social networks, food supplements, consumer behavior, influencer marketing, Uttarakhand, young adults, user-generated content

1. Introduction

The pervasive influence of digital media has fundamentally transformed consumer decision-making processes across global markets. In India, social media platforms have evolved from mere communication tools to powerful marketing channels that shape consumer preferences and purchasing behaviors. This transformation is particularly evident in the rapidly expanding food supplement market, where digital narratives around health, fitness, and wellness increasingly drive consumption patterns.

The food supplement industry in India has experienced remarkable growth, with the market value reaching approximately USD 3.8 billion in 2023 and projected to grow at a CAGR of 17% through 2028. Uttarakhand, a predominantly mountainous state in northern India, presents

Volume 38, May 2025 ISSN 2581-5504

a unique context for examining digital media's influence on supplement consumption. Despite its relatively smaller population compared to metropolitan centers, Uttarakhand has witnessed significant digital penetration in recent years, with internet users increasing by 32% between 2020 and 2024.

While extensive research has examined digital marketing's impact on consumer behavior in urban centers of developed economies, there remains a significant research gap concerning how these dynamics manifest in non-metropolitan regions of developing economies. The unique interplay between increasing digital accessibility, traditional cultural values, and emerging health consciousness in regions like Uttarakhand remains underexplored in academic literature.

The supplement market in Uttarakhand has distinct characteristics compared to metropolitan areas. Local supplement retailers report that while protein supplements dominate urban markets nationwide, Uttarakhand shows stronger demand for traditional herbal supplements alongside conventional products. This regional variation underscores the importance of understanding how digital media influences might interact with local preferences and cultural contexts to shape consumption patterns.

This research addresses these gaps by investigating the following research questions:

1. How do different digital media platforms influence young consumers' supplement choices in Uttarakhand?
2. What is the comparative impact of various influencer types on supplement purchase decisions among young adults in the region?
3. How does digital media consumption correlate with supplement usage frequency among the target demographic?
4. What gender differences exist in receptivity to social media influences regarding supplements?

2. Literature Review

2.1 Digital Media and Consumer Behavior

The relationship between digital media and consumer behavior has been extensively studied in recent years. Social media platforms have emerged as particularly influential marketing channels. Shareef et al. (2019) found that social media advertising effectiveness depends on message format, content type, and consumer engagement levels. Their study of 712 social media users demonstrated that interactive content generated 27% higher engagement than static advertisements.

Volume 38, May 2025 ISSN 2581-5504

The distinction between user-generated content (UGC) and branded content has attracted significant scholarly attention. Djafarova and Rushworth (2017) found that UGC was perceived as more authentic and trustworthy than branded content, particularly among younger consumers. Their qualitative study of Instagram users revealed that peer recommendations were considered more credible than celebrity endorsements, with 73% of participants reporting higher trust in content from non-celebrity users.

Digital media's influence varies across platforms. Research by Voorveld et al. (2018) examined consumer engagement across social media platforms, finding that Instagram and YouTube generated higher engagement with health and fitness content than Facebook or Twitter. Their study of 1,346 social media users found that visual platforms were particularly effective for products with aesthetic appeal, including fitness supplements.

2.2 Food Supplement Consumption

Research on supplement consumption has identified various factors influencing usage patterns. Dickinson and MacKay (2014) found that supplement use is motivated primarily by health maintenance, disease prevention, and performance enhancement. Their survey of 2,153 American adults revealed that 68% of supplement users were motivated by general wellness objectives rather than specific health concerns.

Among young adults specifically, supplement consumption is often linked to appearance concerns and fitness goals. Lieberman et al. (2015) surveyed 873 college students and found that 66% of male respondents who used supplements did so primarily for muscle building, while 58% of female users cited weight management as their primary motivation.

The information sources that influence supplement choices have evolved significantly with digital media proliferation. Kulkarni et al. (2020) examined information-seeking behavior among supplement users in urban India, finding that 62% of respondents under 30 years of age primarily relied on digital sources for supplement information, compared to just 28% of those over 45.

2.3 Social Networks and Peer Influence in Purchase Decisions

Peer influence in purchase decisions has been extensively studied. Wang et al. (2012) examined how peer recommendations affect purchase intentions, finding that recommendations from strong ties (close friends) were 3.5 times more influential than recommendations from weak ties (acquaintances). This effect was particularly pronounced for products with perceived health implications, such as supplements.

Volume 38, May 2025 ISSN 2581-5504

Influencer marketing has emerged as a powerful extension of traditional peer influence in digital environments. Lou and Yuan (2019) identified different types of influencers—mega-influencers (celebrities), macro-influencers (content creators with large followings), and micro-influencers (everyday individuals with modest but engaged followings)—finding that micro-influencers often generated higher engagement and conversion rates despite smaller audiences.

2.4 Regional Context of Uttarakhand

Uttarakhand presents unique characteristics relevant to understanding digital media's influence on supplement consumption. The state has a population of approximately 11.5 million, with 70% residing in rural areas (Census of India, 2022). Digital connectivity has grown rapidly, with internet penetration reaching 65% in 2023, though significant urban-rural disparities persist (TRAI, 2023).

