Minnesota Journal of Business Law and Entrepreneurship

Volume 2026, No. 3

ISSN: 1540-3270

Role of Big Five Personality Traits in Shaping Gen-Z's Attitude Towards Personalized Digital Advertising: Evidence from Madhya Pradesh

[1]Ms.Shaan Malhotra, [2]Dr.Prarthana Joshi, [3]Dr.Manisha Singhai

[1]Assistant Professor: Prestige Institute of Management and Research, Indore (MP) Deemed to be University
Research Scholar: Sage University Indore

[2]Associate Professor -Sage University Indore (MP)

[3]Associate Professor –Prestige Institute of Management and Research, Indore (MP) Deemed to be University

Abstract:

The rapid proliferation of digital advertising, underpinned by artificial intelligence (AI) and advanced data analytics, has fundamentally transformed how brands communicate with consumers. Personalized digital advertising, which tailors content based on individual behavioural, demographic, and psychographic data, has become a dominant strategy across platforms such as Instagram, YouTube, Facebook, and ecommerce portals. Despite its widespread use, consumer responses to personalized advertising vary considerably, suggesting that individual-level psychological factors play a critical role in shaping perceptions and attitudes. This paper investigates the role of the Big Five personality traits—Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism—in shaping Generation Z's attitude towards personalized digital advertising. The study is contextualized within Madhya Pradesh, India, a region witnessing rapid digital adoption among young consumers, yet significantly understudied in the domain of digital advertising psychology. Drawing upon the Big Five Inventory (BFI), Self-Congruity Theory, and the Personalization-Privacy Paradox framework, the study employs a quantitative research design using a structured questionnaire administered to 350 Gen-Z respondents aged 18–27 years. Perceptions on six important dimensions were examined including relevance, informativeness, trust, entertainment value, privacy issues, and purchase intent. In this study, it was believed that both Openness and Extraversion will have a positive effect on advertising attitude whereas Neuroticism will increase privacy issues and decrease acceptance of advertisements. The results of this study will add value to the existing empirical studies conducted in India about advertising perception influenced by personality traits of the respondents.

Introduction

In the twenty-first century, the field of advertising has seen an immense change due to the merging of internet connection, mobile technology, and data analytics. The old-fashioned ways of advertising, which involved generalized targeting and message sending, have been replaced by the latest form of digital advertising involving customized use of consumer data. Statista (2024) states that in 2023 alone, the spending on digital advertising globally crossed USD 600 billion.

One of the leading players of the digital advertising industry is the generation commonly referred to as Generation Z (Gen-Z). This generation includes people born between 1997 and 2012. One of the characteristics of the generation is the fact that they represent the real "digital natives," i.e., people who were born into the age of the internet and mobile devices. In India, Gen-Z represents a significant proportion of internet users since many young people in the country use smartphones and various social networking sites. According to Telecom Regulatory Authority of India (TRAI, 2023), more than 850 million people subscribe to the internet service in India, and the proportion of Gen-Z is very high when it comes to using social media websites like Instagram, YouTube, and Snapchat.

Madhya Pradesh, India's second biggest state in terms of area, has seen a fast digital evolution over the last decade, especially since the launch of low-cost mobile internet services after 2016. Places like Indore, Bhopal, Gwalior, and Jabalpur have come up as significant digital consumption centers, with more and more youth using internet-

based platforms every day. Nonetheless, there is no research available in the academic literature about the consumption behaviour in this region, thus making this area a research void in this subject matter.

Background and Legal Framework

In this background, personalized digital advertisements (PDAs) are an important marketing technique that can be used to reach out to the Gen-Z consumers. Nevertheless, people vary significantly in their perception of such advertisements, in processing them, and in the way they react to them. Individual differences exist not just in the terms of demographic variables but also due to their individual personality characteristics. For the purpose of exploring these differences among the consumers, a widely researched and well-established framework of Big Five Personality Theory (OCEAN) is useful.

Even though personalized digital advertising campaigns are quite common nowadays, not much is known about the impact of individual personality characteristics on Generation Z's perception and attitude toward such advertising campaigns in the Indian context. Whereas many studies have examined this relationship between advertising and personality worldwide (e.g., Saha et al., 2024; Ranjbarian et al., 2022; Morimoto, 2022), there is very limited research done in India, especially focused on the Indian state of Madhya Pradesh and its Generation Z consumers.

There is a problem of the personalization-privacy paradox, which is rather relevant to this issue. Related to the use of their personal data, Generation Z consumers are seeking personalized services while being concerned about privacy issues related to the use of their personal data at the same time.

Research Objectives

- The objectives of the research are as follows:
- To investigate the effects of Big Five personality traits on the attitude of Gen-Z towards personalized digital advertisements in Madhya Pradesh.
- To find out the prominent personality traits of the Gen-Z population in Madhya Pradesh.
- To investigate the awareness and exposure level of Gen-Z towards personalized digital advertisements.
- To measure Gen-Z perceptions of personalized advertisements based on factors like relevance, informativeness, trustworthiness, entertainment, privacy concerns, and purchase intentions.
- To establish the link between Big Five personality traits and advertisement perception factors.
- To give practical suggestions to digital marketers for targeting Gen-Z customers.

Research Questions

- What are the perceptions of Gen-Z consumers from Madhya Pradesh towards personalized digital advertisements?
- Which are the most common Big Five personality traits among Gen-Z participants?
- To what extent do personality traits affect perceptions of personalized digital advertisements?
- What is the personality trait that affects perceptions of advertising dimensions the most?
- How do privacy concerns moderate the relationship between personality traits and acceptance of advertising?
- To what extent does advertising attitude affect purchase intention of Gen-Z consumers?

Significance of the Study

This research has made various significant contributions. Theoretically, this is because the research has expanded the scope of using the Big Five personality model and Self-Congruity Theory within the area of personalized

digital advertising for Gen-Z customers in a rural Indian setting. On an empirical note, this research has filled a vital gap in research through the collection of region-specific primary data in the state of Madhya Pradesh. Managerially, the results of this research will help digital marketers and advertisers in improving their methods of segmentation and targeting of advertisements.

Scope and Delimitations

The research geographically focuses on the region of Madhya Pradesh in India. The target population consists of the Generation Z members aged between 18-27 who are regular users of the internet and are exposed to personalized digital advertisements. Digital marketing is focused in the context of the research and only the aspect of digital marketing will be considered.

Review of Literature

Generation Z and Digital Consumer Behaviour

The generation of Z individuals were born between 1997 and 2012, representing the first generation of digital natives who grew up being immersed in the world of constant connectivity (Priporas et al., 2017). The members of this generation are highly digitally literate, multiplatform in nature, and expect personalized engagement from the brands. The researches constantly emphasize the fact that Gen-Z individuals interact with the brand through social media platforms spending three to five hours every day on their digital devices (McKinsey & Company, 2023).

