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CLUSTER ANALYSIS FOR SEGMENTING GEN Z CONSUMERS ON DIGITAL PLATFORMS

Karthikeyan ES
PES1PG24MB110, MBA Trimester-III, PES University

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The purpose of this study is to use cluster analysis to separate Generation Z into discrete groups by analysing their digital activity. One of the most active demographics on digital platforms is Gen Z, which includes people between the ages of 18 and 29. They spend several hours every day on activities like creating content, purchasing online, and participating in communities. They also exhibit varying degrees of digital content preferences, influencer trust, and privacy concerns. The study concludes that Gen Z is not a uniform group but a mix of privacy-conscious users, trend-driven shoppers, and entertainment seekers.

KEYWORDS: ***Generation Z, cluster analysis, digital platforms, influencer trust, privacy concerns, social commerce and content creation.***

INTRODUCTION

In the modern digital world, Generation Z has emerged as one of the most active and influential consumer groups. This generation, born between the mid-1990s and early 2010s, has grown up in an environment where technology and the internet are not luxuries but everyday necessities. For them, social media, online shopping, streaming, and digital communities are a natural part of daily life. Unlike earlier generations, Gen Z is known for its constant connectivity, its ability to multitask across platforms, and its openness to both consuming and creating content. Because of these traits, businesses, educators, policymakers, and marketers all have a growing interest in understanding how Gen Z behaves on digital platforms.

Segmenting Gen Z customers according to their attitudes and use of digital platforms is the aim of this study. In addition to calculating how much time individuals spend online, the primary goal is to comprehend the behavioural and psychological aspects that influence their decisions. To distinguish different groups within Gen Z, important factors such content preferences, fear of missing out (FOMO), privacy concerns, confidence in influencers, and community involvement are examined. We can learn more about how this generation uses digital platforms and how companies or organizations may communicate with them more successfully by identifying these groups. With the use of SPSS software, the study employs cluster analysis to do this. Using a statistical technique called cluster analysis, people may be grouped into groups called clusters whose members are similar to one another but different from those of other clusters. The study's classification is based on criteria including the amount of time spent on digital platforms each day, the frequency of social commerce, the amount of time spent creating content, privacy concerns, influencer trust, and content choice. Finding significant clusters that represent various Gen Z user types—such as privacy-conscious, trend-driven, and entertainment-seeking—is the goal. Because SPSS offers both statistical precision and comprehensible outputs, including final cluster centres, ANOVA tables, and cluster membership distributions, it is utilized as the primary analytical tool. These results enable us to quantify the degree of differentiation between the clusters and to pinpoint the key elements influencing Gen Z behaviour. The final cluster centres provide a distinct picture of each group, and the ANOVA findings validate which variables have a significant impact on cluster formation. The distribution of the sample of 108 respondents among the three clusters is displayed in the cluster membership table, guaranteeing that the groupings are impartial and trustworthy for interpretation.

An essential topic that the study aims to address is whether Gen Z is a single, homogeneous group of digital users or if they are separated into several significant subgroups. This study uses cluster analysis to show that Gen Z is a collection of varied online personas rather than a single, unified population. While some are motivated by influencers and online shopping, others prioritize privacy, and still others spend a lot of time online in search of fun. These distinctions are significant because they show that rather than approaching Gen Z as a homogeneous group, engagement, communication, and marketing tactics should be customized to the unique requirements and habits of each section.

