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An Empirical Investigation for Better Business Targeting of Indian Gen Z Consumers in E-Commerce

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Research Article

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Abstract

The rapid growth of internet availability, and technology in India has changed the way younger generation make purchase decisions. Businesses need to learn about Indian Gen Z’s shopping preferences to improve their strategies. The study investigates the factors influencing online buying decisions using Exploratory Factor Analysis. Further Interpretive Structural Modelling and Matrix Impact Cross-reference Multiplication Applied to a Classification popularly known as MICMAC analysis are applied on the extracted factors to understand their interaction and influence on each other. This helps to establish driving-dependence structure among the factors. The study adopts a quantitative research design where primary data is collected using structured survey administered using a questionnaire to capture the responses. This study adds to the existing body of knowledge by uncovering the underlying linkages and enabling better theoretical insights about Indian Gen Z's unique online shopping habits, for better managerial decision making. This aids businesses to develop strategies for better reach and connection with the next consumer wave.

1. Introduction

The number of Indians who own smartphones and have access to internet facilities has grown very quickly over the last decade. This growth was result of the "digital drive" started by the Indian government to make financial transactions easier after demonetization in 2014. The situation was further aggravated by the COVID-19 pandemic. The fear created by the pandemic, forced people to use their smartphones and the internet facilities to meet their daily and basic needs of groceries, online payments and clothes without actually visiting a store. (Suwana, Pramiyanti, Mayangsari, Nuraeni, & Firdaus, 2020). Millions of Indians moved to online shopping because of lockdowns and social distancing norms set by the government. (Kirmani, Haque, Sadiq, & Hasan, 2023). The businesses started prioritizing the safety of consumers and also began expanding their operations in remote areas considering the same issue (Alfonso, Boar, Frost, Gambacorta, & Liu, 2021). In addition to being time saving, e-commerce platforms offer a multitude of options at the touch of the screen and are available around-the-clock to satisfy the demands of contemporary consumers for hassle-free experiences (Dabija & Lung, 2018; Salunkhe, 2023). The E-commerce industry picked up this structural shift to expand their business.

The extensive digital exposure of Gen Z (born between 1995 and 2009) and their desire for convenience has made them the most active generation on internet (Rue, 2018). Growing up in an environment filled with smartphones, social media, and online shopping platforms, they are more inclined to utilize shopping apps and get engaged in digital content. The influence of Gen Z is expected to reshape the consumer landscape of India by making online shopping experience more interactive and socially integrated (Tolstikova, Ignatjeva, Kondratenko, & Pletnev, 2020). Figure 1 shows the timeline of various generations.

Brands are rushing to cater to this new, powerful group as more of them enter the workforce. They are predicted to account for a sizable amount of India's consumer spending. Big online retailers like Amazon and Flipkart are making an effort to reach this generation of app-savvy consumers. Flipkart has introduced **Spoyl**, an app-in-app fashion platform targeted at younger consumers, while Amazon Fashion has opened a dedicated **Next Gen store.** Additionally, Myntra has launched **Fwd**, a platform designed especially for Generation Z.

Motivation for the Study

The growing number of Generation Z in the workforce and the surge in e-commerce in India underscores the need for a comprehensive, data-informed examination of the shopping habits. Despite the increasing economic significance of this demographic, the existing literature offers limited empirical insights into the elements shaping their online shopping behaviors in India. Figure 2 demonstrates that Generation Z is a notably crucial and digitally savvy group that is transforming consumer behavior, while Fig. 3 showcases the unique landscape of e-commerce research in India. This research study is motivated by the need to address the gaps in understanding the key factors that affect the online shopping habits of Indian Gen Z while exploring the hierarchical relationships and connections among these factors. Although numerous studies have investigated the preferences and behaviors of Gen Z consumers related to e-commerce, most of the existing literature tends to be descriptive, relying primarily on qualitative insights or basic statistical analyses. Businesses need to learn about Indian Gen Z consumers online shopping preferences to improve their strategies and customer experiences.

Research Questions and Objectives

The above discussion suggests that it is essential to understand the expectations and behaviors of Gen Z more thoroughly for improved decision-making. This requires a systematic analysis of their behavioral traits, and how these elements interact to foster satisfaction. To explore various aspects and gain a comprehensive understanding following research questions (RQ) are formulated.

RQ1

Which attributes and factors affect Gen Z's online purchasing behaviors?

RQ2

What systemic linkages are present among the identified factors, and how are they related with each other.

Based on the above research questions, the following **research objectives** *(RO)* have been formulated to guide the study and provide a structured approach to understanding Gen Z's online shopping behaviour.

RO1

To determine the key factors from the identified attributes (through literature study) that influence online buying decisions of Gen Z using EFA.

RO2

To uncover the underlying systemic linkages using ISM and MICMAC analysis and enabling better theoretical insights.

The rest of the article is structured as follows: the second section discusses detailed literature to highlight the importance of the subject in the research and practitioner world. Further it helps to identify the research gap. In the third section the authors have discussed the detailed methodology adopted for accomplishment of the study. Further in section 4 the implementation of methodology is depicted followed by discussion on the results and implications. Section 5 discusses the probable strategies for effective business targeting for online shopping platforms. Section 6 highlights the threats that could have affected the results. The article is concluded with a section to summarize the findings and discuss the limitations and possible future research in the area.

2. Literature Review

To assess the growth and significance of the topic, this section offers an extensive review of existing literature, focusing on the study of Generation Z, e-commerce, and various analytical methods. Table 1 summarizes the key findings from some of the most significant research undertaken in this area.

Table 1
Prominent Research on Gen Z behavior towards Online Shopping

Author (Year)	Objectives	Methodology (Qualitative/ Quantitative)	Data Description (Primary/Secondary)
Wood (2013)	Exploring trends among Gen Z consumers	Qualitative analysis based on literature and expert insights.	Secondary
Lestari (2019)	Studying the factors promoting e-commerce among Gen Z in Jakarta	Quantitative	Primary
Munsch (2021)	To understand the effectiveness of digital communication for Millennials and Gen Z across the globe	Qualitative study through focus group study and interviews	Primary
Thangavel, Pathak and Chandra (2022)	Application of Cohort analysis to understand the decision-making behaviour of Gen Z	Quantitative	Primary
Do, Ta, Bui, Do, Dong and Lam (2023)	To evaluate the effects of different e-logistics service quality factors on Gen Z e-commerce customers' satisfaction and loyalty in Vietnam	Quantitative	Primary
Pravyana and Soepatini (2023)	To investigate the elements that affect Gen Z's brand loyalty to e-commerce apps in Indonesia	Quantitative	Primary
Tjahjana, Dwidienawati, Hakim, Rivera, Tandiono and Ardika (2024)	To investigate how Gen Z's trust in Indonesian e-commerce is affected by security and privacy	Quantitative	Primary
Salam, Singkeruang, Husni, Baharuddin and AR (2024)	Investigating Gen Z consumer preferences and marketing tactics in order to create enduring partnerships	Quantitative	Primary
Cao (2025)	To use the UTAUT2 model to examine the factors influencing Gen Z's e-commerce behavioural intentions in Vietnam	Quantitative	Primary
Pu, Radics, Umar, Jeremiah and Quan (2025)	To understand the Gen Z behaviour in China	Quantitative	Primary

Author (Year)	Objectives	Methodology (Qualitative/ Quantitative)	Data Description (Primary/Secondary)
Das and Malik (2025)	To identify factors influencing engagement and stay intention among Gen Z in India	Qualitative	Primary
Proposed	To determine the key factors using EFA and uncover the underlying systemic linkages using ISM and MICMAC analysis and enabling better theoretical insights.	Quantitative	Primary

The current body of research indicates shortfall in Generation Z related research in relation to the Indian e-commerce market. Even though e-commerce is growing quickly in India and Gen Z consumers are spending, we still don't have enough insights about their preferences and how they make decisions. The absence of focused research in this field underscores the necessity for more extensive studies that specifically investigate Gen Z's interaction with e-commerce platforms in the Indian context, to enhance both academic research and industry practices.