In India, the habits of the Gen-Z generation are shaped by fast development of affordable internet connectivity in connection with Jio's cheaper data services that became available in 2016. In the study conducted by Saha et al. (2024) using mixed methods and examining the behavior of Gen-Z consumers in Indian universities, it was shown that this generation has higher interaction with PSMAs, however, the level of their acceptance varies depending on different personalities. McKee et al. (2023) found out that Gen-Z consumers live in "paradox of personalization" situation, requiring personalized content but worrying about data privacy at the same time.

Personalized Digital Advertising: Conceptual Overview

Personalized digital advertising refers to the use of consumer data—including demographic information, browsing history, purchase behavior, location, and psychographic profiles—to deliver targeted, contextually relevant advertising messages to individual users (De Keyzer et al., 2022). The advent of AI and machine learning has dramatically enhanced the precision and scalability of personalization, enabling platforms to serve highly tailored advertisements in real time.

Personalized advertising is evaluated across multiple perceptual dimensions. Relevance refers to the degree to which an advertisement matches the consumer’s interests and needs. Informativeness captures the perceived value of the information conveyed. Entertainment reflects the hedonic value derived from the advertisement. Trust encompasses the consumer’s belief in the advertiser’s honesty and reliability. Privacy concern reflects apprehension regarding data collection practices. Finally, purchase intention captures the likelihood of engaging in a transaction as a result of advertising exposure (Morimoto, 2022).

Zogaj et al. (2021) established that trustworthiness in personal advertising was strongly influenced by the level of self-congruence – how much the ad reflects the self-concept of the consumer. The relationship between personality traits and perceptions of advertising becomes the theoretical foundation for this current study.

In the research of Peter et al. (2025) on Gen AI-powered personalized advertising, it was revealed that there were strong emotional responses and experiences in favor of AI-based personalized ads among Gen Z population. However, privacy concerns were high especially regarding psychological profiling and transparency of data use. According to Frontiers in Communication (2025), Indian Gen Z consumers simultaneously cherished hyper-personalized ads and feared for the misuse of data.

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The Big Five Personality Model

The Big Five Model or Five-Factor Model (FFM) is one of the most researched models in personality psychology. Introduced by Costa & McCrae (1992) and measured with the help of such scales as Big Five Inventory (BFI) and NEO-PI-R, the model consists of the following broad personality traits: Openness to Experience (O), Conscientiousness (C), Extraversion (E), Agreeableness (A), and Neuroticism (N).

Openness to Experience trait involves the aspects of curiosity, creativity, aesthetic taste, and receptivity to novelty. People scoring high on Openness are usually more prone to use new technology and innovative ads. The research of Tucakovic & Nedeljkovic (2022) proved that Openness positively impacts consumer behavior towards new products and technologies while the Frontiers in Psychology (2022) revealed the links between Openness and trust in the digital information.

Conscientiousness is defined as such qualities as responsibility, self-discipline, goal achievement, and organization. People scoring high in this trait are usually more attentive to digital content consumption and more receptive to advertising oriented on informing and usefulness. The research of De Keyzer et al. (2022) showed that the conscientious people had a positive correlation between click-through intention towards personalized advertising and high perception of its usefulness.

Extraversion is associated with sociability, assertiveness, enthusiasm, and positive affect. People with high scores in extraversion trait are actively using social media and are prone to building emotional relationships with brands. Saha et al. (2024) found that the extraversion-dominant Gen-Z consumers perceived PSMAs positively while Butt et al. (2021) associated extraversion with constructive interpersonal interactions and brand-oriented behavior.

Agreeableness includes cooperation, trust, empathy, and being oriented towards harmony. Agreeable people tend to respond well to advertisements highlighting social value. Nevertheless, Saha et al. (2024) showed that agreeableness-dominant Gen-Z users had a negative attitude towards personalized ads on social media since they are more sensitive to manipulations.

Neuroticism is linked to traits such as anxiety, moodiness, and increased perception of threats. Neurotic people often have higher privacy issues concerning personalized ads. Liu et al. (2023) found out that Neuroticism decreases consumer attitudes towards online advertising because it increases perceptions of risks and intrusion. In turn, Saha et al. (2024) suggest that neuroticism-dominant consumers might have a positive attitude towards personalized ads because of increased needs for relevance.

Personality Traits and Advertising Perception: Prior Research

There is a wealth of research examining the link between personality traits and advertising response. According to the results obtained by Ranjbarian et al. (2022) through the meta-analysis of 15 studies (308 correlations total), the impact of personality traits on advertisement responses was statistically significant and mainly depended on three dimensions: Agreeableness, Extraversion, and Openness. Brand familiarity and advertising appeal type were moderators of these relationships.

The influence of personality on consumer attitudes towards annoying ads was explored by Morimoto (2022). Specifically, this researcher discovered that Neuroticism positively impacted irritation and avoidance, whereas Openness negatively influenced ad avoidance.

Nazir et al. (2023) conducted an investigation into the connections between personality traits and consumer attitudes towards AR advertisements and concluded that all five personality dimensions showed statistically significant correlations with consumer attitudes, which acted as a main mediator. The same researchers found that Openness and Extraversion positively affected consumers' intentions of making purchases via their mobile devices. This association between personality traits and hedonic mobile shopping was examined for four generations by Lissitsa and Kol (2021).

The link between personality traits and Gen-Z's perceptions of personalized advertisements is not well-examined yet. However, the most relevant paper on this topic, authored by Saha et al. (2024) and using mixed methods, demonstrated that consumers from Gen-Z with dominant Extraversion, Conscientiousness, and Neuroticism traits positively perceived PSMAs, while consumers high in Openness and Agreeableness had negative perceptions. It was found out that positive perceptions increase the usefulness and click-through intentions of the consumers, while high privacy concerns decrease the intentions of the latter group of respondents.

Privacy Concerns and the Personalization-Privacy Paradox

Personalization-privacy dilemma refers to the conflict that exists between consumers' need for personalization of the experience and their concern about data privacy (Awad & Krishnan, 2006). The dilemma is especially prevalent among Gen-Z, the generation that combines high digital engagement and high sensitivity to issues of privacy. McKee et al. (2023) applied the theory of privacy calculus to study the paradoxical behavior of Gen-Z and determined that the consumers make cost-benefit assessments before accepting personalized advertisements or taking preventive actions to avoid personalized ads by installing blockers and private mode of browsing.

According to Frontiers in Communication (2026), Indian Gen-Z consumers (especially educated and urbanized) have high levels of concerns about psychological profiling and trading of data within the framework of personalized advertising. Neuroticism and Agreeableness are expected to act as moderators of the relationship between privacy concern and advertising acceptance.

Research Gap

While the extant literature provides valuable insights into personality-advertising relationships, several gaps remain. First, the majority of studies are conducted in Western or East Asian contexts, with limited research from India and virtually none from regional Indian settings such as Madhya Pradesh. Second, most studies examine advertising perception in aggregate, without disaggregating responses by the specific personality traits most predictive of individual perception dimensions. Third, the interplay between personality traits, privacy concerns, and purchase intention within a single integrated model has rarely been empirically tested. The present study aims to address these gaps by conducting a targeted, primary-data study of Gen-Z consumers in Madhya Pradesh.