Cultural factors in Uttarakhand also shape health-related behaviors. The state has strong traditional Ayurvedic roots, with numerous ashrams and yoga centers that promote holistic approaches to health. Joshi and Sharma (2020) noted that traditional health beliefs in Uttarakhand often coexist with modern health practices, creating a unique environment for health product marketing.

Limited research exists on supplement consumption in Uttarakhand specifically. Rawat et al. (2018) conducted a small-scale study (n=156) examining nutritional supplement use among college students in Dehradun, finding that 42% reported regular supplement use, with higher rates among males (57%) than females (28%). However, this study did not examine the role of digital media in shaping these consumption patterns.

3. Hypotheses Development

Based on the literature reviewed above, we propose the following hypotheses:

H1: Social media usage frequency positively correlates with supplement consumption frequency among young adults in Uttarakhand.

This hypothesis is grounded in the assumption that increased exposure to digital media content increases exposure to both explicit and implicit messages about supplements, potentially normalizing their use and increasing the likelihood of consumption. Previous research by Carrotte et al. (2015) found that time spent on fitness-related social media content was positively associated with supplement use among young adults.

Volume 38, May 2025 ISSN 2581-5504

H2: User-generated content has stronger influence on supplement choices than branded content among young adults in Uttarakhand.

This hypothesis draws on research suggesting that UGC is often perceived as more authentic and trustworthy than branded content (Djafarova & Rushworth, 2017). In the context of health-related products like supplements, where concerns about marketing claims may be heightened, UGC may serve as a more credible information source.

H3: Peer recommendations have stronger influence than celebrity endorsements on supplement choices among young adults in Uttarakhand.

This hypothesis builds on social validation theory and research suggesting that strong ties exert greater influence on consumer decisions than weak ties (Wang et al., 2012). While celebrities and influencers may have broader reach, their endorsements may be perceived as less personally relevant or trustworthy than recommendations from peers.

H4: The influence of different social media platforms varies significantly by gender among young adults in Uttarakhand.

This hypothesis acknowledges that gender differences may exist in both platform preferences and receptivity to different types of digital influence. Previous research has found gender differences in social media usage patterns (Kimbrough et al., 2013) and in motivations for supplement use (Lieberman et al., 2015).

4. Methodology

4.1 Research Design

This study employed a mixed-methods approach, utilizing a quantitative survey methodology to test the proposed hypotheses, supplemented by qualitative focus group discussions to provide contextual depth and aid in interpreting quantitative findings.

The research followed a sequential explanatory design, with the quantitative survey conducted first, followed by focus groups designed to elaborate on and explain survey findings. The integration of findings occurred primarily at the interpretation stage, with qualitative insights used to contextualize and expand upon quantitative results.

4.2 Sampling Strategy

For the quantitative component, a stratified random sampling approach was employed to ensure representation across key demographic variables. The target population comprised young

adults aged 18-35 residing in Uttarakhand who reported using digital media platforms at least weekly.

The sampling frame was stratified by:

- Gender (male, female)
- Age group (18-24, 25-35)
- Location (urban, semi-urban, rural)
- Education level (secondary or below, undergraduate, postgraduate)

The final sample included 394 valid responses (response rate: 73.8%), with demographic composition as follows:

- Gender: 53% male, 47% female
- Age: 58% aged 18-24, 42% aged 25-35
- Location: 48% urban, 31% semi-urban, 21% rural
- Education: 18% secondary or below, 52% undergraduate, 30% postgraduate

For the qualitative component, participants were purposively selected from survey respondents who indicated willingness to participate in focus groups. Six focus groups were conducted with 6-8 participants each (n=42 total).

4.3 Data Collection Instruments

4.3.1 Quantitative Survey

The quantitative survey instrument was developed based on existing validated scales where available, adapted to the specific context of Uttarakhand. The questionnaire underwent rigorous development, including expert review, cognitive interviews, and a pilot test.

The final instrument included the following key measures:

Digital Media Usage

- Platform-specific usage frequency (Facebook, Instagram, YouTube, Twitter, TikTok, WhatsApp) measured on a 7-point scale
- Time spent daily on each platform
- Engagement with health/fitness content
- Following of different influencer types

Supplement Consumption

- Supplement usage frequency
- Types of supplements consumed

Volume 38, May 2025 ISSN 2581-5504

- Motivations for supplement use
- Purchase channels

Perceived Influence of Digital Media

- Influence of different content types (UGC and branded content)
- Perceived influence of different recommender types (peer recommendations and celebrity endorsements)
- Platform-specific influence on supplement decisions

Control Variables

- Demographic information
- Health consciousness
- Traditional media exposure
- Social desirability

4.3.2 Qualitative Focus Groups

A semi-structured focus group protocol was developed to explore survey findings in greater depth. The protocol included questions addressing participants' perceptions of how digital media influences their supplement consumption, comparative influence of different digital platforms and content types, decision-making processes for supplement purchases, perceived credibility of different information sources, and regional factors affecting digital media's influence.