3. Methodology

Online shopping has gained immense popularity, especially among younger generations, due to the rapid expansion of India's e-commerce sector and internet penetration over the past few years. The limited in-depth analysis in this context creates a gap in academic research. This study aims to address the research gap by utilizing a quantitative approach to examine the online purchasing preferences of the young generation (Gen Z) and their interlinkages to strengthen their strategies. This section elaborates the approach that integrates statistical tools for attaining this objective. Through an in-depth literature review, relevant characteristics (attributes) were identified and included in the questionnaire designed for primary data collection. Table 2 discusses the detailed research design.

Table 2
Research Design

Component	Details
Target Population	Indian Gen Z consumers with experience in online shopping.
Sampling Technique	Purposive Non-Probability Sampling
Sample Size	Around 1520 people (Gen Z) were sent the questionnaire out of which 1019 were received back. Out of these 1019 questionnaires, 208 questionnaires were discarded because of missing values or incorrect entries. These responses were removed from the data, and we were finally left with 811 responses for the analysis.
Time Frame	December 2024–May 2025.
Research Approach	Mixed Method and Inductive (Bottom Up) Approach
Research Instrument	Structured Questionnaire (5-point Likert Scale) with no open ended questions
Data Collection Method	Primary data collected through self-administered online surveys over email, LinkedIn and social media platforms
Data Analysis Tools	Statistical Package for Social Sciences (SPSS), SmartISM
Statistical Tools	EFA, ISM, MICMAC Analysis
Ethical Considerations	Voluntary participation by respondents without revealing their identity. The respondents were clearly communicated about the objectives of research
Limitations	Sample mostly consists of college going students (Undergraduate and Post graduate students)

Before extensive data collection process, the effectiveness and validity of the instrument (structured questionnaire) was evaluated through a pilot study with 78 responses. For pilot survey questionnaire was given to experts in the marketing field working with real businesses to obtain significant suggestions for improvement in questionnaire. Finding ambiguities, evaluating the questions' clarity, and guaranteeing the tool's overall coherence were all made possible by the pilot study. To ensure data quality and the validity of the research findings, the questionnaire had to be improved before extensive data collection could begin. After incorporating the changes received during pilot study the questionnaire was administered to target population through online platforms like social media platforms, email, LinkedIn etc. The details of sample size and timeframe are given in Table 2.

The attributes identified from literature are presented in Table 3 in section 4 (Empirical Analysis). This study is completely based on these attributes. Figure 4 depicts the integrated approach utilized to analyse the data collected. At first EFA is employed on the identified attributes to determine the factors

that represent the combined impact from them. EFA results in significant factors affecting the purchase behavior of Gen Z. The factors determined are then analyzed using ISM, to provide a hierarchical framework illustrating the interactions among factors. This approach enhances the understanding of the relationships between the established elements. Subsequently, the driving and dependence power of each factor enables their classification into autonomous, dependent, linkage, and driving categories. The detailed interpretation of these categories is established in the analysis section. This process is referred to as MICMAC analysis. This approach helps to uncover the underlying systemic linkages among the factors enabling better theoretical insights for the business.

4. Empirical Analysis

This section presents the implementation of methodology while guaranteeing that multiple viewpoints are considered prior to drawing a conclusion for inclusive, informed, and balanced decisions. The combined approach incorporates the insights of management, industry specialists, and consumers.

4.1 Identification of Attributes

Identifying the traits of Gen Z's online purchasing behavior begins with a comprehensive examination of existing research to uncover the factors that could affect their decisions, motivations, and choices. Understanding these traits allows businesses to effectively tailor their marketing strategies, enhance the user experience, and increase customer satisfaction, as this demographic represents a significant and digitally skilled consumer. By leveraging insights from previous studies, researchers can compile a set of characteristics that e-commerce platforms can study to remain competitive and engage successfully with Gen Z consumers. The traits along with their explanations are presented in Table 3. The questionnaire administered to the target population is based on these attributes.

Table 3
Online Shopping Attributes Identified from Literature Study

S.No.	Attribute	Description	Reference
1	Access to many Brands and Retailers	Variety of products, brands and retailers available on one platform	Shi and Geng (2021),
2	Quality of Products available	Functionality, durability and reliability of platform and products	Isbahi (2023), Park and Kim (2003)
3	Convenience	Ability to shop anytime and anywhere without actually visiting the score	Moeller, Fassnacht and Ettinger (2009), Bhatnagar, Misra and Rao (2000)
4	Customer Service	Prompt and beneficial assistance both during and after the purchase	Daroch, Nagrath and Gupta (2021)
5	Coupons and Discounts	Special offers and price reductions	Liu, Lobschat, Verhoef and Zhao (2021)
6	Reference from other customers	Influence of personal recommendations from known	Ayuni (2019)
7	Customer reviews and ratings	Reviews and star ratings from previous customers.	Kutabish, Soares and Casais (2023)
8	Time Saving	Quicker shopping experience than alternatives that are available offline	Daroch et al. (2021)
9	Delivery Charges	Cost associated with shipping	Dias, Oliveira and Isler (2021)
10	Shop in privacy of your home	Comfort of shopping without public interaction	Sudirjo, Lotte, Sutaguna, Risdwiyanto and Yusuf (2023)
11	Ease of Payment	Availability of multiple and smooth payment methods	Greenacre and Akbar (2019)
12	Easy EMI	Monthly installments with ease	Greenacre and Akbar (2019)
13	Ease of Selection	Simple process of comparing and choosing products on the platform	Greenacre and Akbar (2019)
14	No Cost EMI	EMI plans without any added interest or fees	Greenacre and Akbar (2019)
15	Ease of use	User-friendly interface	Greenacre and Akbar (2019)
16	Quick and Easy checkout options	Few steps and little time are needed to finish a transaction.	Greenacre and Akbar (2019)
17	Easy Returns	Simple return policies that reduce the risk of purchase	Greenacre and Akbar (2019)

S.No.	Attribute	Description	Reference
18	Trustworthy	Reliability in terms of data security and delivery	Büttner and Göritz (2008)
19	Delivery Service	Efficiency and promptness of the product delivery process	Dias et al. (2021)
20	Innovative	Using new technologies to improve the shopping experience	Ha and Stoel (2004)
21	Economical	Offering value for money	Azhar, Akhtar, Rahman and Khan (2023)
22	Reliable	Consistency service and product quality features over time	Etrata Jr, Peralta and Relucio (2022)
23	No Hidden Cost	No unexpected charges at checkout	Greenacre and Akbar (2019)
24	Brand Personality	Emotional and symbolic associations with the brand	Tsao and Chang (2010), Kim, Lee and Suh (2015)
25	No shopping mall Nearby	Lack of physical alternatives pushing Gen Z towards online platforms	Kim et al. (2015)
26	Price	Cost offered to the customers	Greenacre and Akbar (2019)
27	Website Brand Image	Perception of the e-commerce platform	Kim et al. (2015)
28	Perceived Quality	The user's assessment of the product's appearance or expected quality	Sebastianelli, Tamimi and Rajan (2008)
29	Website Design	Visual appeal of the e-commerce platform	Ashraf, Faisal, Jabbar and Habib (2019)
30	Perceived Value	Customers' evaluation of a product's value in relation to its cost	Mosavi and Ghaedi (2012)

4.2 Questionnaire Reliability and Validity

Reliability Analysis was done before EFA to validate the Questionnaire items (Attributes). The internal consistency of the questionnaire items (listed in Table 3) was evaluated using Cronbach's alpha prior to EFA. For a total of 30 items, the reliability analysis produced a Cronbach's Alpha value of 0.961 and 0.963 based on standardized items (Table 4). Excellent internal consistency among the items is indicated by these values, which are much higher than the generally recognized cutoff of 0.70. This indicates that the questionnaire's items measure the underlying constructs with reliability and have a high degree of correlation. The instrument's statistical soundness and suitability for additional analysis are confirmed by its high reliability score (Izah, Sylva, & Hait, 2023; Wesolowski & Wind, 2019).