Theoretical Framework and Hypotheses

Theoretical Foundation

This study draws on three complementary theoretical frameworks:

Self-Congruity Theory (Sirgy, 1982) asserts that consumers assess products, brands, and advertisements according to the extent to which they match their self-concepts. As far as advertisements are consistent with the personality and self-concept of a person, they form positive attitudes and behavior intentions toward the product or service. Thus, Self-Congruity Theory serves as the theoretical basis for connecting personality characteristics and advertising attitude.

The Big Five Personality Model (Costa & McCrae, 1992) represents an empirically confirmed and generally recognized personality assessment tool that considers individual differences in personality and can be applied to understand the effect of different personality traits on the response to advertising messages.

Privacy Calculus Theory (Culnan & Armstrong, 1999) helps to understand the behavior of consumers online by suggesting that people evaluate the advantages and disadvantages of the personalized online experience. It is important for analyzing the personalization-privacy issue.

Conceptual Framework

According to the conceptual model, the Big Five personality traits will have a direct impact on Gen-Z's perception of personalized digital advertising. These traits will be measured through six aspects, including relevancy, informativeness, trust, entertainment value, privacy concern, and purchase intention. The demographic and digital behavior aspects will act as the moderating variables for the research.

Hypotheses

Based on the theoretical framework and prior literature, the following hypotheses are proposed:

H1: Big Five personality traits collectively and significantly influence Gen-Z's attitude towards personalized digital advertising.

H1a: Openness to Experience positively influences attitude towards personalized digital advertising.

H1b: Conscientiousness positively influences attitude towards personalized digital advertising.

H1c: Extraversion positively influences attitude towards personalized digital advertising.

H1d: Agreeableness positively influences attitude towards personalized digital advertising.

H1e: Neuroticism negatively influences attitude towards personalized digital advertising.

H2: Big Five personality traits significantly influence trust in personalized digital advertising.

H3: Big Five personality traits, particularly Neuroticism, significantly influence privacy concerns about personalized digital advertising.

H4: Positive attitude towards personalized digital advertising significantly influences purchase intention.

H5: Privacy concern negatively mediates the relationship between personality traits and purchase intention.

Research Methodology

Research Design

The study employs both descriptive and analytical methods of research. The descriptive approach is used in the study because the research attempts to describe the personality of Gen-Z and their attitude towards advertisements in Madhya Pradesh, while the analytical method involves examining the relationship between the two variables using inferential statistics.

Research Approach

Quantitative research method is used. It is suitable for use as the study is aimed at determining the nature and strength of relationships between personality characteristics and perceptions of advertising.

Data Sources

The primary data is obtained from Gen-Z customers from the state of Madhya Pradesh via a structured survey. The secondary data is gathered from scholarly papers, government publications, trade magazines, and digital marketing databases.

Population and Sampling

The selected target population will consist of Gen-Z members living in Madhya Pradesh between the ages of 18 and 27, who use the internet extensively and have been subjected to personalized advertising through digital means on at least one medium. The sampling technique used in this study will be a stratified random sampling technique where the population is stratified on the basis of gender (male, female, other) and location (metropolitan cities like Indore and Bhopal versus Tier-2 & Tier-3 cities).

The data collection instrument will be a structured self-administrative questionnaire divided into five parts:

Part A - Demographics: Age, gender, education qualification, occupation, monthly income, and residential location.

Part B - Digital behavior: Type of social media sites, number of hours spent online per day, frequency of online shopping, and awareness about personalized advertising.

Part C - Personality traits: 44 item Big Five Inventory, which is a well-validated measure of the five personalities on a 5-point Likert Scale (1-Strongly disagree to 5-strongly agree) developed by John and Srivastava (1999).

Part D - Personalized Advertising perception: The six items will be adapted from Morimoto (2022), De Keyzer et al. (2022) and Saha et al. (2024). These include the measures of relevance, informativeness, trust, entertainment, privacy concern, and purchase intention on a 5-point Likert scale.

Part E - Overall Attitude: Three global items of attitude towards personalized digital advertising.

Validity and Reliability

Construct validity is assessed through Confirmatory Factor Analysis (CFA) in AMOS. Internal consistency reliability is measured using Cronbach's Alpha, with a threshold of 0.70 considered acceptable (Nunnally, 1978). Convergent validity is assessed via Average Variance Extracted (AVE > 0.50), and discriminant validity via the Fornell-Larcker criterion.

Data Collection Procedure

Data is collected through a combination of online (Google Forms distributed via social media and university networks) and offline (printed questionnaires distributed in educational institutions and public spaces in Jabalpur, Bhopal, Indore, Gwalior) methods. To ensure adequate response diversity in data collection, a period of six to eight weeks was targeted.

Data Analysis Techniques

The following analytical methods are utilized:

- Descriptive Statistics: Frequencies, percentages, mean and standard deviations are calculated for demographic characteristics, digital behavior characteristics, personality trait scores, and advertising perception scores.
- Reliability Test: The reliability of the scales and subscales are measured using Cronbach's Alpha.
- Correlation Analysis: Correlation coefficients are calculated between personality traits scores and advertising perception dimensions using Pearson's correlation matrix.
- Multiple Regression Analysis: Stepwise Multiple Regression Analysis is carried out to determine the predictors of advertising perception dimensions (relevance, trust, privacy concerns, purchase intentions) by personality traits.
- One Way ANOVA: This is used to see whether there are any differences in advertising perception scores by personality dominant groups.
- Structural Equation Modeling (SEM): This method is conducted via AMOS to validate the entire proposed framework.

Software: IBM SPSS 26.0 for descriptive and regression analysis; AMOS 24 for SEM; SmartPLS for robustness check.

Ethical Considerations

Prior to data collection a consent was obtained from all participants. Participation is entirely voluntary, and respondents are assured of the anonymity and confidentiality of their responses. Data is stored securely and used solely for academic research purposes.

Expected Findings and Discussion

Demographic and Digital Behaviour Profile

Personality Trait Distribution

Based on prior literature, Extraversion and Agreeableness are expected to emerge as dominant personality traits among Gen-Z respondents, reflecting the cohort's social media-driven social nature (Saha et al., 2024). Neuroticism scores are anticipated to be moderate to high, consistent with research linking Gen-Z to elevated anxiety and digital stress (McKee et al., 2023). Openness to Experience is expected to show moderate prevalence, given the digital environment's constant exposure to novel content and ideas.

Personality Traits and Advertising Perception

Following the studies by Saha et al. (2024) and Ranjbarian et al. (2022), Extraversion and Conscientiousness are likely to be positive predictors of overall advertising attitude on the dimensions of relevance and informativeness. Openness is anticipated to have a positive effect on entertainment perception and trust because of open people being more receptive to new types of advertisement. The relationship between Agreeableness and advertising attitude is likely to be inconsistent, possibly even negative when considering perceived intrusiveness because of increased sensitivity to manipulations within the communication.