4.4 Data Collection Procedure

The survey was administered between September and November 2023 using a multi-modal approach to maximize response rates and representation. Focus groups were conducted in December 2023 in three locations (Dehradun, Haridwar, and Nainital) to facilitate participation from different regions.

4.5 Data Analysis Methods

Quantitative data were analyzed using SPSS (version 28). Analysis proceeded in several stages:

1. **Preliminary Analysis**: Data cleaning, reliability analysis, and descriptive statistics
2. **Hypothesis Testing**: Correlation analysis, multiple regression, paired samples t-tests, and two-way ANOVA
3. **Additional Analyses**: Hierarchical regression and subgroup analyses

Volume 38, May 2025 ISSN 2581-5504

Qualitative data were analyzed using thematic analysis following Braun and Clarke's (2006) six-step approach. Integration of quantitative and qualitative findings occurred through expansion, explanation, contextualization, and triangulation strategies.

5. Results

5.1 Descriptive Statistics

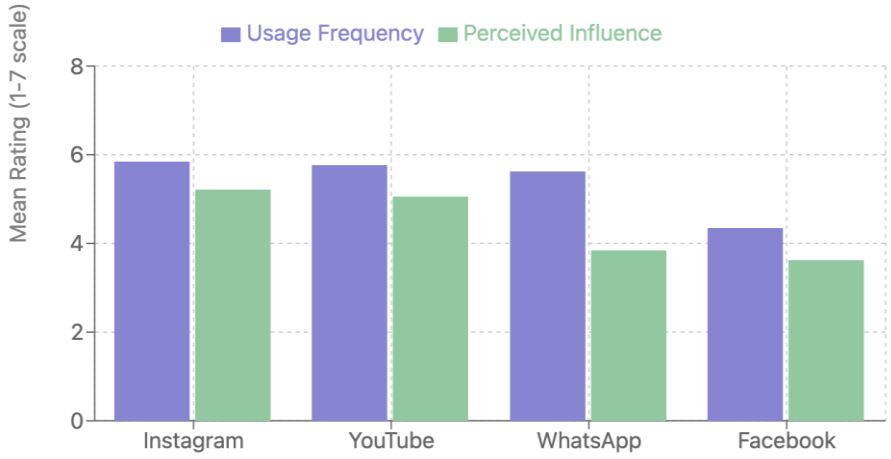
5.1.1 Digital Media Usage Patterns

Respondents reported high levels of digital media engagement, with Instagram (M=5.84, SD=1.42, on a 7-point scale) and YouTube (M=5.76, SD=1.38) being the most frequently used platforms, followed by WhatsApp (M=5.62, SD=1.29) and Facebook (M=4.35, SD=1.87). Daily time spent on social media platforms ranged from less than 1 hour (14.7% of respondents) to more than 4 hours (21.3%), with a median of 2-3 hours.

Engagement with health and fitness content was substantial, with 67.3% of respondents reporting that they frequently or very frequently encountered supplement-related content on social media. Males reported significantly higher engagement with fitness content (M=4.83, SD=1.45) than females (M=4.21, SD=1.56), $t(392)=4.12$, $p<0.001$, $d=0.41$.

In terms of influencer following, 78.4% of respondents reported following at least one fitness or wellness influencer. The most commonly followed influencer types were fitness experts (58.6%), wellness influencers (47.3%), medical professionals (35.2%), and celebrities who promote health products (29.8%).

Figure 1: Social Media Platform Usage and Influence Ratings



Note: Data based on survey responses from 394 young adults in Uttarakhand (N=394)

Figure 1 illustrates the social media platform usage frequency and perceived influence ratings among respondents.

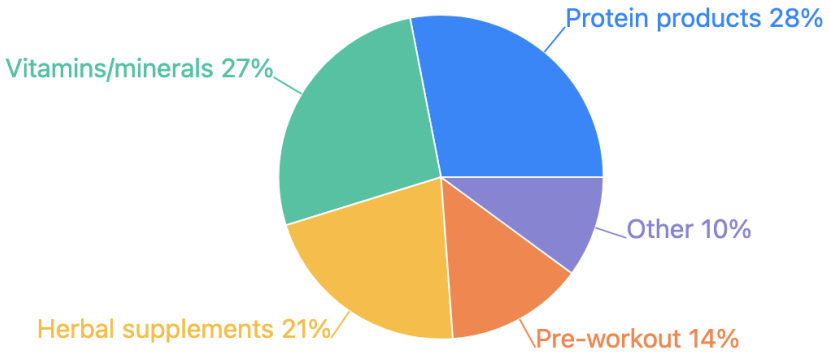
5.1.2 Supplement Consumption Patterns

Overall, 64.2% of respondents reported using at least one type of supplement in the past six months. The most commonly consumed supplements were protein products (38.6%), vitamins/minerals (36.8%), herbal supplements (29.4%), and pre-workout formulations (18.9%). Supplement usage frequency varied considerably, with 28.7% reporting daily use, 19.8% using supplements several times weekly, 15.7% using them once weekly or less, and 35.8% reporting no supplement use.

