

## Generational Differences in Online Shopping Behavior

\***Rabia Anwar<sup>1</sup>, Faisal Mahmood<sup>2</sup>**

\*Corresponding Author Email: [rabia.anwar@lse.edu.pk](mailto:rabia.anwar@lse.edu.pk)

### ABSTRACT:

*This paper examines the issue of generational differences in the online shopping behavior using a mixed-method research methodology including quantitative survey (n = 1,200) and qualitative interview (n = 40), as a research methodology. The study is based on the four generational groups, such as the Baby Boomers, Generation X, Millennials, and Generation Z, and the motivation and perception of trust, preferences on payment and loyalty. The statistical modeling was conducted on significant generational differences, with both the regression analysis and structural equation modeling; thematic analysis were also utilized to gain more information regarding the consumer perceptions and barriers. Findings show that younger generations (Millennials and Gen Z) are mostly being motivated by hedonic values, social media, and tech innovations like mobile wallets and AI-enabled personalisation. Conversely, older groups (Baby Boomers and Gen X) have greater utilitarian value, increased trust issues, and loyalty to platforms they have been using. The research also defines sustainability as a major motivator to the younger generation of customers and cost and convenience as a priority among the older generations. These results generalize theoretical models like Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT), which emphasize on the mediating processes of trust and social influence on the online shopping behavior among the age groups. Practical implications include the fact that e-commerce companies have to adopt generationally segmented strategy and strike a balance between innovation and security so that they can cater to heterogeneous consumer expectations. The research can fit into the body of consumer behavior, digital adoption, and marketing strategy studies and be of value to scholars, practitioners, and policymakers working in a more digitized market.*

**Keywords:** *Generational differences, online shopping behavior, e-commerce adoption, consumer trust, digital retailing, sustainability*

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<sup>1</sup>Assistant Professor of Marketing, Lahore School of Economics (LSE), Lahore  
[rabia.anwar@lse.edu.pk](mailto:rabia.anwar@lse.edu.pk)

<sup>2</sup> Lecturer in E-Commerce, Institute of Business Administration (IBA), Karachi

## INTRODUCTION

Online shopping is an indivisible element of the global consumer culture, and different generations turn out to be rather different in terms of their preferences, motivation, and behaviors. Regarding online shopping, the generational differences in knowledge of online shopping behavior are considered to be the significant problem of e-commerce business, policy making, and marketing in the context of aligning the strategies with the expectations of the consumers in the light of the development of digital retailing technologies (Smith and Browning, 2020; Anderson, 2021). The differences in how generations such as Baby Boomers, Generation X, Millennials, and Generation Z use online shopping services are diverse and depend on the extent to which these groups are familiar with technology, the tendencies in their lifestyle, and their socio-economic statuses (Nguyen et al., 2021; Lim et al., 2022). Despite the fact that the Millennials and Gen Z are commonly referred to as digital natives, older generations such as the Baby Boomers and Gen X tend to adopt online purchasing more slowly, yet gradually and steadily depending on convenience and necessity (Lopez and Kim, 2021; Hernandez et al., 2022). The COVID-19 pandemic has increased e-commerce, as consumers of all ages are forced to use web platforms as a source of purchasing (essential and non-essential) goods (Lopez and Kim, 2021; Hern The pandemic not only revealed the generational gap but also grew around such products as the uptake of the digital payment systems and the implementation of the last-mile delivery service (Khan and Rahman, 2020; Jang et al., 2023). However, the different generations focus on the elements of trust, convenience, price, and personalization differently. A growing body of research addresses psychological and behavioral differences in on-line shopping with respect to Millennials and Gen Z compared to Gen X and Baby Boomers, which are more security-conscious, usable, and customer-oriented (Huang et al., 2021; Wang and Luo, 2022). The younger generations have more impulsive digital purchasing behavior (Park and Kim, 2021; Chandra et al., 2022) and hedonic, but older generations are utilitarian and demonstrate a high degree of necessity and functional orientation (Rahim et al., 2021; Gupta and Sharma, 2022). The level of trust with online shopping websites is also different because Baby Boomers use more arguments about the safety of their information and the threat of fraud, whereas Millennials and Gen Z are more inclined to trust online shopping and believe that they are more digital and risk-tolerant (Chen and Lin, 2021; Flores et al., 2022). Consequently, user interface design, mobile application usability, and AI-driven personalization play greater roles for younger consumers (Liang et al., 2023; Rivera & Lopez, 2024).