4.3 Factor Grouping using EFA

To simplify complex data items (30 attributes) listed in Table 3 and to identify the underlying structure and group related variables, EFA is employed. Grouping the observed factors is necessary to understand consumer psychology and develop targeted strategies. The primary data collected from the Gen Z survey was subjected for EFA in SPSS. Following the use of EFA, the 30 traits were reduced to 7 components or constructs (Table 4). These constructs can further be used for analysis (ISM and MICMAC Analysis) and to develop strategies.

Table 4
Results of Data Reduction (EFA)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	**.925**					
Bartlett's Test of Sphericity	Approx. Chi-Square	21078.520				
	Sig.	.000				
Extracted Factors and their Attributes with Factor Loading						
Convenience and Efficiency	**Availability and Accessibility**	**Price Sensitivity and offers**	**Perceived Product Quality-Value**	**Payment and Financial Options**	**Post-Purchase Service and Community Influence**	**Brand Perception**
Convenience (0.769)	Access to many brands and retailers (0.674)	Coupons and discounts (0.644)	Quality of products available (0.749)	Ease of Payment (0.800)	Customer reviews and ratings (0.773)	Website brand image (0.648)
Ease of Selection (0.843)	No shopping mall nearby (0.538)	Delivery charges (0.696)	Perceived Quality (0.657)	Easy EMI (0.430)	Easy returns (0.758)	Website design (0.606)
Ease of use (0.799)	Shop in the privacy of your home (0.573)	Economical (0.716)	Perceived Value (0.616)	No Cost EMI (0.529)	Customer service (0.776)	Brand Personality (0.715)
Time saving (0.740)		No hidden cost (0.765)		Quick and easy online checkout process (0.753)	Reference from other customers (0.666)	Innovative (0.683)
		Price (0.652)			Delivery Service (0.801)	Trustworthy (0.674)
						Reliable (0.691)

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity were used to determine whether the data was suitable for factor analysis. Because the reported KMO value of 0.925 is nearer 1, it suggests great sample adequacy, indicating that your variables are well suited for factor analysis. The data exhibits sufficient inter-correlations for factor analysis, as confirmed by the reported significance value of 0.000 and the high significance of Bartlett's test. The seven factors that were retrieved show different aspects that affect how Gen Z behaves when utilizing e-commerce platforms (Staffini, Fujita, Svensson, Chung, & Svensson, 2022; Thao, Van Tan, & Tuyet, 2022). Table 4 shows the factors formed after grouping the attributes along with the factor loading with which attribute is associated with that concerned factor. Naming the factors enhances the interpretability and practical relevance of the results.

4.4 Deriving Factor Linkages through ISM

To determine inter relationships (systemic linkages) among the derived factors, 15 experts with the required knowledge and expertise were identified to assign relative relation between the identified factors. The experts belonged to managerial positions at different ecommerce firms (Meesho, Nykaa, Myntra, Amazon, Flipkart, Zepto, Blinikit etc.). The questionnaire designed for ISM was explained to all the experts individually and was filled in person. The terms like “is influencing” or “influenced by” is used to compare the two attributes. If 3 or more experts gave a similar response, then it was finalized but if responses were more scattered it was given ‘O’ relation (Ahmad & Qahmash, 2021). The symbols $V,\ A, X\ and\ O$ are used to assign association among attributes. The meaning of these symbols is represented in Table 5.

Table 5
Symbols to form SSIM Matrix

Symbol	Meaning
V	Factor i influences j Factor
X	Both Factors i and j influence each other
A	$\mathrm{Factor} j$ influences i
O	The Factors i and j are not influencing each other

Based on the opinions, Structural Self-Interaction Matrix (SSIM) was formed (Table 6). Then the initial reachability matrix and final reachability matrix (FRM) is formed from SSIM by including transitive relations (Tables 7 and 8 respectively). The SSIM matrix is converted to the Initial reachability matrix using ‘0’ and ‘1’ by converting through the rules specified in Fig. 5 (Amini & Alimohammadlou, 2021;

Anand & Bansal, 2017; Attri, Dev, & Sharma, 2013; Pourvaziri, Mahmoudkelayeh, Kamranfar, Fathollahi-Fard, Gheibi, & Kumar, 2024).

Table 6
Structural Self-Interaction Matrix

Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Convenience		V	O	O	X	V	V
Accessibility			O	V	O	V	V
Cost and offers				X	O	V	V
Value					O	V	V
Payment and Financial Options						O	V
Customer experience and Service							V
Brand Perception							

Factors are then separated into different levels using three types of sets: reachability, antecedent, and intersection sets. The factors that influence other factors including themselves are part of reachability set. Antecedent sets are attributes that are influenced by other attributes. The intersection of the above two sets is part of Intersection set. If the intersection set and the reachability set are the same, the attribute is tiered as level "I". Every attribute in level "I" is then retrieved, and the procedure is repeated iteratively until all of the attributes have attained their level. These stages provide a hierarchical level of these qualities (Figs. 6 and 7). In these figures the top row heading represents the factor number. These numbers are in sequence given on the left side. Based on the FRM and level partitioning a model is developed by removing the transitive links for simplicity. The top-level of the model consists of attributes extracted at first level, similarly, the levelling goes on. The detailed step by step process to implement ISM was given by (WARFIELD, 1982). Smartism (https://smartism.sgetm.com/ISM.aspx/) was used to run ISM smoothly.

Table 7 shows the initial reachability matrix obtained from SSIM (Table 6). This shows the relation among elements in binary form. Then the final reachability matrix (Table 8) is obtained by incorporating transitive relations of attributes. The table also shows the driving power and dependence power of each attribute which will be used for dividing attributes into different segments (MICMAC analysis).

Table 7
Initial Reachability Matrix

Factors	1	2	3	4	5	6	7	Driving Power
Convenience	1	1	0	0	1	1	1	5
Accessibility	0	1	0	1	0	1	1	4
Cost and offers	0	0	1	1	0	1	1	4
Value	0	0	1	1	0	1	1	4
Payment and Financial Options	1	0	0	0	1	0	1	3
Customer experience and Service	0	0	0	0	0	1	1	2
Brand Perception	0	0	0	0	0	0	1	1
Dependence Power	2	2	2	3	2	5	7	

Table 8
Final Reachability Matrix

Variables	1	2	3	4	5	6	7	Driving Power
Convenience	1	1	1*	1*	1	1	1	7
Accessibility	0	1	1*	1	0	1	1	5
Cost and offers	0	0	1	1	0	1	1	4
Value	0	0	1	1	0	1	1	4
Payment and Financial Options	1	1*	1*	1*	1	1*	1	7
Customer experience and Service	0	0	0	0	0	1	1	2
Brand Perception	0	0	0	0	0	0	1	1
Dependence Power	2	3	5	5	2	6	7	

Table 9
Level Partitioning

Elements (Mi)	Reachability Set R(Mi)	Antecedent Set A(Ni)	Intersection Set R(Mi)∩A(Ni)	Level
1	1, 5	1, 5	1, 5	5
2	2	1, 2, 5	2	4
3	3, 4	1, 2, 3, 4, 5	3, 4	3
4	3, 4	1, 2, 3, 4, 5	3, 4	3
5	1, 5	1, 5	1, 5	5
6	6	1, 2, 3, 4, 5, 6	6	2
7	7	1, 2, 3, 4, 5, 6, 7	7	1

Figure 6 shows that the top nodes (6 and 7) are independent or driving variables. These factors can also be termed as key drivers as they influence many other variables (multiple outgoing arrows) but have few or no incoming arrows. These are critical levers in the system and should be managed strategically. The Middle Nodes (3 and 4) receive influences and exert influences on other nodes. These are linkage variables, which are unstable as any change affects and is affected by others. The Bottom Nodes (1 and 5) are dependent variables (they have many incoming arrows) and are significantly influenced by other factors but influence few or none. These variables indicated the outcomes. Central Node (2) appears disconnected or minimally connected. Hence it is an autonomous variable that has little strategic relevance in decision making. Figure 7 presents the factors representing various nodes.