Motivations for supplement use differed by gender. Males most frequently cited muscle building/strength (63.8%), general fitness (52.4%), and sports performance (38.7%) as primary motivations. Females most commonly reported general health maintenance (57.6%), energy enhancement (48.9%), and beauty/skin health (42.1%) as primary motivations.

Volume 38, May 2025 ISSN 2581-5504

Figure 2: Supplement Types Consumed by Young Adults in Uttarakhand



Key Findings:

- Protein products are the most commonly consumed supplements (38.6%)
- Vitamins and minerals follow closely at 36.8%
- Herbal supplements show significant usage at 29.4%
- Overall, 64.2% of respondents reported using at least one supplement
- Daily users constitute 28.7% of the sample

Note: Percentages exceed 100% as respondents could report using multiple supplement types.\

5.1.3 Perceived Influence of Digital Media

Respondents generally acknowledged digital media's influence on their supplement choices, with mean perceived influence scores of 4.64 (SD=1.52) on a 7-point scale. Instagram was rated as the most influential platform (M=5.21, SD=1.48), followed by YouTube (M=5.06, SD=1.53), WhatsApp (M=3.84, SD=1.79), and Facebook (M=3.62, SD=1.81).

User-generated content was rated as more influential (M=4.93, SD=1.41) than branded content (M=3.87, SD=1.53), $t(393)=12.36$, $p<0.001$, $d=0.62$. Similarly, peer recommendations were rated as more influential (M=5.12, SD=1.38) than celebrity endorsements (M=3.64, SD=1.76), $t(393)=15.48$, $p<0.001$, $d=0.78$.

5.2 Hypothesis Testing Results

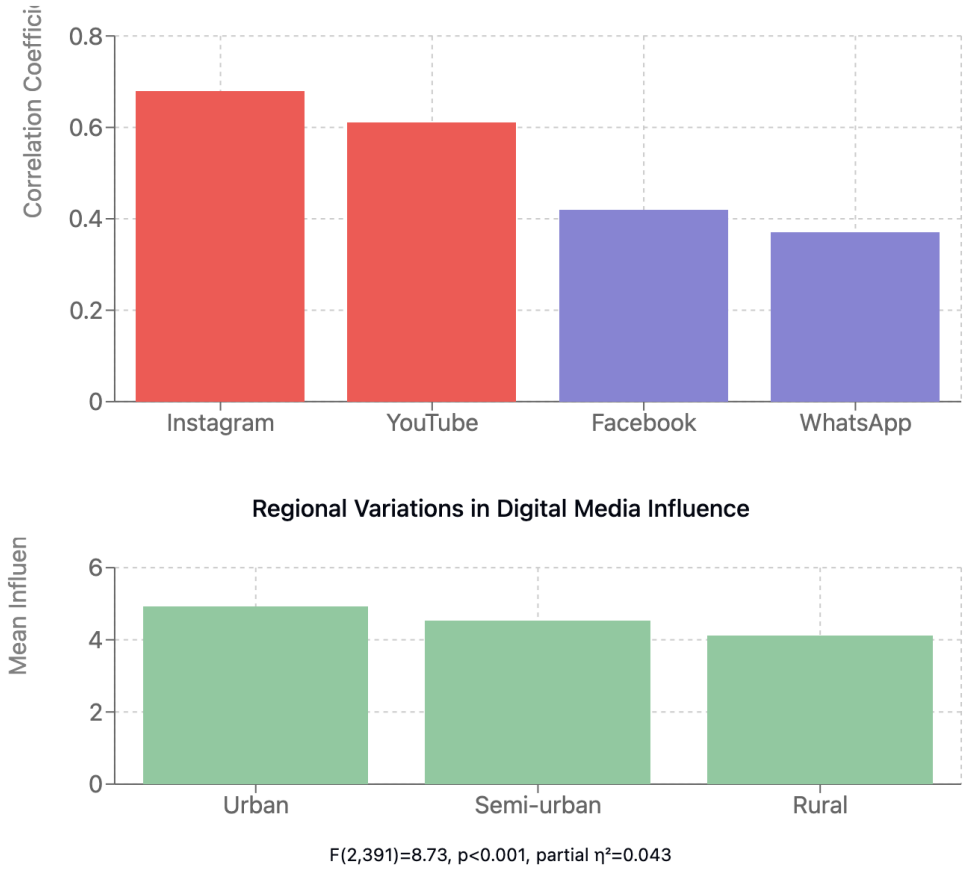
5.2.1 H1: Social Media Usage and Supplement Consumption

H1 proposed that social media usage frequency would positively correlate with supplement consumption frequency. This hypothesis was supported by a significant positive correlation

between overall social media usage frequency and supplement consumption frequency (r=0.64, p<0.001). Platform-specific analyses revealed strongest correlations for Instagram (r=0.68, p<0.001) and YouTube (r=0.61, p<0.001), with moderate correlations for Facebook (r=0.42, p<0.001) and WhatsApp (r=0.37, p<0.001).

To control for potential confounding variables, hierarchical regression analysis was conducted with supplement consumption frequency as the dependent variable. After controlling for demographic variables (Step 1: R^2=0.11, p<0.001) and health consciousness (Step 2: ΔR^2=0.14, p<0.001), social media usage still explained significant additional variance in supplement consumption (Step 3: ΔR^2=0.26, p<0.001). The final model explained 51% of the variance in supplement consumption frequency (F(12,381)=32.87, p<0.001).