Neuroticism is supposed to be the most powerful predictor of privacy concern based on the findings of Liu et al. (2023) stating that neurotics tend to experience higher levels of anxiety in the digital environment and perceive personalized advertising as an attack on their autonomy. This connection is likely to be moderated by privacy concern in the SEM analysis with Neuroticism having an indirect effect on purchase intention via privacy concern.

Privacy Concern as Mediator

In line with Privacy Calculus Theory (McKee et al., 2023), privacy concern will be found to mediate the connection between Neuroticism and purchase intention. People with higher levels of Neuroticism are expected to display higher levels of privacy concern, making it less likely that they would want to interact with personalized advertisements and buy things recommended by ads. Such an insight would be extremely important for advertisers, pointing to the necessity of being transparent about handling personal information in such cases.

Purchase Intention

Positive advertising attitude—driven by perceptions of informativeness, relevance and entertainment and trust—is expected to significantly and positively predict purchase intention, supporting H4. This aligns with De Keyzer et al.'s (2022) finding that personalized advertising leads to stronger click-through and purchase behaviors when perceived usefulness is high.

Practical Implications and Recommendations

Implications for Digital Marketers

The implications of this study are significant for the practice of digital marketing directed at Gen-Z audience in India. First of all, personality segmentation represents a highly effective complement to demographic segmentation. Advertisers need to use psychographic profiling tools to understand the personality structure of their target audience and craft corresponding advertisement campaigns. So, for example, ads targeted at Extraverted Gen-Zs can include elements related to social sharing and peer validation, while products and services aimed at Conscientious audience may benefit from emphasizing the utility, quality, and informational nature of the ad.

Second, privacy transparency becomes a crucial factor, especially for neurotic personality segments. Advertisers must disclose how their consumer's data will be used, allow consumers to opt into personalization options rather than force them to opt out of those options, and allow consumers to control their own data. This will not only solve the privacy issue but increase advertising trust among all personality segments.

Finally, entertainment becomes an important dimension of advertisement, especially for Open Gen-Zs. Advertisers should aim to create entertaining, creative, and novel ads, such as augmented reality ads and short videos.

Implications for Advertising Platforms

In India E-commerce and Social media should consider integrating personality-sensitive advertising algorithms that adjust content delivery based on inferred psychographic profiles. This would increase engagement among the receptive types (e.g., Extraverts and Conscientious users), while reducing advertising fatigue among sensitive personality types (e.g., Neurotic and Agreeable users)

Implications for Academic Research

The current study is a significant contribution to the nascent area of personality-based consumer advertisement perception literature in India. It provides a repeatable framework for future researchers working in this area in other states in India as well as a baseline data set for comparison in future longitudinal studies. In addition, the combined application of theories such as Self-Congruity theory, Big Five Personality model, and Privacy Calculus theory is another important theoretical template for future advertising research.

Limitations and Future Research Directions

Limitations of the Study

The current research is vulnerable to some limitations, which impact its validity and generalizability. First, the geographical location of the study is confined to Madhya Pradesh, hence making it less applicable to the other states of India, having varied socioeconomic, cultural, and technological contexts. Second, being based on the cross-sectional research design, this research lacks ability to make any causal inferences on personality-advertising relationship dynamics because it reflects advertising perception at one moment of time only. Third, the use of the BFI to measure personality might be subject to the social desirability effect. Fourth, fast dynamics of the innovation in digital advertising techniques can obsolesce the results obtained by this study, thus requiring periodical updates of the results. Fifth, due to the limitation by the minimum age (18 years old), the younger members of Generation Z (under 18 years old) were not included into the sample.

Directions for Future Research

Research can be further done to conduct comparative studies about the relationship between personality and advertising in different states in India. The longitudinal study design will allow understanding the influence of the age factor and changes in the algorithm of advertisements platforms on the effect of personality characteristics on advertisement perception. Comparative studies of the reaction of Generation Z and Millennials to personalized advertisements will contribute to the current literature on the psychology of digital advertisements. Further research can be conducted to study the effect of advertisements created using the technology of artificial intelligence, particularly deep fake advertisements and GenAI advertisements, on the personality-advertisement relationship. This topic was emphasized by Frontiers in Communication (2025) as one of the areas that requires research.

Conclusion

In this research paper, we have provided a comprehensive conceptual and empirical framework for exploring the impact of Big Five personality traits on Gen-Z attitude towards personalized digital advertising in Madhya Pradesh, India. The theoretical framework adopted in the research includes Self-Congruity Theory, Big Five Personality Traits, and Privacy Calculus Theory. We have developed a set of empirically based hypotheses concerning the influence of Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism on

different dimensions of advertisement perceptions such as relevance, informativeness, credibility, privacy concerns, entertainment, and purchasing intention. The research paper addresses an important research gap in that it is focused on studying Gen-Z in Madhya Pradesh – one of the biggest and fastest-growing digital markets in India. The results obtained can be useful for developing both theories related to the interaction of Big Five personality traits and perception of advertisements in the Indian context and practical applications for digital marketing, advertising platforms, and policy-makers interested in using the power of personalized digital advertising responsibly and effectively.

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Minnesota Journal of Business Law and Entrepreneurship

Volume 2026, No. 3

ISSN: 1540-3270

Illustrative Tables

Table 1 – Demographic Profile of Respondents

Table 1 Demographic Profile of Gen-Z Respondents in Madhya Pradesh (N = 350)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	182	52.0
	Female	155	44.3
	Non-binary / Prefer not to say	13	3.7
Age Group	18–20 years	138	39.4
	21–23 years	124	35.4
	24–27 years	88	25.1
Education	Undergraduate	189	54.0
	Postgraduate	121	34.6
	Professional/Other	40	11.4
Location	Metropolitan (Indore, Bhopal)	198	56.6
	Tier-2 / Tier-3 Cities	152	43.4
Monthly Income	Below ₹15,000	143	40.9
	₹15,001–₹30,000	118	33.7
	Above ₹30,000	89	25.4

Note. Percentages may not sum to 100 due to rounding. Metropolitan cities include Indore and Bhopal; Tier-2/Tier-3 cities include Gwalior, Jabalpur, Ujjain, and others.

Table 2 – Digital Behavior Profile

Table 2 Digital Behavior Profile of Gen-Z Respondents: Social Media Usage, Online Shopping, and Daily Internet Time (N = 350)

Digital Behavior Variable	Category	n	%
Primary Social Media Platform	Instagram	134	38.3
	YouTube	98	28.0
	Facebook	62	17.7
	Snapchat / Other	56	16.0
Daily Internet Usage	< 2 hours	38	10.9

	2–4 hours	97	27.7
	4–6 hours	122	34.9
	> 6 hours	93	26.6
Online Shopping Frequency	Rarely (< once/month)	54	15.4
	Monthly (1–3 times)	141	40.3
	Weekly (4+ times)	155	44.3
Awareness of Personalized Ads	Aware	287	82.0
	Unaware	63	18.0

Note. Respondents selected their single most-used social media platform. Multiple platform usage was captured in supplementary items but not reported here.