The factors at level 5 (Convenience and Payment and Financial Options) represent fundamental Drivers. These are basic enablers, meaning they do not depend on any other variable but have an influence on higher-level factors. These are crucial initiators of the shopping experience for Gen Z. At level 4 we have Intermediate Drivers (Accessibility). Accessibility is driven by Convenience and Payment and Financial Options. For Gen Z, how easily they can access the platform—both in terms of usability and financial ease—is foundational. Level 3 is Value Proposition Layer (Cost and Offers, Value) which is influenced by how accessible and convenient the shopping platform is. Interestingly, the bidirectional arrow between Cost and Offers & Value indicates a mutual interdependence—better offers enhanced perceived value, and perceived value influences the attractiveness of offers. Level 2 represents the factors related to Experiential Outcome (Customer Experience and Service). Gen Z evaluates their experience largely because of what they get (value, deals) and how they are treated (service). Finally, level 1 presents the ultimate outcome (Brand Perception). This is the outcome and most dependent variable. It is shaped through Customer Experience and Service, which, in turn, is influenced by all the underlying factors. Positive brand perception is the culmination of a smooth, valuable, and well-serviced online shopping journey.

Table 10
Driving and Dependence Power of Factors

Factors	7	6	3	4	2	1	5	Driving Power	Level
Brand Perception	1	0	0	0	0	0	0	1	1
Customer experience and Service	1	1	0	0	0	0	0	2	2
Cost and offers	0	1	1	1	0	0	0	4	3
Value	0	1	1	1	0	0	0	4	3
Accessibility	0	0	1*	1	1	0	0	5	4
Convenience	0	0	0	0	1	1	1	7	5
Payment and Financial Options	0	0	0	0	1*	1	1	7	5
Dependence Power	7	6	5	5	3	2	2		
Level	1	2	3	3	4	5	5		

Further **MICMAC Analysis** (Anand & Bansal, 2017; Attri et al., 2013; Verma, Aggarwal, & Pham, 2021) is used to determine the power of attributes in either influencing other attributes or getting influenced by other attributes. This procedure analyses attributes for indirect classification based on the driving and dependence power of attributes. The values of driving power and dependence power are calculated from the FRM. Adding vertical values gives driving power while horizontal gives dependence power of the corresponding attribute (Table 10). Plotting the values divide attributes into four segments (quadrant) namely autonomous, Linkage, Dependent and Independent (Fig. 8).

Quadrant I (Autonomous Variables) consists of no factors. This implies that there is no factor that is not affected by others. Quadrant II (Dependent Variables) consists of Post-Purchase Service and Community Influence and Brand Perception factors. These are the outcomes of other factors and not the drivers themselves. Businesses cannot directly influence these but can improve them indirectly by focusing on the key driving factors. For example, improving perceived value, accessibility, and payment options will eventually enhance brand perception and post-purchase satisfaction. Quadrant III (Linkage Variables) consists of 2 factors namely Price Sensitivity and Offers and Perceived Product Quality – Value. These are highly interactive and unstable variables—any change in them affects others and they are themselves affected by others. Hence, businesses must handle them carefully. Poor pricing strategy or quality perception can destabilize customer satisfaction and trust. Quadrant IV (Independent (Driving) Variables) consists of three factors, namely Convenience and Efficiency, Availability and Accessibility and Payment and Financial Options. These are the root drivers of the entire system. To attract and retain Gen Z customers, e-commerce platforms must focus on improving convenience, accessibility, and flexible payment options. Enhancing these will trigger positive outcomes in the dependent variables (brand perception and post-purchase satisfaction) and influence linkage variables (pricing sensitivity and perceived value).

5. Implications for Businesses

This study offers a number of useful ramifications for efficient business targeting. The company must set itself up to satisfy both aspirational demands and budget-conscious behaviour. **Value-based pricing, youth-centric branding, mobile-first design, and targeted marketing across digital platforms should all be incorporated into an e-commerce strategy** because the user base is generally made up of middle-class families and students, who are young, educated, and tech-savvy.

The **quality of the products** offered should be the first thing these platforms should look into because the value derived is shaped by the perception of the products' quality, which serves as a linkage factor for other factors (Fig. 8). Additionally, its factor loading (Table 4) illustrates how important it is to Gen z consumers. Therefore, it is important to include thorough product descriptions, real photos, and quality certifications for detailed information. They can concentrate on providing young adults with affordable electronics, smart devices, fashionable clothing, and accessories. They should also offer a variety of study aids, stationery, lifestyle items, grooming necessities, and affordable subscriptions for students.

The substantial factor loading on coupons, discounts, delivery fees, and no hidden costs reveals that Gen Z consumers are both **price-sensitive and value-conscious** (Table 4). Therefore, it is necessary to establish clear pricing along with frequent time-limited promotions, student discounts, and loyalty benefits. The platform needs to be simple, quick, mobile-friendly, and search-filter intelligent because the highest factor loadings are associated with ease of use (0.799), time savings (0.740), and ease of selection (0.843). User convenience and engagement will be improved by features like voice search, AI-based product recommendations, fast product comparisons, and a dark mode for comfort. To boost engagement, applications should include features like badges, daily deals, personal recommendations, points earned on each shopping trip, etc.

Post-purchase satisfaction and brand perception are dependent variables greatly influenced by how customers hear about and experience the brand (Fig. 8). **Social proof** (ratings, reviews, and testimonials), influencer partnerships, and peer-generated content should all be utilized. To build relatability and trust, emphasize eco-friendly projects, customer success stories, and brand transparency. To win over desperate and impatient users, implement round-the-clock chatbots, robust refund and return policies, and instant query resolution. To increase transparency, provide incentives for review submissions and publicly address reviews. Customer loyalty over the long term will depend on post-purchase service. With “Ease of Payment” (0.800) and “Quick and Easy Checkout” (0.753) emerging as critical drivers, the business must offer a wide array of flexible, secure, and fast payment options including UPI, wallets, Buy Now Pay Later (BNPL), and no-cost EMIs. Streamline the checkout process to avoid cart abandonment. Further the strong emphasis on availability and accessibility (e.g., “Access to many brands,” “Shop from home”), partner with a wide supplier network and enable hyperlocal delivery wherever possible.

E-commerce companies should use **social media platforms** like Instagram, YouTube, and other youth platforms through influencer partnerships for promotion and advertisement. The content used should be humorous, relatable, trendy and should majorly focus on value plus style, **“Why pay more?”** and **“Smart**

buys" messaging. **Student membership program** can also be launched to provide them with early access to sales, exclusive discounts and birthday offers. Overall, it can be concluded that to attract and retain Gen Z customers, e-commerce platforms should prioritize Convenience, Accessibility, and Payment Options as the foundational building blocks. These will trigger positive outcomes in Perceived Value and Pricing Sensitivity (which must be managed carefully) and ultimately result in strong Brand Perception and Post-Purchase Satisfaction, even though these are not directly controlled. All strategies must be executed with agility, personalization, and transparency to build long-term customer loyalty in this digitally native demographic (Fig. 7 and Fig. 8).

6. Threats to Validity

Potential limitations in methodologies and biases in the application or interpretation of quantitative methods could include selection bias during the sampling of survey respondents. Measurement issues can arise if the questions or scales used in the study are not entirely adequate, putting the whole research scheme at risk of inaccuracies or making them unable to grasp the online shopping peculiarities. Sometimes respondents give socially desirable answers or inaccurate ones, thus affecting the reliability of the survey data and subsequent analysis. Addressing these threats through proper methodological approaches, including rigorous sampling techniques and transparent reporting, added to the strength and validity of research outcomes.