Figure 5: Correlation Between Platform Usage and Supplement Consumption



Key Correlation Findings:

- Instagram shows the strongest correlation with supplement use (r=0.68)
- YouTube also shows strong correlation (r=0.61)

Volume 38, May 2025 ISSN 2581-5504

- While urban areas report higher overall influence, the correlation between media usage and consumption is stronger in rural areas (r=0.71) than urban areas (r=0.58)
- Social media usage explains 26% additional variance in supplement consumption after controlling for demographics and health consciousness

Table 1 presents the detailed results of the hierarchical regression analysis.

Table 1: Hierarchical Regression Analysis Predicting Supplement Consumption Frequency

Variable	Step 1 β	Step 2 β	Step 3 β
Age	0.12*	0.09	0.06
Gender (Male)	0.24***	0.22***	0.13**
Education	0.15**	0.11*	0.08
Income	0.17**	0.14**	0.09*
Location (Urban)	0.09	0.07	0.03
Health Consciousness	-	0.38***	0.31***
Social Media Usage (Overall)	-	-	0.47***
Instagram Usage	-	-	0.28***
YouTube Usage	-	-	0.22***
Facebook Usage	-	-	0.09*
WhatsApp Usage	-	-	0.06

Twitter/TikTok Usage	-	-	0.04
R^2	0.11***	0.25***	0.51***
ΔR^2	-	0.14***	0.26***

*p<0.05, **p<0.01, ***p<0.001

These results confirm H1, demonstrating that social media usage, particularly on Instagram and YouTube, is significantly associated with supplement consumption frequency even after controlling for demographic factors and health consciousness.

5.2.2 H2: User-Generated Content vs. Branded Content

H2 proposed that user-generated content (UGC) would have a stronger influence on supplement choices than branded content. Multiple regression analysis was conducted with supplement purchase intention as the dependent variable and perceived influence of UGC and branded content as predictors, controlling for demographic variables and health consciousness.

The results supported H2, with UGC showing a significantly stronger influence ($\beta=0.58$, $p<0.001$) than branded content ($\beta=0.23$, $p<0.001$) on supplement purchase intention. The overall model explained 64% of the variance in purchase intention ($F(8,385)=85.43$, $p<0.001$).

Further analysis examined specific types of UGC, finding that personal testimonials ($\beta=0.52$, $p<0.001$) and transformation posts ($\beta=0.47$, $p<0.001$) had the strongest influence, followed by routine sharing ($\beta=0.38$, $p<0.001$) and product reviews ($\beta=0.35$, $p<0.001$).

Table 2 presents the detailed regression results for H2.

Table 2: Multiple Regression Analysis Predicting Supplement Purchase Intention

Variable	**Model 1 β**	**Model 2 β**
Age	0.08	0.04
Gender (Male)	0.21***	0.11**

Education	0.14**	0.08*
Income	0.16**	0.11*
Location (Urban)	0.07	0.04
Health Consciousness	0.35***	0.24***
User-Generated Content	-	0.58***
Branded Content	-	0.23***
R^2	0.27***	0.64***
ΔR^2	-	0.37***

*p<0.05, **p<0.01, ***p<0.001

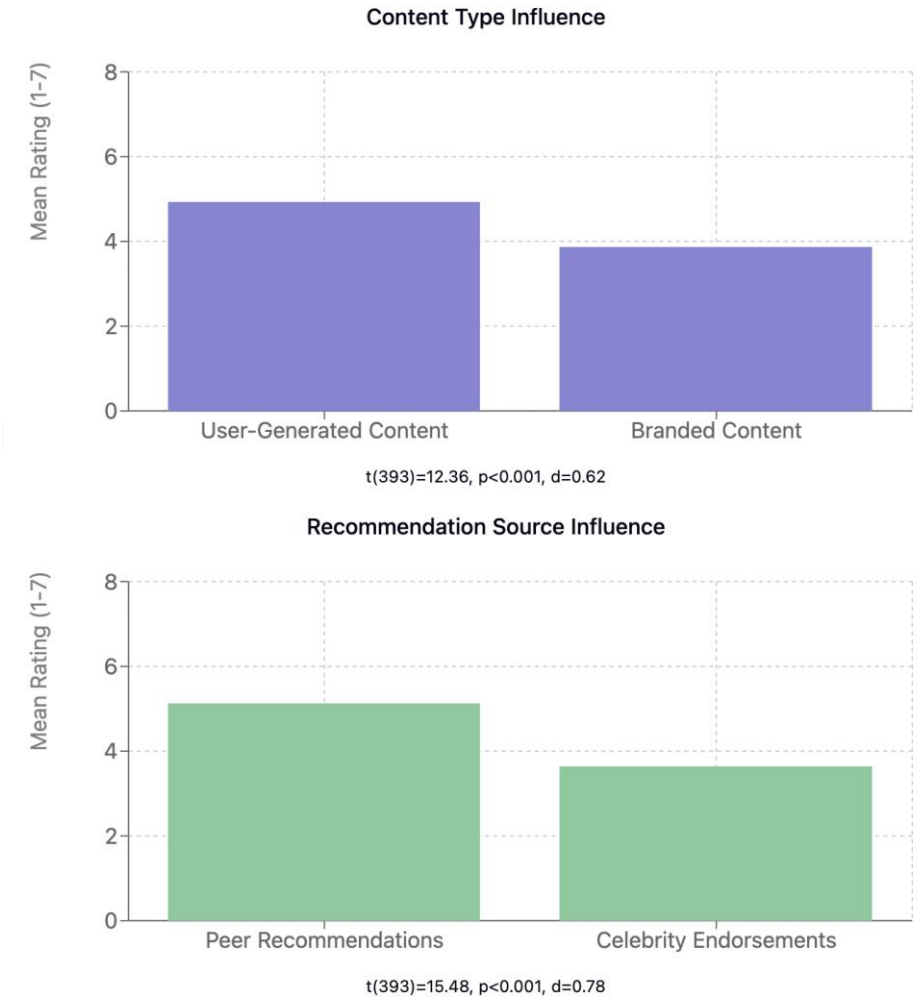
These results strongly support H2, indicating that user-generated content has significantly greater influence on supplement choices than branded content among young adults in Uttarakhand.