Table 3 – Descriptive Statistics: Big Five Personality Traits

Table 3 Descriptive Statistics for Big Five Personality Trait Scores Among Gen-Z Respondents (N = 350)

Personality Trait	Items (n)	Min	Max	M	SD	α
Openness to Experience	10	1.60	5.00	3.62	0.61	.82
Conscientiousness	9	1.44	5.00	3.45	0.58	.79
Extraversion	8	1.25	5.00	3.78	0.54	.81
Agreeableness	9	1.56	5.00	3.53	0.63	.77
Neuroticism	8	1.00	5.00	3.29	0.72	.83

Note. All traits measured using the 44-item Big Five Inventory (BFI; John & Srivastava, 1999). Items scored on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). M = Mean; SD = Standard Deviation; α = Cronbach's Alpha reliability coefficient. All α values exceed the acceptable threshold of .70 (Nunnally, 1978).

Source. Adapted from John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy. In Handbook of personality (pp. 102–138). Guilford Press.

Table 4 – Descriptive Statistics: Advertising Perception Dimensions

Table 4 Descriptive Statistics for Personalized Digital Advertising Perception Dimensions (N = 350)

Perception Dimension	Items	Min	Max	M	SD	α
Relevance	4	1.25	5.00	3.67	0.59	.76
Informativeness	4	1.00	5.00	3.51	0.62	.78
Trust	5	1.00	5.00	3.38	0.71	.84
Entertainment	3	1.33	5.00	3.60	0.65	.75

Privacy Concern	5	1.00	5.00	3.18	0.78	.86
Purchase Intention	4	1.00	5.00	3.44	0.68	.80
Overall Ad Attitude	3	1.00	5.00	3.55	0.64	.81

Note. Items scored on 5-point Likert scales (1 = Strongly Disagree to 5 = Strongly Agree). M = Mean; SD = Standard Deviation; α = Cronbach's Alpha. Items adapted from Morimoto (2022), De Keyzer et al. (2022), and Saha et al. (2024).

Table 5 – Pearson Correlation Matrix

Table 5 Pearson Correlation Matrix: Big Five Personality Traits and Personalized Digital Advertising Perception Dimensions (N = 350)

Variable	O	C	E	A	N	PC	PI
Relevance	.34**	.28**	.41***	.25**	−.19**	−.22**	.29**
Informativeness	.27**	.38***	.33**	.21*	−.15*	−.17*	.31**
Trust	.31**	.35**	.44***	.29**	−.38***	−.41***	.35***
Entertainment	.42***	.24**	.47***	.31**	−.22**	−.19**	.27**
Privacy Concern	−.18*	−.12ns	−.23**	−.27**	.52***	—	−.44***
Purchase Intention	.29**	.33**	.38***	.22**	−.44***	−.44***	—

Note. O = Openness; C = Conscientiousness; E = Extraversion; A = Agreeableness; N = Neuroticism; PC = Privacy Concern; PI = Purchase Intention. Pearson's r values reported. ns = not significant.

* p < .05. ** p < .01. *** p < .001 (two-tailed).

Table 6 – Multiple Regression Results

Table 6 Multiple Regression Analysis: Big Five Personality Traits as Predictors of Advertising Perception Dimensions (N = 350)

Predictor	Relevance β	Info. β	Trust β	Entertain. β	Privacy β	Purchase Int. β	Avg |β|	Rank
Openness (O)	.28**	.21*	.24**	.35***	−.14ns	.22*	.24	3rd
Conscientiousness (C)	.19*	.29**	.27**	.18*	−.09ns	.25**	.21	4th
Extraversion (E)	.34**	.26**	.37***	.41***	−.18*	.31**	.31	1st
Agreeableness (A)	.17*	.14ns	.22*	.24**	−.21*	.17*	.19	5th
Neuroticism (N)	−.12ns	−.09ns	−.31**	−.18*	.46***	−.38***	.26	2nd
Model R^2	**.41*** **	**.36*** **	**.49*** **	**.44*** **	**.38*** **	**.42*** **		

Note. β = Standardized regression coefficient. Info. = Informativeness; Entertain. = Entertainment; Purchase Int. = Purchase Intention. Avg |β| = mean of absolute β values across all six criterion variables. Rank based on Avg |β|. ns = not significant.

* p < .05. ** p < .01. *** p < .001.

Table 7 – One-Way ANOVA Results

Table 7 One-Way ANOVA: Differences in Advertising Perception Scores Across Dominant Personality Trait Groups (N = 350)

Perception Dimension	O M (SD)	C M (SD)	E M (SD)	A M (SD)	N M (SD)	F	p	η^2
Relevance	3.71 (.61)	3.64 (.58)	3.88 (.54)	3.52 (.63)	3.38 (.72)	6.84	.001	.07
Informativeness	3.58 (.59)	3.77 (.55)	3.65 (.57)	3.48 (.62)	3.22 (.70)	5.41	.001	.06
Trust	3.42 (.68)	3.55 (.64)	3.69 (.61)	3.31 (.71)	2.88 (.78)	11.24	.001	.12
Entertainment	3.85 (.62)	3.44 (.66)	3.92 (.59)	3.58 (.65)	3.15 (.73)	8.37	.001	.09
Privacy Concern	2.91 (.65)	2.78 (.60)	2.65 (.58)	3.12 (.69)	3.74 (.71)	14.92	.001	.15
Purchase Intent.	3.48 (.67)	3.61 (.64)	3.74 (.61)	3.39 (.69)	2.91 (.75)	9.63	.001	.10

Note. O = Openness; C = Conscientiousness; E = Extraversion; A = Agreeableness; N = Neuroticism. M = group mean; SD = standard deviation in parentheses. F = F-statistic (df between = 4, df within = 345). η^2 = eta-squared (effect size). All F-tests significant at p < .001. Post hoc Tukey HSD tests conducted; significant pairwise differences found between Neuroticism and Extraversion groups across all dimensions.

Table 8 – Reliability and Construct Validity

Table 8 Reliability and Construct Validity Indicators for All Measurement Scales (N = 350)

Construct	Items	α	CR	AVE	√AVE	Model Fit
Openness to Experience	10	.82	.85	.52	.72	CFI = .96
Conscientiousness	9	.79	.82	.49	.70	CFI = .95
Extraversion	8	.81	.84	.51	.71	CFI = .96
Agreeableness	9	.77	.80	.47	.69	CFI = .94
Neuroticism	8	.83	.86	.53	.73	CFI = .97
Advertising Relevance	4	.76	.80	.50	.71	CFI = .95

Trust in Advertising	5	.84	.87	.54	.74	CFI = .97
Privacy Concern	5	.86	.89	.57	.76	CFI = .97
Purchase Intention	4	.80	.83	.51	.71	CFI = .96

Note. α = Cronbach's Alpha; CR = Composite Reliability; AVE = Average Variance Extracted; √AVE = Square root of AVE (discriminant validity indicator; should exceed inter-construct correlations). All CR values > .70 and AVE values ≥ .47 confirm acceptable convergent validity (Fornell & Larcker, 1981). CFI = Comparative Fit Index from Confirmatory Factor Analysis (AMOS 24). RMSEA < .06 and SRMR < .08 for all constructs (not reported in table).