7. Conclusion, Limitations and Future Scope

In this study, we presented a data-driven exploration of Indian Gen Z's online shopping behavior to glean insights into their psychological preference and functional dimensions. Applying contemporary statistical techniques like EFA, ISM, and MICMAC analysis, seven critical factors could be identified: **Convenience and Efficiency, Accessibility, Cost and Offers, Value, Customer Experience and Service, Payment and Financial Options, and Brand Perception.** The ISM-provided hierarchical structure specifies that Convenience, along with Payment and Financial Options, lies at the source or base as enablers in shaping online shopping preference, meaning that Gen Z primarily looks for platforms where seamless transactions and easy access are guaranteed. All other aspects are driven by these factors. These then affect Accessibility factor, which acts as the key node for the Value Proposition tier. Cost and Offers and Value remain linked, signifying that perceived value is associated with associated with cost strategies. This implies that these factors help to create perception about the value of the product. Customer Experience and Service form the nucleus for establishing trust and satisfaction, which consequently culminate into Brand Perception as the most dependent variable in the hierarchy. So, all the factors eventually govern the perception developed for brand (Ecom Website/App) hence shapes the decision making.

The results stress the necessity to produce a seamless, excellent, and service-oriented digital shopping atmosphere to attract Generation Z. The MICMAC analysis categorized the driving and dependence powers of different factors to further assists marketers in prioritizing their initiatives. For instance,

boosting Convenience and Financial Options can create an upward cascade across other factors, thereby uplifting brand equity and loyalty. The research enriches the academic literature and practical strategy by providing perspectives on how digital-native Indian Gen Z think, behave, and respond to shifting e-commerce industry ecosystems.

The study has a strong basis in methodology, yet certain constraints affect its validity. The initial bias exists because the participants consist mainly of college students from urban areas who have better technological access than others. The research results fail to represent people from rural and semi-urban areas who could demonstrate different patterns of online activity. The research design of this study prevents the researchers from understanding how Gen Z behavior changes over time and between different life stages of economic development. The subjective biases of experts might have affected the construction of both factor relationships and their assigned weights in ISM.

The research establishes the basis for *multiple upcoming investigations despite its existing constraints*. The research needs to follow participants across time to track how Gen Z shopping behaviors change as new technologies such as Artificial Intelligence (AI) and Augmented Reality (AR) and voice commerce develop. The study can be broadened by adding generational comparisons between Millennials and Gen Z as well as regional studies throughout India to examine cultural differences.

Declarations

Compliance with ethical standards

Conflict of interest The author declares that they have no conflict of interest.

Ethical approval

The author declares that this study complies with ethical standards. Although the study uses survey data, there are no ethical concerns because the data were provided with all personally identifiable information removed. It has also been confirmed that the research takes great care in handling personal information.

Informed consent

The author declares that consent was obtained from the respondents when data was recorded.

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Author Contribution

V.V. solely contributed to all aspects of this research work, including conceptualization, literature review, model development, methodology design, numerical experimentation, data analysis, solution interpretation, and derivation of managerial and practical implications. The author was also responsible for writing, reviewing, editing, and finalizing the manuscript.