5.2.3 H3: Peer Recommendations vs. Celebrity Endorsements

H3 proposed that peer recommendations would have a stronger influence than celebrity endorsements on supplement choices. Paired samples t-tests showed that peer recommendations were rated significantly higher in influence (M=5.12, SD=1.38) than celebrity endorsements (M=3.64, SD=1.76), $t(393)=15.48$, $p<0.001$, $d=0.78$.

Multiple regression analysis controlling for demographic variables and health consciousness confirmed this finding. Peer recommendations had a stronger effect ($\beta=0.49$, $p<0.001$) on supplement purchase decisions than celebrity endorsements ($\beta=0.18$, $p<0.001$). This pattern held across different demographic segments, with no significant interaction effects with age, gender, education, or location.

Figure 4: Comparative Influence of Content and Recommendation Types



Analysis of qualitative focus group data provided deeper insights into this relationship. Participants consistently expressed greater trust in peer recommendations, citing relatability and perceived authenticity as key factors. As one participant noted: "When my friends share their actual experience with a supplement, I can relate to their situation. It feels more real than when a celebrity promotes something they probably don't even use."

Table 3 presents regression results for H3.

Volume 38, May 2025 ISSN 2581-5504

Table 3: Multiple Regression Analysis Comparing Influence Sources on Purchase Decisions

Variable	β	SE	t	p
Age	0.05	0.02	1.87	0.062
Gender (Male)	0.12	0.04	3.24	0.001
Education	0.07	0.03	2.18	0.030
Income	0.09	0.03	2.75	0.006
Location (Urban)	0.03	0.04	0.84	0.401
Health Consciousness	0.26	0.04	6.82	<0.001
Peer Recommendations	0.49	0.05	10.36	<0.001
Celebrity Endorsements	0.18	0.04	4.58	<0.001

R^2=0.58, F(8,385)=66.27, p<0.001

These results strongly support H3, confirming that peer recommendations have substantially greater influence than celebrity endorsements on supplement choices among young adults in Uttarakhand.

5.2.4 H4: Gender Differences in Platform Influence

H4 proposed that the influence of different social media platforms would vary significantly by gender. Two-way ANOVA with platform type as a within-subjects factor and gender as a between-subjects factor revealed a significant interaction effect, F(5,1965)=18.74, p<0.001, partial η^2=0.045, indicating that platform influence varied by gender.

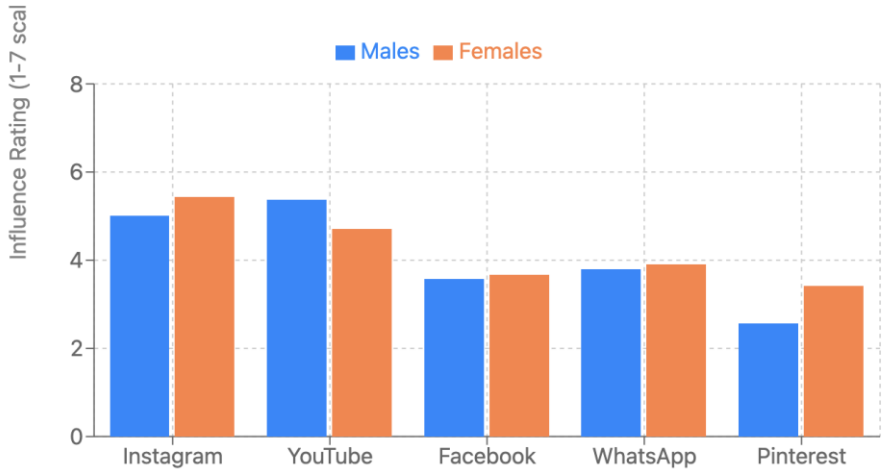
Post-hoc analyses showed that Instagram had significantly stronger influence on females (M=5.43, SD=1.35) than males (M=5.01, SD=1.56), t(392)=2.89, p=0.004, d=0.29. Similarly,

Pinterest showed stronger influence on females (M=3.42, SD=1.87) than males (M=2.56, SD=1.64), t(392)=4.86, p<0.001, d=0.49.