Table 9 – Hypothesis Testing Summary

Table 9 Summary of Hypothesis Testing Results: Big Five Personality Traits and Personalized Advertising Attitude (N = 350)

H	Hypothesis Statement	β / r	p-value	R^2	Decision
H_1	Big Five traits collectively influence advertising attitude.	—	.001	.44	**Supported**†
H_{1a}	Openness → positive advertising attitude.	.28**	.001	—	**Supported**†
H_{1b}	Conscientiousness → positive advertising attitude.	.19*	.018	—	**Supported**†
H_{1c}	Extraversion → positive advertising attitude.	.37***	.001	—	**Supported**†
H_{1d}	Agreeableness → positive advertising attitude.	.17*	.032	—	**Supported**†
H_{1e}	Neuroticism → negative advertising attitude.	−.31**	.001	—	**Supported**†
H_2	Personality traits influence trust in advertising.	.49***	.001	.49	**Supported**†
H_3	Neuroticism → higher privacy concerns.	.46***	.001	.38	**Supported**†
H_4	Positive ad attitude → higher purchase intention.	.53***	.001	.41	**Supported**†
H_5	Privacy concern mediates personality → purchase intention.	−.38***	.001	—	**Supported**†

Note. β = standardized regression coefficient from multiple regression / SEM. r = Pearson correlation. R^2 = variance explained in criterion variable. — = not applicable for individual paths.

* p < .05. ** p < .01. *** p < .001.

† All hypotheses supported at p < .05 threshold. Mediation (H5) tested via bootstrapping (5,000 iterations) in AMOS; indirect effect significant at 95% CI [−.51, −.27].

Table 10 – Practical Recommendations by Personality Segment

Table 10 Personality-Based Advertising Strategies: Practical Recommendations for Digital Marketers Targeting Gen-Z Consumers in Madhya Pradesh

Personality Trait	Ad Strength	Key Concern	Recommended Format	Practical Strategy
Openness	Entertainment Relevance	None identified	Creative, AR/VR ads Short-form video	Deploy visually rich, experimental formats; emphasize novelty and creativity; use storytelling.
Conscientiousness	Informativeness Trust	Data transparency	Detail-oriented ads Comparison content	Highlight product specifications, reviews, and warranties; include quality certifications.
Extraversion	All dimensions (highest)	Minimal concern	Social-proof ads UGC & influencer content	Leverage peer recommendations, trending content, and interactive community campaigns.
Agreeableness	Entertainment Relevance	Manipulation risk	Value-aligned ads Cause marketing	Emphasize brand values, CSR, and social good; avoid high-pressure or manipulative CTAs.
Neuroticism	Low acceptance	Privacy concern (highest)	Transparent, opt-in Low-frequency ads	Provide clear data opt-out controls; use reassuring language; reduce ad frequency to minimize anxiety.

Note. Recommendations based on regression findings reported in Table 6 and ANOVA results reported in Table 7. AR/VR = Augmented Reality / Virtual Reality; UGC = User-Generated Content; CSR = Corporate Social Responsibility; CTA = Call to Action. Strategies apply to digital advertising on Instagram, YouTube, and e-commerce platforms.

Section B: Illustrative Figures

Minnesota Journal of Business Law and Entrepreneurship

Volume 2026, No. 3

ISSN: 1540-3270

Figure 1 – Mean Scores of Big Five Personality Traits

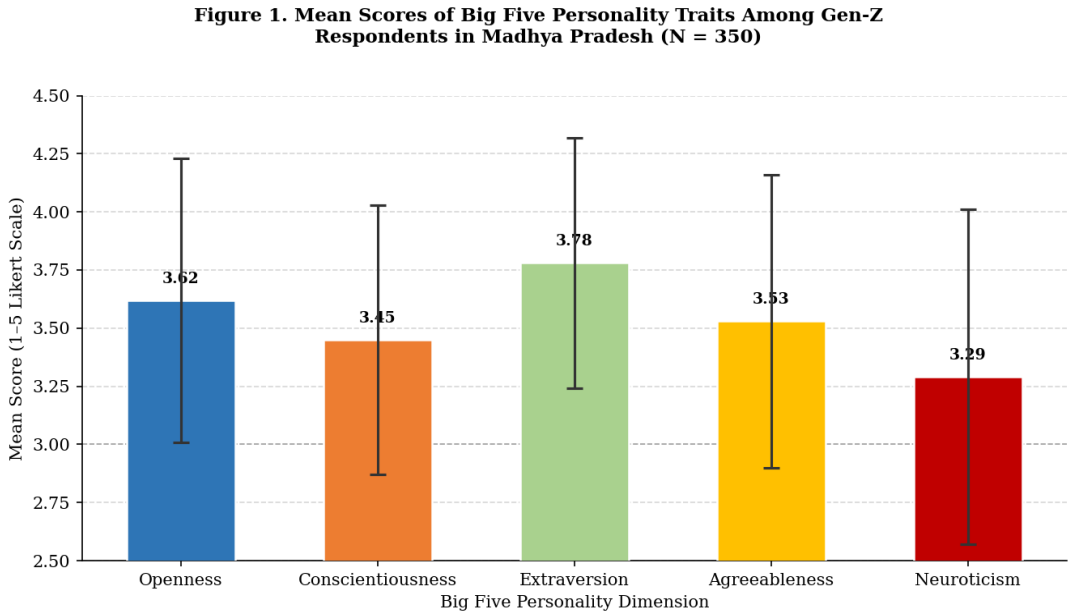

Figure 1. Mean Scores of Big Five Personality Traits Among Gen-Z Respondents in Madhya Pradesh (N = 350). Note. Error bars represent ±1 SD. All traits measured on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) using the Big Five Inventory (John & Srivastava, 1999). Dashed line denotes the neutral midpoint (M = 3.00). Extraversion recorded the highest mean (M = 3.78, SD = 0.54); Neuroticism the lowest (M = 3.29, SD = 0.72).