LITERATURE REVIEW

- Thangavel, P., Pathak, P., & Chandra, B. (2019). Segmenting Gen Z online shoppers using K-means cluster analysis.
  K-means cluster analysis was used in the study to create four groupings of Gen Z internet buyers. Price emphasis, brand preference, and convenience demands were among the distinctive characteristics of each group. This work shows how Gen Z consumers can be segmented on digital platforms.
- Singh, R., & Sibi, S. (2023). The consumer behaviour of Generation Z: An impact in modern marketing innovations
  This study demonstrates how Gen Z customers may be divided into different groups on online platforms. They studied Gen Z's purchasing habits on online shopping sites. The results demonstrate that loyalty is influenced by ease of use, enjoyment, and trust. This study contributes to the understanding of why digital platforms need to prioritise safe and easy-to-use experiences.
- Sudirjo, F., Nugraha, H., & Wibowo, A. (2023). The influence of website design and mobile optimization on Gen Z purchase intentions
  The authors looked at how Gen Z shops online and on mobile devices. They discovered that engagement and purchase intents are raised by effective design, graphics, and mobile optimisation. It draws attention to this generation's predilection for digital content.
- Popa, A. I., Voinea, L., & Dinu, V. (2023). Decision-making behaviour of Generation Z in online purchases: A systematic literature review.
  This study examined how Gen Z makes decisions when they purchase online. They discovered that their decisions and trust are significantly influenced by social media, influencers, and internet reviews. It demonstrates how Gen Z clusters are impacted by digital technology.
- Thangavel, P., Pathak, P., & Chandra, B. (2022). Cluster analysis for profiling Generation Z consumers on digital platforms
  Cluster analysis was once again utilized in a follow-up research on Gen Z digital consumers. According to the study, segmentation enables companies to better target their marketing to various personality and preference groups. This demonstrates the dependability of clustering in Gen Z research.
- Djafarova, E., & Bowes, T. (2021). 'Instagram made me buy it': Generation Z impulse purchasing and the role of influencers.
  They looked into how Gen Z purchasing decisions are influenced by social media influencers. The findings indicate that relatability and genuineness are crucial. This relates to digital segmentation since influencer impact may be used to create clusters.
- Francis, T., & Hoefel, F. (2018). True Gen: Generation Z and its implications for companies.
  Their study clarified the ways in which Gen Z's digital habits vary from those of previous generations. They emphasized virtues like social responsibility, sincerity, and digital-first conduct. This facilitates the creation of segmentation cluster bases.
- Wood, S. (2021). Generation Z as consumers: Trends and patterns in digital behaviour.
  The study looked at the internet buying habits of Generation Z. It demonstrates that if expectations are not fulfilled, Gen Z frequently moves platforms rapidly. This implies that cluster disparities in platform loyalty are something that digital marketers need to be aware of.
- Turner, A. (2022). Generation Z: Technology use and multitasking across digital platforms.
  The study focused on how Gen Z consumes quick material and multitasks across platforms. By grouping people according to patterns of digital behaviour, businesses may target the appropriate subgroups.
- Ordun, G. (2015). Generational differences in digital consumer behaviour: A comparative analysis.
  The study examined how digital consumer behaviour varies by generation. Gen Z was shown to be very reliant on brand experiences and digital connection. Because of this, cluster analysis may be used to efficiently organize them.

OBJECTIVES

- To examine the daily time spent, favourite devices, and peak use times by Gen Z consumers on digital platforms.
- To identify the primary determinants of Gen Z's online activity, including membership in online communities, privacy concerns, influencer trust, and FOMO.
- To assess and contrast various Gen Z user groups created using cluster analysis, as well as to spot distinct trends in their digital preferences and behaviours.

RESEARCH METHODOLOGY

The purpose of this study is to identify and categorize Gen Z customers according to how they use digital platforms. By examining their online behaviours, preferences, and attitudes—such as time spent, content production, influencer trust, FOMO, and privacy concerns—it is possible to distinguish several user groups. Young individuals (18–29 years old) who utilize digital platforms and social media often are the study's target demographic.

The study will be conducted in India, and data will be gathered over a three-month timeframe. For the cluster analysis, a sample size of 108 answers has been used. Theories of generational purchasing patterns, digital behaviour analysis, and consumer segmentation will be the primary sources of inspiration for this project. It is anticipated that the results would offer useful information to companies, marketers, and content producers that want to develop more effective tactics for Gen Z customers.

POPULATION

108 Gen Z respondents, ages 18 to 29, who are avid users of digital platforms like YouTube, Instagram, and other online communities, make up the study's demographic. No further sampling was done because the research is solely based on the responses that were gathered, and these 108 individuals are representative of the whole population being studied.