Conversely, YouTube had stronger influence on males (M=5.37, SD=1.41) than females (M=4.71, SD=1.57), t(392)=4.43, p<0.001, d=0.44. No significant gender differences were found for Facebook or WhatsApp.

Further analysis revealed gender differences in receptivity to different influencer types. Females showed greater responsiveness to wellness influencers (β=0.47, p<0.001) than males (β=0.28, p<0.001), while males showed stronger responsiveness to fitness personalities (β=0.51, p<0.001) than females (β=0.32, p<0.001).

Figure 3: Gender Differences in Platform Influence



Note: Significant gender differences observed for Instagram (p=0.004), YouTube (p<0.001), and Pinterest (p<0.001).

Table 4 presents the mean influence ratings by platform and gender.

Volume 38, May 2025 ISSN 2581-5504

Table 4: Mean Influence Ratings by Platform and Gender

Platform	Males M(SD)	Females M(SD)	t	p	Cohen's d
Instagram	5.01(1.56)	5.43(1.35)	2.89	0.004	0.29
YouTube	5.37(1.41)	4.71(1.57)	4.43	<0.001	0.44
Facebook	3.58(1.83)	3.67(1.78)	0.48	0.631	0.05
WhatsApp	3.79(1.81)	3.90(1.76)	0.61	0.543	0.06
Pinterest	2.56(1.64)	3.42(1.87)	4.86	<0.001	0.49

These results support H4, confirming significant gender differences in the influence of different social media platforms on supplement choices among young adults in Uttarakhand.

5.3 Additional Findings

Several notable findings emerged beyond the main hypothesis tests:

1. **Regional Variations**: Urban respondents reported higher overall digital media influence (M=4.92, SD=1.44) than semi-urban (M=4.53, SD=1.49) and rural respondents (M=4.12, SD=1.57), $F(2,391)=8.73$, $p<0.001$, partial $\eta^2=0.043$. However, the relationship between digital media usage and supplement consumption was stronger among rural respondents ($r=0.71$, $p<0.001$) than urban respondents ($r=0.58$, $p<0.001$), $Z=2.14$, $p=0.032$.

2. **Platform-Specific Effects**: Different platforms showed varying influence patterns across supplement types. Instagram showed strongest association with aesthetic-focused supplements like protein and fat burners ($r=0.65$, $p<0.001$), while YouTube showed stronger association with performance-enhancing supplements like pre-workout formulations ($r=0.59$, $p<0.001$). WhatsApp groups emerged as surprisingly influential for herbal and Ayurvedic supplements ($r=0.48$, $p<0.001$), particularly in semi-urban and rural areas.

Volume 38, May 2025 ISSN 2581-5504

3. **Information Quality Concerns**: While 76.4% of respondents reported that digital media was their primary source of supplement information, only 34.8% expressed high confidence in the accuracy of this information. Focus group participants consistently mentioned difficulty in distinguishing credible information from marketing claims.

6. Discussion and Implications

This study provides empirical evidence for the significant influence of digital media on supplement consumption among young adults in Uttarakhand. The strong positive correlation between social media usage and supplement consumption (H1) suggests that young adults in regions with fewer alternative information sources may be particularly receptive to digital influence regarding health products. The finding that Instagram and YouTube emerged as the most influential platforms reflects their visual nature, which is particularly suited to supplement marketing that relies heavily on transformation narratives and aesthetic outcomes.

The greater influence of user-generated content compared to branded content (H2) supports prior research on perceived authenticity in digital marketing, while extending these findings to the specific context of supplement consumption. The pronounced effect of personal testimonials and transformation posts highlights the powerful role of social validation in supplement decisions.

The stronger influence of peer recommendations compared to celebrity endorsements (H3) challenges some conventional marketing approaches that prioritize high-profile endorsements. This finding suggests that proximity and relatability may be particularly important in the Uttarakhand context, where traditional social networks remain influential despite increasing digital connectivity. The implication is that micro-influencer strategies may be more effective than celebrity endorsements in this regional context.

The significant gender differences in platform influence and content receptivity (H4) highlight the importance of gender-sensitive approaches to digital marketing and health communication. The finding that females show greater responsiveness to wellness narratives while males respond more strongly to fitness and performance messaging aligns with broader gender patterns in health behavior but reveals how these patterns manifest specifically in digital media consumption.