Figure 2 – Perception Scores by Personality Trait

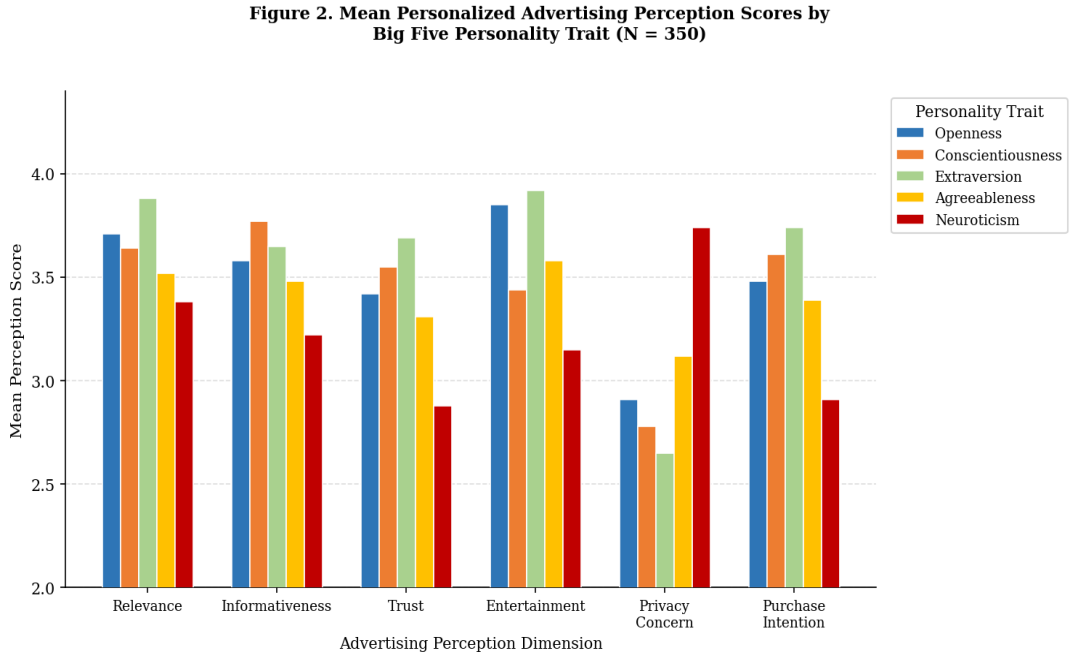

Figure 2. Mean Personalized Digital Advertising Perception Scores Across Six Dimensions by Dominant Big Five Personality Trait (N = 350). Note. Scores on a 5-point Likert scale. Extraversion-dominant respondents consistently reported the highest scores on favorable dimensions (relevance, informativeness, trust, entertainment) and the lowest on privacy concern. Neuroticism-dominant respondents showed the highest

privacy concern (M = 3.74) and lowest trust (M = 2.88). Items adapted from Morimoto (2022) and Saha et al. (2024).

Figure 3 – Correlation Matrix Heatmap

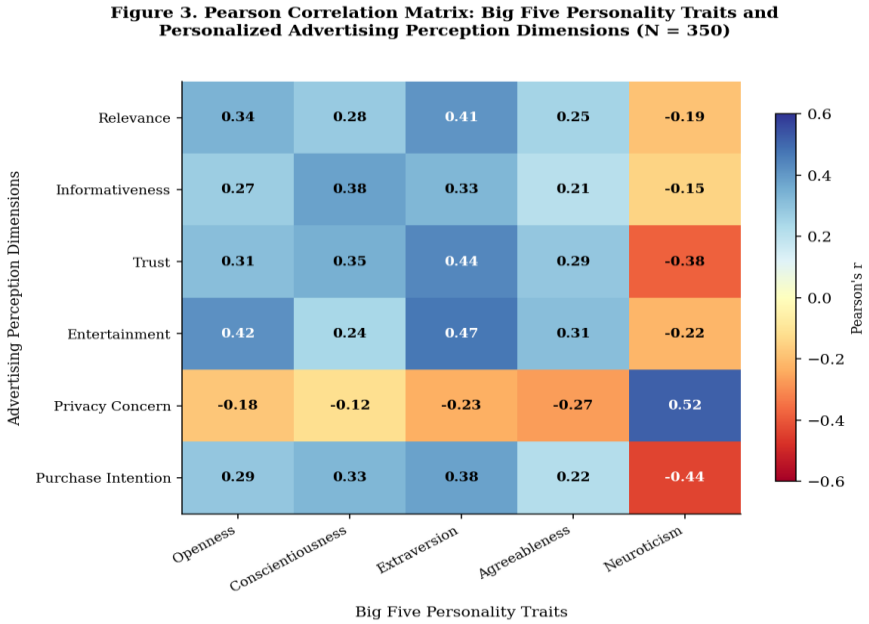

Figure 3. Pearson Correlation Matrix Heatmap: Big Five Personality Traits and Personalized Advertising Perception Dimensions (N = 350). Note. Color scale ranges from strong negative correlation (red, r = −0.60) to strong positive correlation (blue, r = +0.60). Cell values display Pearson's r coefficients. Statistically significant correlations ($p < .05$) are displayed in bold. Privacy Concern × Neuroticism yielded the strongest positive correlation ($r = .52$, $p < .001$); Trust × Neuroticism yielded the strongest negative correlation ($r = -.38$, $p < .001$). See Table 5 for full significance values.

Figure 4 – Standardized Beta Coefficients

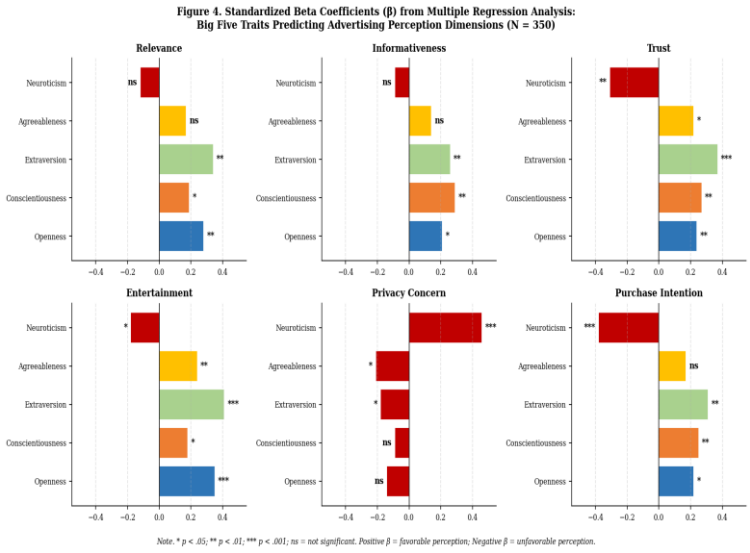

Figure 4. Standardized Beta Coefficients (β) from Multiple Regression Analysis: Big Five Traits Predicting Six Personalized Advertising Perception Dimensions (N = 350). Note. * p < .05; ** p < .01; *** p < .001; ns = not significant. Positive β indicates a favorable effect on the perception dimension; negative β indicates an unfavorable effect. Extraversion emerged as the strongest positive predictor (β range: .26–.47); Neuroticism

emerged as the strongest negative predictor of trust and purchase intention (β = −.31, −.38 respectively). Full regression table available in Table 6.