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Figures

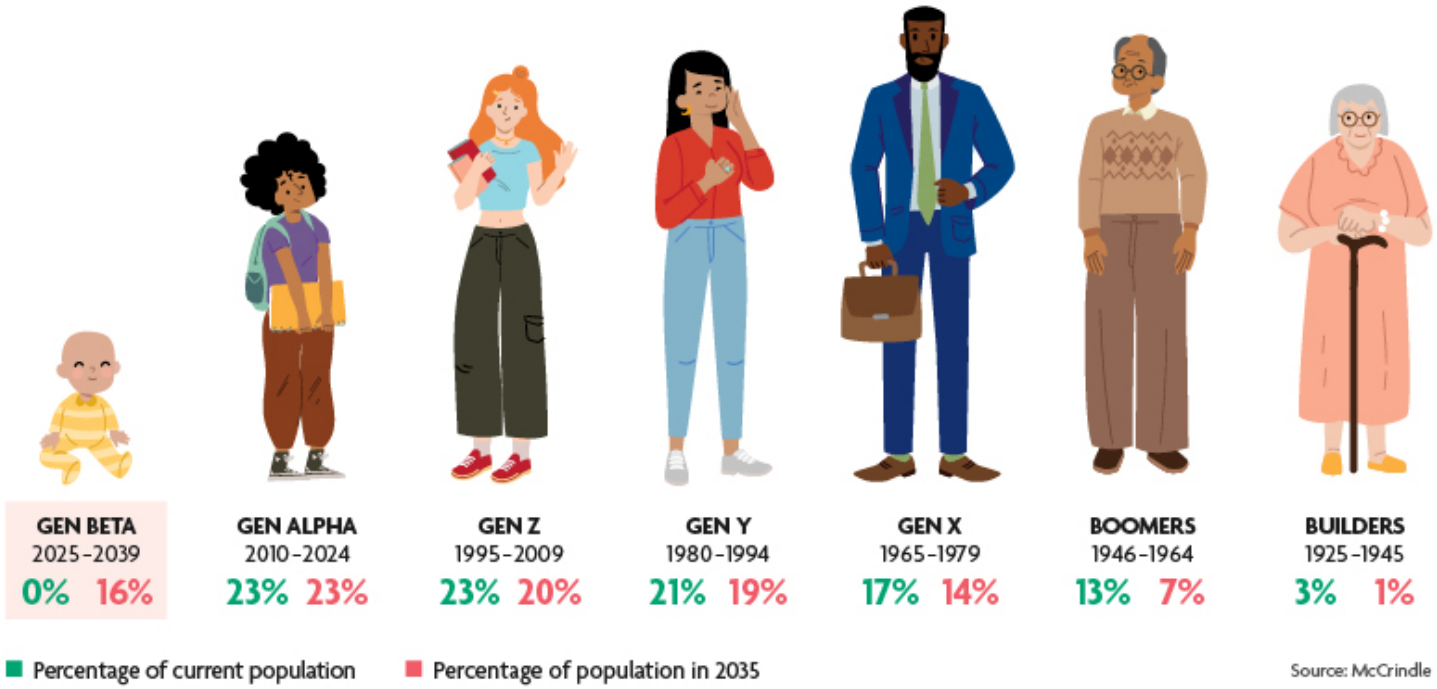


Figure 1

Timeline of Generations

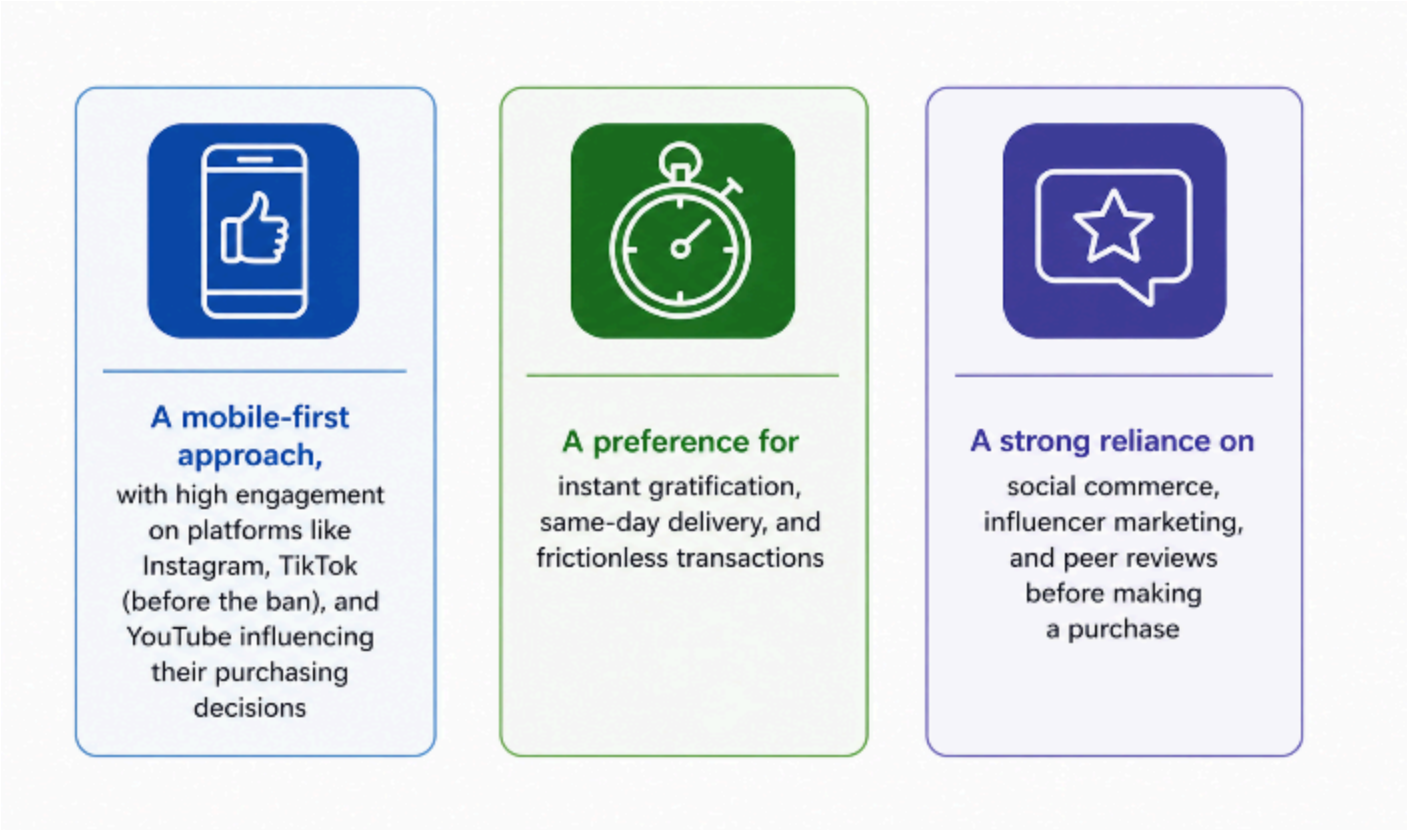


Figure 2