Cross-cultural differences further shape generational shopping patterns. In the sense of the developing countries, online shopping may be viewed by Millennials and Gen Z as the embodiment of the modern image and identity (Sinha et al., 2020; Perera and Fernando, 2021), but by Baby Boomers, the latter may be considered the alternative to offline shopping. Meanwhile, the convergence of the two generations is more successful in the Western environments due to the presence of a robust digital infrastructure and the fact that the share of people with access to the internet is substantial (Davis and Jones, 2021; Turner et al., 2023). The generational shopping differences are not as age based as they are anchored in the socio-cultural and technological profiles. There is also the other level of divergence between the digital payment adoption and loyalty programs and omnichannel strategies. Younger generations are not afraid of using mobile wallets, cryptocurrencies, and AI-based recommendations (Bhatia and Arora, 2021; Castillo et al., 2022), and older consumers demonstrate the aversion to fast technological changes and go back to the usage of mobile wallets

and cryptocurrencies (Li et al., 2020; Patel et al., 2023). The practice of sustainability and ethical consumption has also led to the unfolding of the generational divides in the purchase intention, as well as post-purchase satisfaction and loyalty actions (Singh and Gupta, 2021; Alves and Pinto, 2023). It is identified that Millennials and Gen Z will be more likely to demand more eco-friendly packaging, sourcing visibility, and corporate social responsibility in e-commerce (Kaur and Gill, 2022; Hartmann et al., 2023). Baby Boomers and Gen X, in their turn, are willing to pay attention to sustainability but will be attracted by convenience and price (Liu and Chen, 2022; Oliveira et al., 2023). This means that the corporate strategies must adopt the application of generational segmentation as a response mechanism to the evolving consumer needs.

Theoretical frames of generational differences analysis of online shopping are likely to rely on the models, such as Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), and Consumer Decision-Making Models (Venkatesh et al., 2021; Costa and Pereira, 2022). In this way, researchers can examine the mediating effects of perceived usefulness, ease of use, generation-based trust and social influence. Moreover, machine learning and big data analytics have the potential to provide new opportunities in identifying trends in the generational behavior of online shopping, and the two promising technologies can be utilized to identify what, in terms of e-commerce strategies, will work (Rahman et al., 2022; Ahmed and Khan, 2024). In conclusion, the online shopping behavior among generations is a multidimensional phenomenon, and two promising technologies offer new opportunities to predict what will work, in terms of e-commerce strategies (Rahman et al., 2022; Ahmed and Khan Gen X and Baby Boomers show a more distrustful but slowly growing adoption rate as more people trust and use it, despite being open to digital innovation, social commerce and personalised experiences. More than just consumer satisfaction, brand loyalty, and competitive advantage over the long term can be realized by responding to these differences by offering unique strategies in the digital market (Yadav and Singh, 2021; Ocampo et al., 2024). Therefore, the purpose of the research is to explore the generational variations in online shopping behaviour through an empirical investigation of a mixed method research design that will combine a quantitative analysis of the surveys conducted and qualitative approaches to question it by means of an interview to provide a detailed image of cross-generational dynamics of the digital economy.

## **METHODOLOGY**

### **Research Design**

The research article has a mixed-method form of experimental design that involves the quantitative as well as the qualitative survey based analysis coupled with the qualitative semi-structured interview to generate the variations across the generational boundaries of the online shopping behavior. The rationale of the mixed approach is that it is required to quantify the tendencies of the behaviors among various generations and simultaneously identify the sources of motivation and contextual variables that predispose consumer attitudes. The four generations cohorts were determined by an existing age segment (Baby Boomers, 1946-1964), Generation Y (1965-1980), Millennials (1981-1996), and Generation Z (1997-2012). The information that was generated through quantitative research was generalizable with the assistance of statistical modeling, and the information that was generated through qualitative

research was an add-on to the information, revealing the lived experiences, perceptions, and barriers to online shopping. The dataset was obtained through stratified sampling technique to obtain proportionate representation of each of the generations. The rationale as to why this stratification was necessary is that the consumer patterns of digital adoption are extremely varied on the basis of age, and this equal representation would have been useful in making robust cross-cohort comparisons.