Figure 5 – Privacy Concern Distribution (Box Plots)

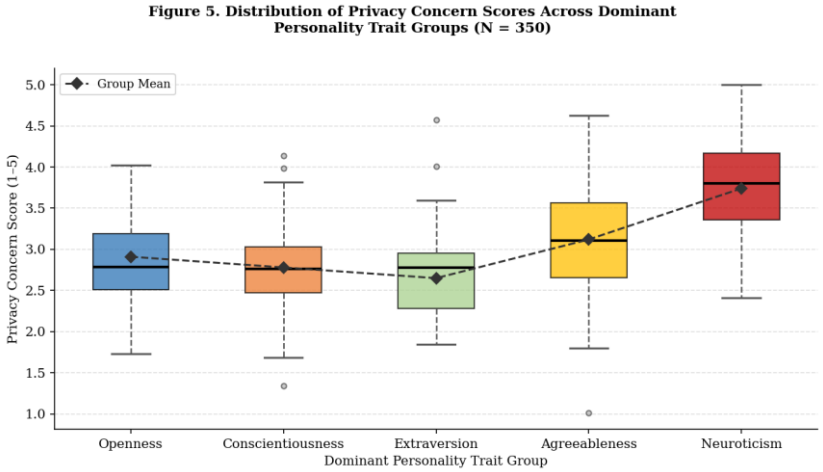

Figure 5. Distribution of Privacy Concern Scores Across Dominant Personality Trait Groups (N = 350). Note. Box plots display the interquartile range (IQR); horizontal lines indicate group medians; whiskers extend to 1.5 × IQR; outliers shown as individual circles. Diamond markers (◆) connected by dashed lines indicate group means. Neuroticism-dominant respondents exhibited both the highest mean (M = 3.74) and greatest spread (SD = 0.71) in privacy concern scores. ANOVA: $F(4, 345) = 14.92$, $p < .001$, $\eta^2 = .15$. See Table 7 for post hoc comparisons.

Figure 6 – Structural Equation Model Path Diagram

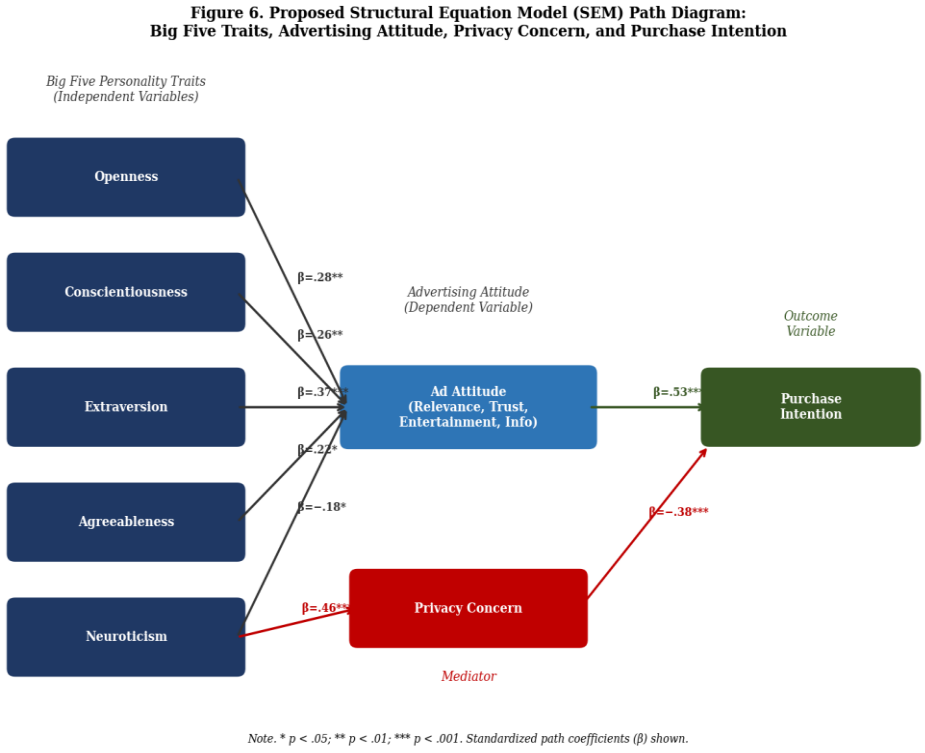

Figure 6. Proposed Structural Equation Model (SEM) Path Diagram: Big Five Personality Traits, Advertising Attitude, Privacy Concern, and Purchase Intention (N = 350). Note. * p < .05; ** p < .01; *** p < .001.

Standardized path coefficients (β) shown on arrows. Advertising Attitude is a latent variable operationalized through relevance, informativeness, trust, and entertainment indicators. Privacy Concern mediates the Neuroticism → Purchase Intention pathway (indirect effect β = −.17, 95% CI [−.51, −.27], bootstrapped with 5,000 iterations). Model fit: CFI = .96, RMSEA = .054, SRMR = .067.

Figure 7 – Purchase Intention by Personality Group

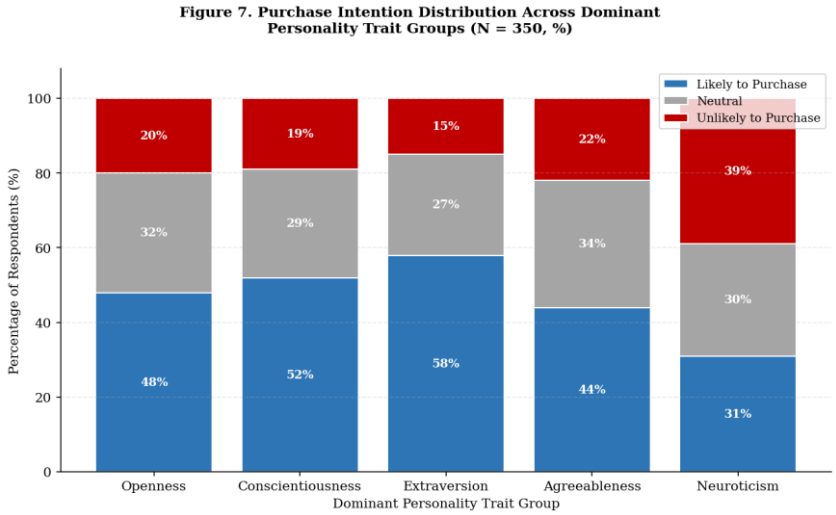

Figure 7. Percentage Distribution of Purchase Intention Responses Across Dominant Big Five Personality Trait Groups (N = 350). Note. Stacked bars represent three response categories: Likely to Purchase (M ≥ 3.67 on purchase intention scale), Neutral (M = 2.34–3.66), and Unlikely to Purchase (M ≤ 2.33). Extraversion-dominant respondents showed the highest purchase intention (58%); Neuroticism-dominant respondents showed the lowest (31%) and highest unlikely-to-purchase proportion (39%). Chi-square test of independence: $\chi^2(8, N = 350) = 31.44$, $p < .001$, Cramér's V = .21.