Gen Z: The Digital-First Consumer Group

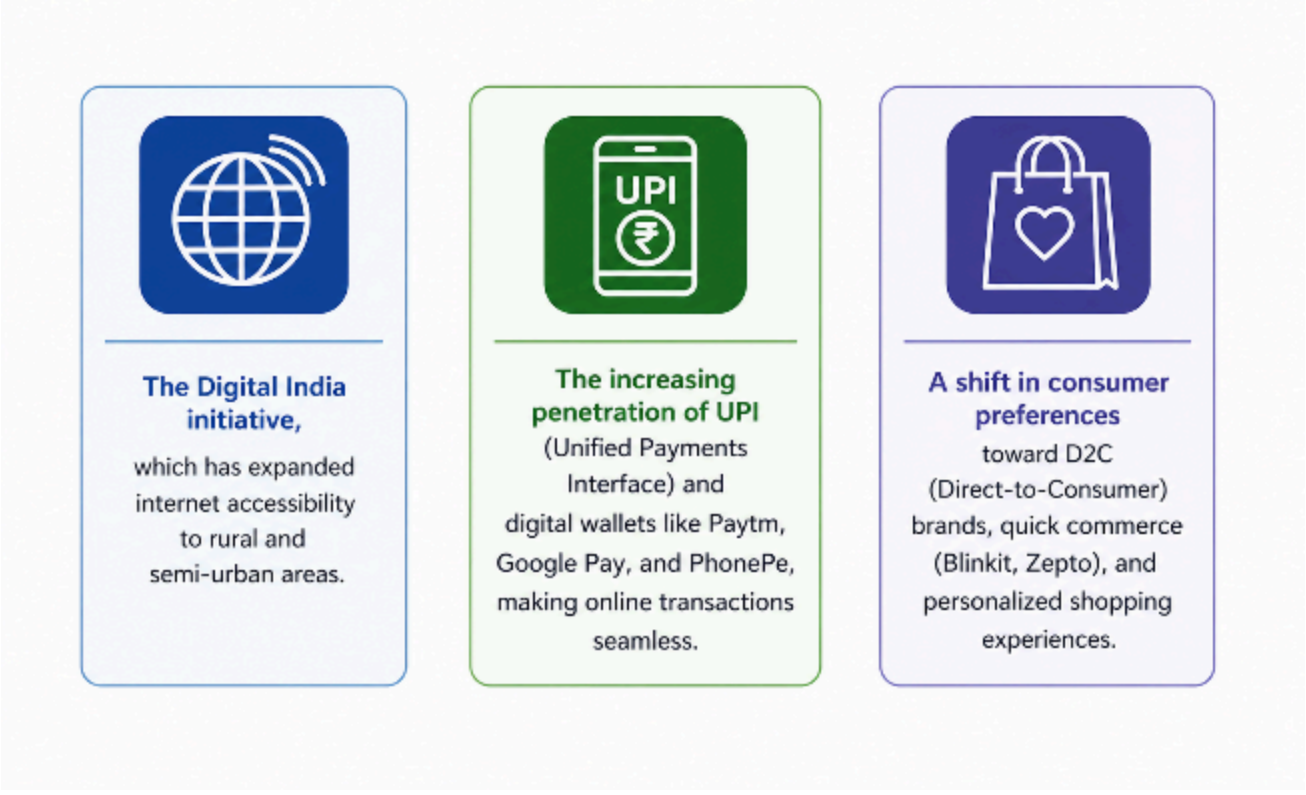


Figure 3

Unique Context of India’s E-commerce Growth

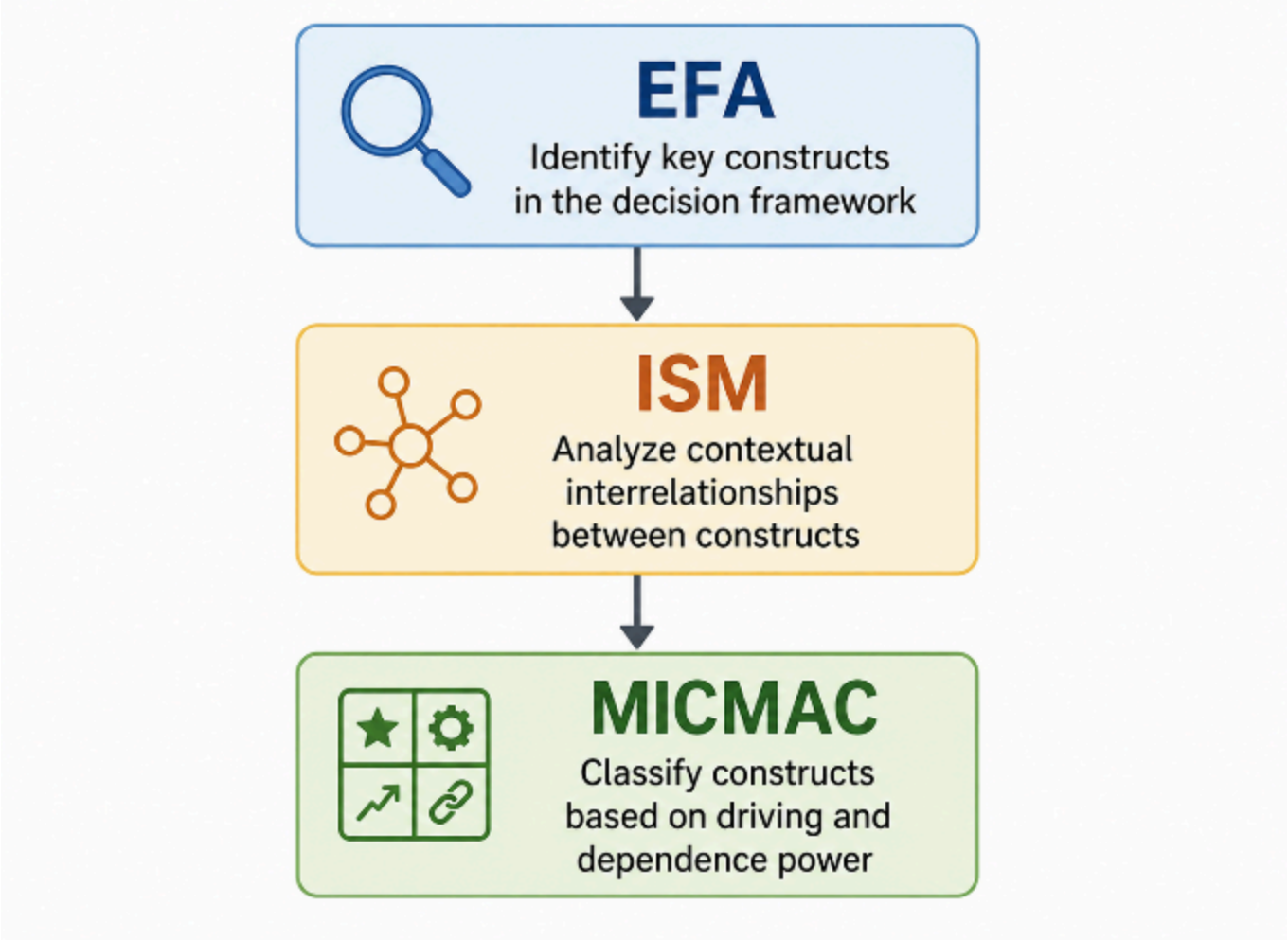
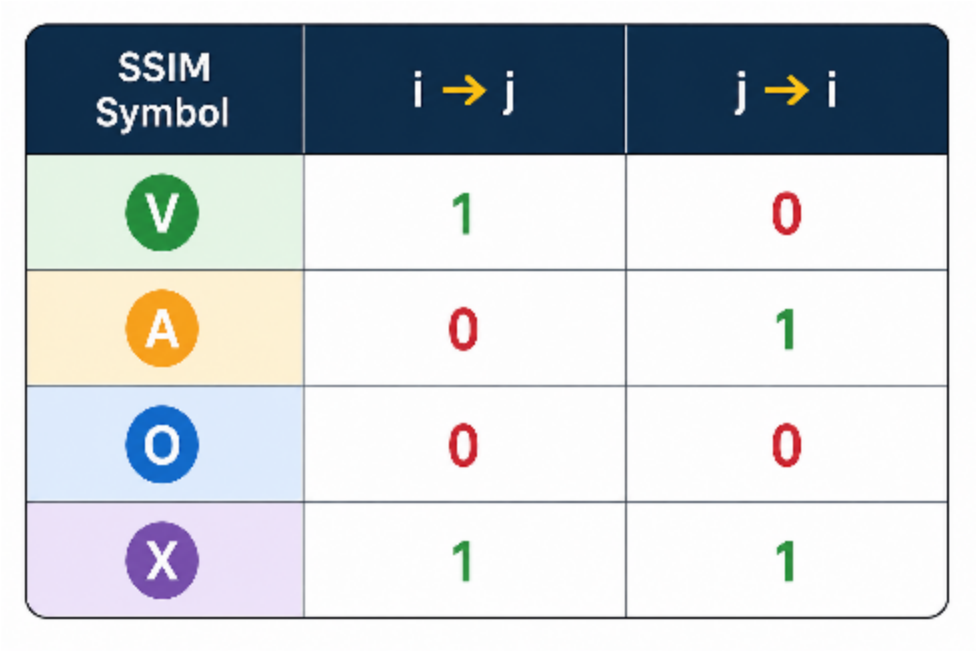