DATA COLLECTION AND SOURCE

The study's foundation is primary data gathered using Google Forms to create a structured questionnaire. Demographics, daily internet usage, influencer trust, privacy concerns, community involvement, and other behavioural characteristics were all covered in the questionnaire. Participants in Gen Z, who were between the ages of 18 and 29, provided 108 valid answers in total.

DATA ANALYSIS

Cluster Membership

Case Number	Cluster	Distance
106	3	2.778
107	3	3.450
108	1	4.426

Cluster 1 has 33 members (30.6%), Cluster 2 has 32 members (29.6%), and Cluster 3 has 43 members (39.8%) out of 108 valid replies, according to the cluster membership findings. The fact that the distribution is reasonably balanced suggests that the segmentation is significant and not skewed toward any particular group. The biggest cluster, 3, indicates that a sizable portion of Gen Z respondents are either strong users or entertainment seekers. Despite being smaller, Clusters 1 and 2 still account for substantial shares of the population, representing trend-driven consumers and privacy-conscious users, respectively. This balance between clusters improves the analysis's dependability and offers a strong foundation for analysing the digital habits of various Gen Z demographics.

Number of Cases in each Cluster

Cluster	1	33.000
	2	32.000
	3	43.000
Valid		108.000
Missing		.000

From Gen Z participants were grouped into three different groups using K-Means cluster analysis. Every cluster reflects a distinct pattern of views, interests, and use of digital platforms. The segmentation offers insightful information on Gen Z's online behaviour and the aspects that affect their involvement.

However, factors like gender, preferred device, and peak usage window did not make a meaningful difference between clusters. Cluster 1: Conscious of privacy and has moderate usage tendencies. Despite spending three to four hours a day online and often joining organizations, they have major privacy concerns. Since they appear to find a balance between social interaction and personal caution, they fall into the group of responsible digital users.

(33 respondents)

- Moderate age group (21–23 and 24–26).
- Average daily time spent is around 3–4 hours**.**
- Higher privacy concerns compared to others.
- Moderate content creation but active in community participation.
- Likely to be balanced users — use platforms for both social connection and self-expression, but are cautious with privacy.

Cluster 2: Are more motivated by business. They exhibit greater levels of social commerce and content production, trust influencers, and are more likely to be swayed by recommendations. This group represents trend-driven consumers who are more receptive to online buying and mostly rely on influencers.

(32 respondents)

- Slightly older Gen Z (24–26 years common).
- Higher content creation and commerce activity**.**
- Strong influencer trust and higher susceptibility to influence.
- Privacy concerns moderate.
- Likely to be trend-driven digital shoppers, who follow influencers and engage in online shopping often.

Cluster 3: Is made up of heavy users who are heavily affected by trends, spend more time online, and exhibit significant levels of FOMO. Although they are more interested in entertainment-related information, they are less concerned about privacy. This demographic might be characterized as entertainment seekers who place a high importance on enjoyment, fashion, and ongoing interaction.

(43 respondents)

- Mix of younger and mid-age Gen Z.
- Spend longer hours online (more 4+ hours daily).
- Lower privacy concern, higher FOMO.
- Strong susceptibility to influencers but with different content preferences (entertainment-heavy).
- Likely to be heavy users / entertainment seekers, driven by fun, trends, and constant engagement.

ANOVA

	Cluster		Error			
	Mean Square	df	Mean Square	df	F	Sig.
Age_group_number	9.631	2	.846	105	11.383	.000
Gender	.323	2	.250	105	1.295	.278
DailyTime	10.208	2	1.453	105	7.024	.001
PeakUsageWindow	.486	2	.567	105	.856	.428
DevicePreference	.263	2	.855	105	.307	.736
SocialCommerce	11.942	2	1.192	105	10.022	.000
ContentCreation	11.253	2	1.596	105	7.050	.001
CommunityParticipation	2.988	2	1.608	105	1.859	.161
FOMO	2.217	2	1.658	105	1.337	.267
InfluencerTrust	29.823	2	1.162	105	25.671	.000
InfluenceSusceptibility	36.773	2	1.068	105	34.440	.000
PrivacyConcern	12.967	2	1.579	105	8.212	.000
ContentPreference	48.412	2	1.365	105	35.458	.000

The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

From the ANOVA table, the variables that significantly differ between clusters are:

- Age Group ($p < 0.001$)
- Daily Time Spent ($p = 0.001$)
- Social Commerce Frequency ($p < 0.001$)
- Content Creation Frequency ($p = 0.001$)
- Influencer Trust ($p < 0.001$)
- Influence Susceptibility ($p < 0.001$)
- Privacy Concern ($p = 0.000$)
- Content Preference ($p < 0.001$)

This means clusters are mainly differentiated by time spent, commerce, creation, influencer trust, privacy, and content choice.