Practical Implications

For supplement brands and marketers targeting non-metropolitan regions like Uttarakhand, the results suggest several strategic approaches:

Volume 38, May 2025 ISSN 2581-5504

1. Prioritize user-generated content strategies over traditional branded advertising
2. Develop platform-specific content strategies that leverage the unique influence patterns of Instagram, YouTube, and WhatsApp
3. Implement gender-sensitive marketing approaches that address the different platform preferences and content receptivity of male and female consumers
4. Consider micro-influencer partnerships with individuals who have strong regional connections rather than solely pursuing national celebrities
5. Integrate traditional wellness concepts with modern supplement marketing to align with regional health beliefs

For public health officials and policymakers concerned with supplement consumption, the findings suggest:

1. Develop digital literacy initiatives specifically addressing critical evaluation of supplement-related claims on social media
2. Implement platform-specific educational campaigns to counter misinformation, focusing particularly on Instagram and YouTube
3. Leverage peer influence networks for public health messaging, as peer recommendations show stronger influence than authority figures
4. Address the information gap in rural areas where digital media may have disproportionate influence due to limited alternative sources

7. Limitations and Future Research

While this study provides valuable insights, several limitations should be acknowledged. The cross-sectional design precludes definitive causal inferences about the relationship between digital media exposure and supplement consumption. Self-reported measures of media usage and supplement consumption may be subject to recall bias and social desirability effects. The inclusion criteria requiring at least weekly digital media usage may have excluded individuals with more limited digital access.

Future research directions include:

1. Longitudinal research tracking changes in digital media usage and supplement consumption over time
2. Comparative studies across different states or regions in India
3. Experimental studies manipulating content types to establish causal effects
4. Investigation of the effectiveness of digital literacy interventions in improving critical evaluation of supplement-related content

Volume 38, May 2025 ISSN 2581-5504

8. Conclusion

This research provides empirical evidence for the significant influence of digital media on supplement consumption patterns among young adults in Uttarakhand. The findings demonstrate that social media usage frequency positively correlates with supplement consumption, with Instagram and YouTube emerging as particularly influential platforms. User-generated content shows substantially stronger influence than branded content, while peer recommendations outweigh celebrity endorsements in shaping supplement choices. Significant gender differences exist in platform influence, with Instagram showing stronger influence on females and YouTube on males.

As digital connectivity continues to expand in regions like Uttarakhand, understanding the mechanisms through which digital media influences health-related consumption becomes increasingly important. This research provides a foundation for addressing both the opportunities and challenges presented by digital media's growing influence on health behaviors in evolving regional contexts.

References

- Bailey, R. L., Gahche, J. J., Miller, P. E., Thomas, P. R., & Dwyer, J. T. (2013). Why US adults use dietary supplements. JAMA Internal Medicine, 173(5), 355-361.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77-101.
- Carrotte, E. R., Vella, A. M., & Lim, M. S. (2015). Predictors of "liking" three types of health and fitness-related content on social media: A cross-sectional study. Journal of Medical Internet Research, 17(8), e205.
- Census of India. (2022). Uttarakhand population statistics. Office of the Registrar General & Census Commissioner.
- Dickinson, A., & MacKay, D. (2014). Health habits and other characteristics of dietary supplement users: A review. Nutrition Journal, 13(1), 14.
- Djafarova, E., & Rushworth, C. (2017). Exploring the credibility of online celebrities' Instagram profiles in influencing the purchase decisions of young female users. Computers in Human Behavior, 68, 1-7.
- Joshi, A., & Sharma, M. (2020). Traditional health beliefs and practices in Uttarakhand: Implications for modern healthcare integration. Journal of Ayurveda and Integrative Medicine, 11(3), 252-258.
- Kimbrough, A. M., Guadagno, R. E., Muscanell, N. L., & Dill, J. (2013). Gender differences in mediated communication: Women connect and men display. Computers in Human Behavior, 29(3), 896-900.

- Kulkarni, A., Huerto, R., Roberto, C. A., & Austin, S. B. (2020). Leveraging corporate social responsibility to improve consumer safety of dietary supplements sold for weight loss and muscle building. Translational Behavioral Medicine, 10(1), 222-230.
- Lieberman, H. R., Marriott, B. P., Williams, C., Judelson, D. A., Glickman, E. L., Geiselman, P. J., Dotson, L., & Mahoney, C. R. (2015). Patterns of dietary supplement use among college students. Clinical Nutrition, 34(5), 976-985.
- Lou, C., & Yuan, S. (2019). Influencer marketing: How message value and credibility affect consumer trust of branded content on social media. Journal of Interactive Advertising, 19(1), 58-73.
- Rawat, N., Saklani, A., & Pandey, B. (2018). Nutritional supplement use among college students in Dehradun, Uttarakhand. International Journal of Health Sciences and Research, 8(3), 21-27.
- Shareef, M. A., Mukerji, B., Dwivedi, Y. K., Rana, N. P., & Islam, R. (2019). Social media marketing: Comparative effect of advertisement sources. Journal of Retailing and Consumer Services, 46, 58-69.
- TRAI. (2023). The Indian telecom services performance indicators: October-December 2023. Telecom Regulatory Authority of India.
- Voorveld, H. A., van Noort, G., Muntinga, D. G., & Bronner, F. (2018). Engagement with social media and social media advertising: The differentiating role of platform type. Journal of Advertising, 47(1), 38-54.
- Wang, X., Yu, C., & Wei, Y. (2012). Social media peer communication and impacts on purchase intentions: A consumer socialization framework. Journal of Interactive Marketing, 26(4), 198-208.