Figure 4

Structured Approach for Statistical Analysis



SSIM Symbol	i → j	j → i
V	1	0
A	0	1
O	0	0
X	1	1

Figure 5

Conversion Rules

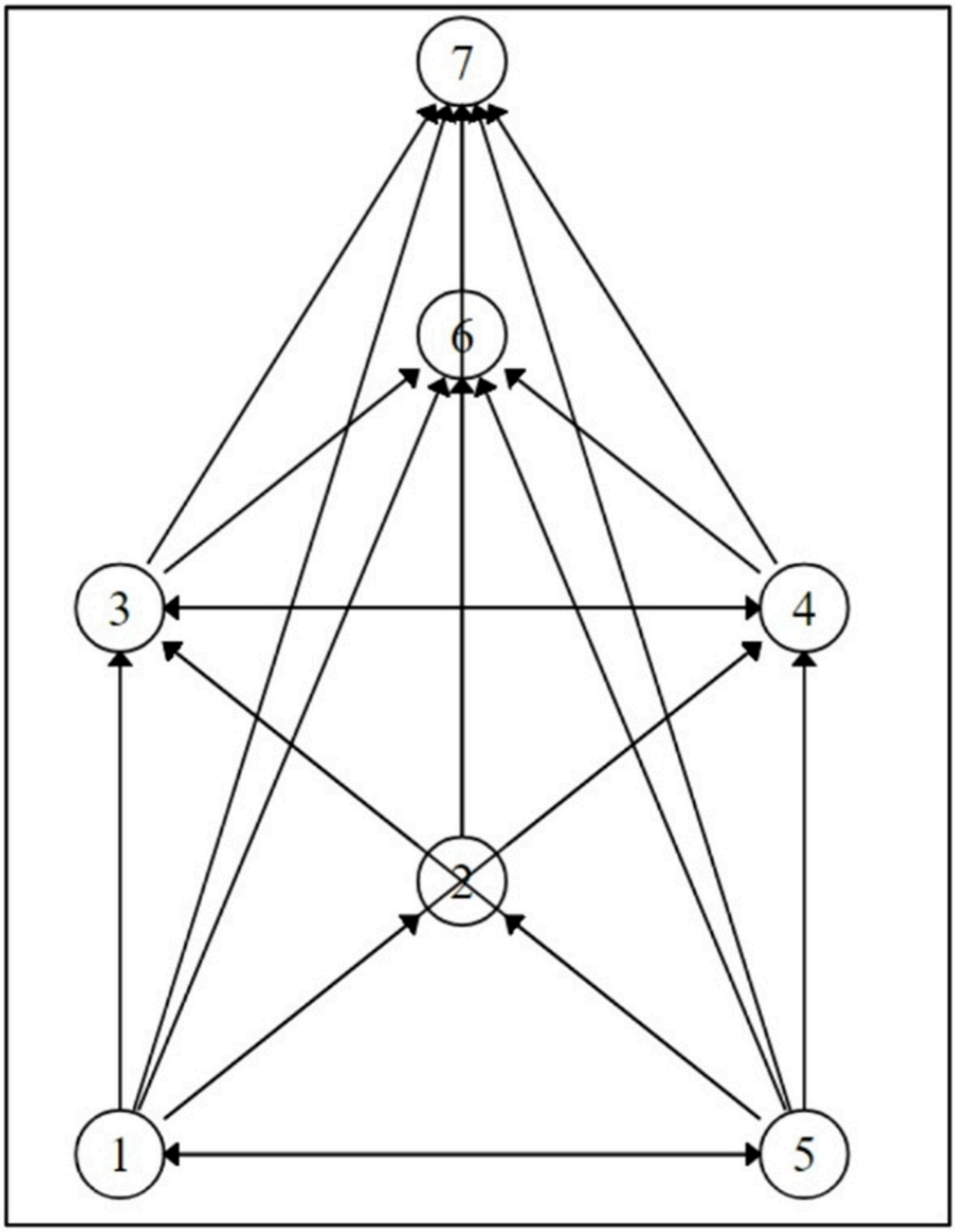


Figure 6

Diagraph

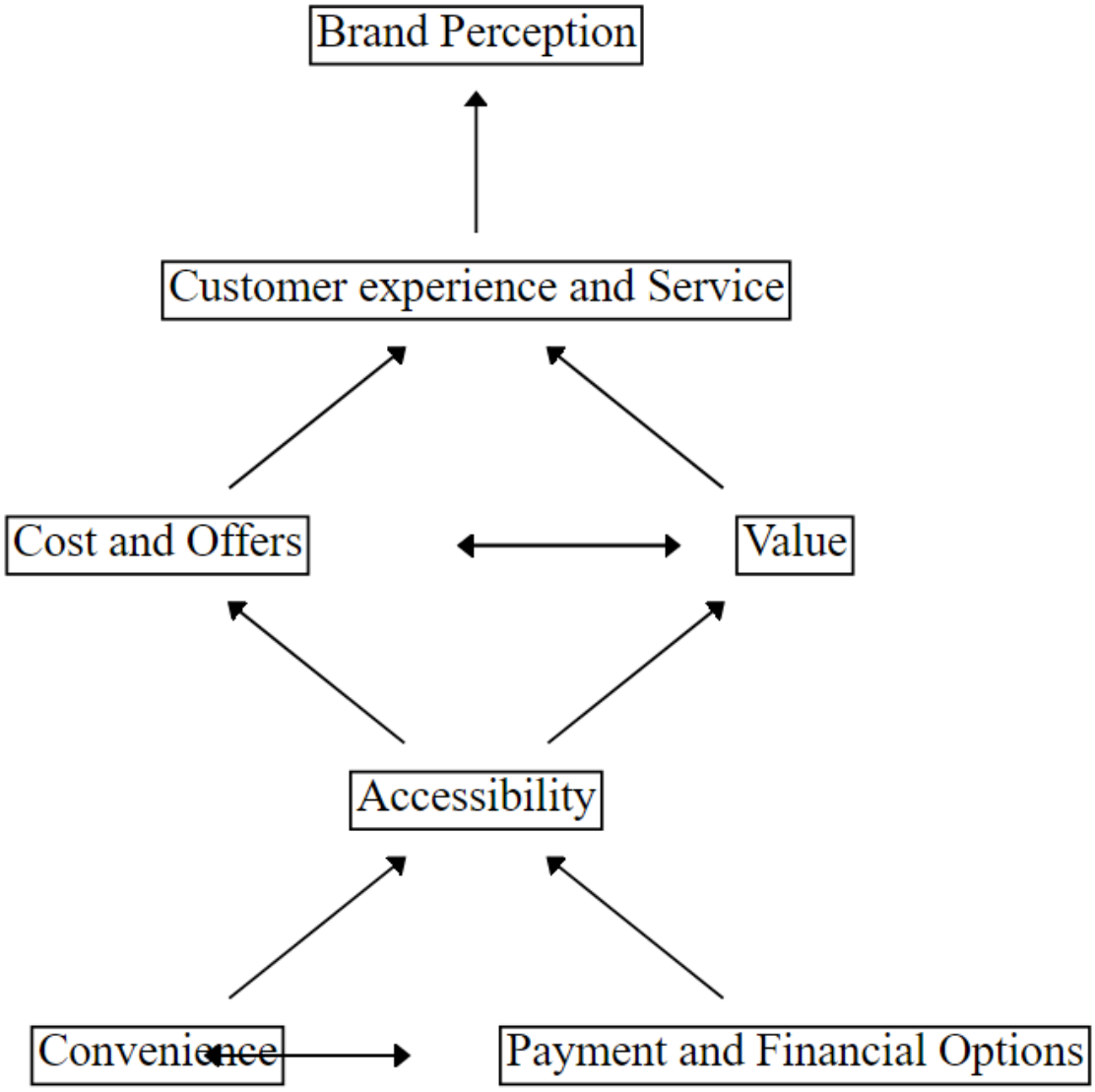


Figure 7

Hierarchical Model developed through ISM

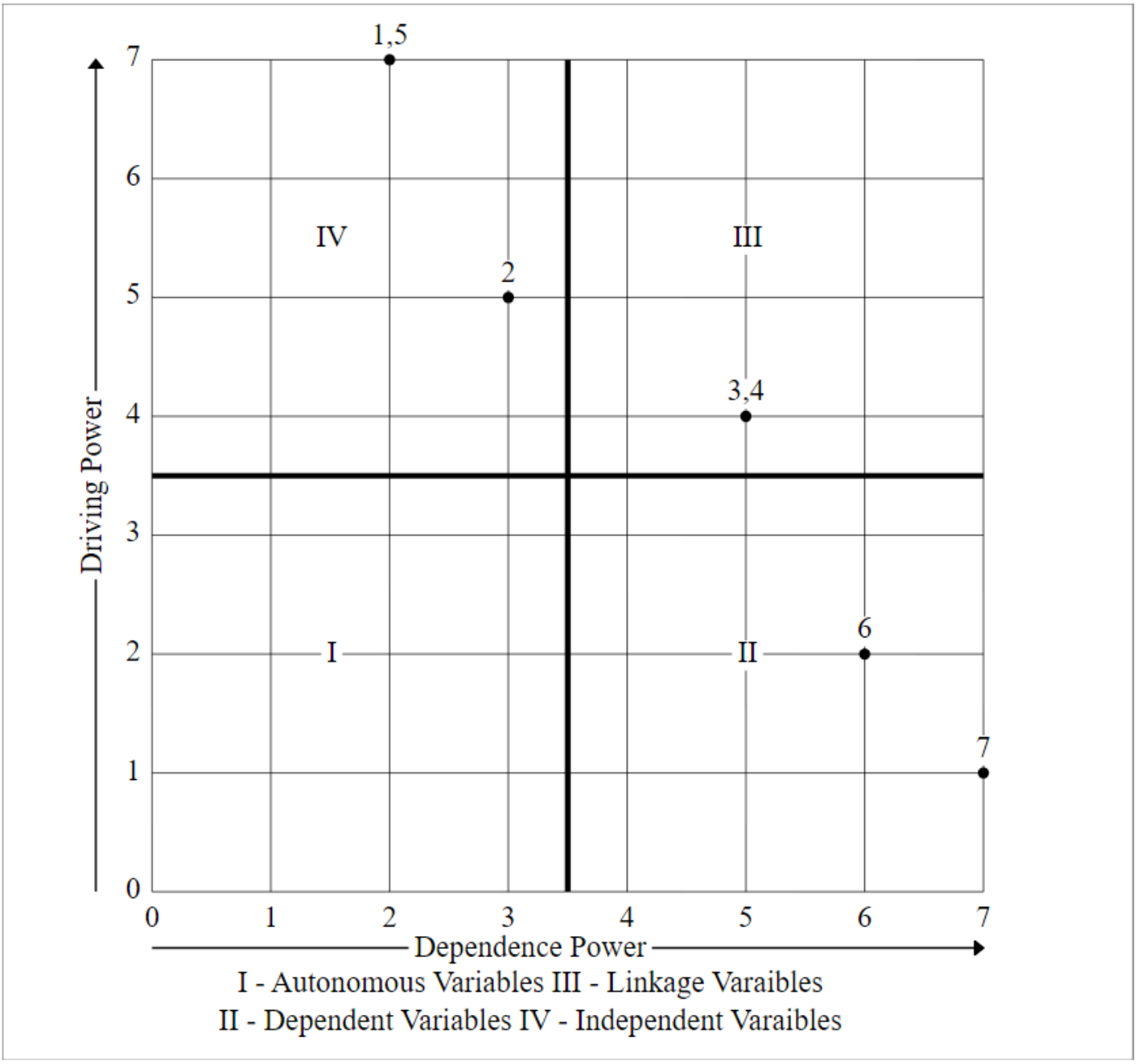


Figure 8

Factor Segmentation into Quadrants