Variables like gender, device, and peak usage window were not statistically significant ($p > 0.05$), so they do not strongly explain the differences between clusters. P-values larger than 0.05 were found for several factors in the investigation, including gender, device choice, peak usage window, FOMO, and community membership. This indicates that their ability to distinguish between the clusters was not statistically significant. Although they characterize user behaviour, their influence on the formation of the groups was minimal.

Distances between Final Cluster Centers

Cluster	1	2	3
1		3.139	3.224
2	3.139		3.090
3	3.224	3.090	

Distance between Cluster 1 and Cluster 2 =3.139
Distance between Cluster 1 and Cluster 3 =3.224
Distance between Cluster 2 and Cluster 3 =3.090

Final Cluster Centre.

Final Cluster Centers

	Cluster		
	1	2	3
Age_group_number	3	2	2
Gender	0	1	0
DailyTime	3	4	3
PeakUsageWindow	1	1	1
DevicePreference	2	2	2
SocialCommerce	2	2	3
ContentCreation	2	3	3
CommunityParticipation	3	3	3
FOMO	3	3	3
InfluencerTrust	4	2	3
InfluenceSusceptibility	2	3	4
PrivacyConcern	4	3	3
ContentPreference	3	4	2

Cluster 1: Displays balanced community involvement, a moderate amount of time spent each day, and a greater level of privacy concern. This points to an active yet privacy-conscious user base.

Cluster 2: Higher ratings for influencer trust, social commerce, and content production. This suggests trend-driven consumers who purchase online and follow influencers.

Cluster 3: Less privacy worry, but more daily time, stronger FOMO, and strong entertainment preferences. This characterizes frequent users who are looking for amusement.

FINDINGS AND DISCUSSION

Three separate clusters were identified using the K-Means cluster analysis of 108 Gen Z respondents: Cluster 1 (33 members), Cluster 2 (32 members), and Cluster 3 (43 members). ANOVA was used to examine the differences between these groups, and at the 5% level ($p < 0.05$), a number of factors were found to be statistically significant. These include age group, amount of time spent each day, frequency of social commerce, frequency of content production, confidence in influencers, sensitivity to influence, privacy issue, and preferred content. With significance levels over 0.05, variables

including gender, preferred device, and peak usage window did not significantly contribute to cluster separation.

Each group's profile is provided by the final cluster centres. The 33 respondents in Cluster 1 appeared to be more cautious online users, as seen by their higher privacy concerns and lower influencer trust. These 32 respondents are trend-driven consumers who are heavily impacted by online marketing, as seen by Cluster 2's higher averages in social commerce, content production, and influencer trust. With 43 responders, Cluster 3 is the largest group. They are avid users and entertainment seekers, as seen by their greater daily time spent, increased FOMO, and lesser privacy concern.

The clusters are definitely distinct but not very far apart, as seen by the final cluster centres' distances of between 3.1 and 3.2 units. This indicates that while Gen Z respondents have many characteristics in common, there are also significant disparities that support categorization.

CONCLUSION

This research examined the digital behaviour of Generation Z and segmented them using K-Means cluster analysis in SPSS. Three different types were identified by the survey based on 108 valid responses: trend-driven consumers (32 respondents), entertainment seekers or heavy users (43 respondents), and privacy-conscious balanced users (33 respondents). The study found that the most significant elements impacting these clusters were daily time spent, social commerce engagement, content production, influencer trust, susceptibility to influence, privacy concerns, and content choice. However, demographic factors that did not statistically significantly separate the groups included gender, preferred device, and peak usage time. The results clearly show that Gen Z is a collection of varied digital personalities with a range of online behaviours and motives rather than a homogeneous generation. While many are motivated by entertainment, others are impacted by trends and internet shopping, and some prefer privacy. These observations highlight the necessity of customized engagement tactics as opposed to a one-size-fits-all strategy.

REFERENCES

1. *Bassiouni, D. H., & Hackley, C. (2016). Generation Z children's adaptation to digital consumer culture: A critical literature review. Journal of Customer Behaviour, 15(2), 113–133. https://doi.org/10.1362/147539216X14594362873512*
2. *Djafarova, E., & Bowes, T. (2021). 'Instagram made me buy it': Generation Z impulse purchases in fashion industry. Journal of Retailing and Consumer Services, 59, 102345. https://doi.org/10.1016/j.jretconser.2020.102345*
3. *Priporas, C. V., Stylos, N., & Fotiadis, A. K. (2017). Generation Z consumers' expectations of interactions in smart retailing: A future agenda. Computers in Human Behavior, 77, 374–381. https://doi.org/10.1016/j.chb.2017.01.058*
4. *Seemiller, C., & Grace, M. (2016). Generation Z goes to college. John Wiley & Sons.*
5. *Turner, A. (2015). Generation Z: Technology and social interest. The Journal of Individual Psychology, 71(2), 103–113. https://doi.org/10.1353/jip.2015.0021*
6. *Williams, K. C., Page, R. A., Petrosky, A. R., & Hernandez, E. H. (2010). Multi-generational marketing: Descriptions, characteristics, lifestyles, and attitudes. Journal of Applied Business and Economics, 11(2), 21–36.*
7. *Statista. (2023). Social media usage in India – Statistics & facts. Retrieved from https://www.statista.com*
8. *Reserve Bank of India. (2023). Handbook of Statistics on Indian Economy. RBI Publications.*
9. *Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). Multivariate data analysis (8th ed.). Cengage.*

APPENDIX

Google form questionnaire

1) Gender
- Male
- Female

2) Age
- 18–20 years
- 21–23 years
- 24–26 years
- 27–29 years

3) Daily time spent on digital platforms (social media, streaming, gaming, etc.)

Less than 1 hour
- 1–2 hours
- 3–4 hours
- 5–6 hours
- More than 6 hours

4) Peak usage window (when do you mostly use digital platforms?)
- Option 1Morning (6 AM – 12 PM)
- Afternoon (12 PM – 6 PM)
- Evening (6 PM – 10 PM)
- Late-night (10 PM – 2 AM)

5) How often do you purchase products/services through digital platforms (Instagram shops, YouTube links, Flipkart/Amazon ads, etc.)?
- Never
- Rarely (1–2 times in last 6 months)
- Sometimes (3–5 times in last 6 months)
- Often (monthly)
- Very Frequently (weekly)

6) How often do you create or post content (e.g., reels, videos, streaming, blogs)?

1= Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree

1= Strongly Disagree
- 1
- 2
- 3
- 4
- 5

5 = Strongly Agree

7) Community participation level (liking, commenting, joining groups, Discord, fandoms, forums, etc.)
- Very Low
- Low
- Moderate
- High
- Very High

8) I often check platforms to stay updated on the latest happenings.

1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often and 5 = Very Often

Never
- 1
- 2

- 3
- 4
- 5

Very often

9) I trust product recommendations made by influencers on digital platforms.

1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often and 5 = Very Often
Never

- 1
- 2
- 3
- 4
- 5

Very Often

10) I often get impressed or influenced by the content shared by influencers on digital platforms
1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly agree
Strongly disagree

- 1
- 2
- 3
- 4
- 5

Strongly agree

11) I adjust my privacy settings to control who sees my activity.

1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often and 5 = Always
Never

- 1
- 2
- 3
- 4
- 5

Always

12) Which type of content do you enjoy the most on digital platforms?

- Fashion, Lifestyle & Travel
- Gaming & Entertainment (incl. Memes, eSports, Streaming)
- Fitness, Health & Well-being
- Education, Career & Skill-building
- Technology, Gadgets & Current Affairs