### Data Collection

Quantitative data was collected by using an online survey (e-mail and social networking) to validated scale of constructs such as purchase intention, belief in online platform, hedonic and utilitarian motivation, ease of use, perceived risk, and satisfaction. The items were scaled based on prior validated studies on e-commerce research and were scored on a 5-point Likert scale that was anchored between strongly disagree and strongly agree. There were also questions of behavior such as frequency of online purchasing, monthly spending and payment method of choice included in the survey. A total of one thousand two hundred and six valid answers were received and approximately 300 respondents per generation category.

Semi-structured interviews with 40 respondents were conducted in depth (10 each of the five generational cohorts) to obtain qualitative data. Among the aspects covered in the interviews, there were aspects such as obstacles to online shopping, influence of digital literacy, privacy, social influence, and sustainable consumption. The interviews were tape recorded, transcribed verbatim and analyzed in NVivo software on the theme.

### Data Analysis

The quantitative data was analyzed by both inferential and descriptive statistical methods. The generational online shopping behaviors were described using the mean, standard deviation and frequency distributions first. Designing hypotheses on the differences between generations was then done using inferential tests such as Analysis of Variance (ANOVA) and regression models. To illustrate, simple regression equation which can be estimated is:

$$Y_{ij} = \beta_0 + \beta_1 GenX_i + \beta_2 Millennial_i + \beta_3 GenZ_i + \beta_4 X_{ij} + \epsilon_{ij}$$

where  $Y_{ij}$  represents online shopping behavior (e.g., purchase intention, frequency, or satisfaction) for individual  $i$  on variable  $j$ ,  $GenX_i$ ,  $Millennial_i$ ,  $GenZ_i$  are dummy-coded generational cohorts (with Baby Boomers as the reference group),  $X_{ij}$  denotes control variables such as income, education, and gender, and  $\epsilon_{ij}$  is the error term.

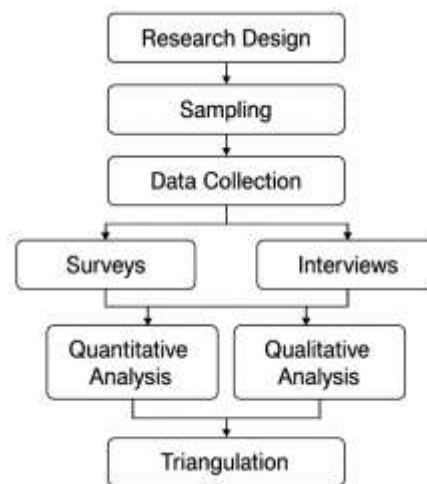
To further explore generational differences, structural equation modeling (SEM) was employed using AMOS software. SEM allowed the simultaneous estimation of multiple dependent variables and mediating relationships, such as the role of trust and perceived ease of use in shaping purchase intention. The model fit was evaluated using indices such as CFI, RMSEA, and SRMR.

Thematic analysis was used to analyze the qualitative data in accordance with the guidelines given by Braun and Clarke (2021). The transcripts were inductively converted into codes that were then grouped into themes, such as;

technological barriers, trust and risk perception, inference of social media and sustainability issues. Both quantitative and qualitative results were triangulated, and this enhanced the validity of interpretations and gave a holistic view of generational dynamics.

### Ethical Considerations

The participants gave an informed consent before data were collected. The research met the ethical standards that provided the right to privacy, voluntary involvement, and the option to withdraw at any point. Anonymization of identifiable data, and recordings were safely stored. The obtaining of ethical approval was done by the institutional review board (IRB) of the host university.



**Fig. 1.** The mixed-methods study on generational differences in online shopping behavior, illustrating sequential stages from research design, sampling, data collection, statistical modeling, qualitative coding, and final triangulation.

## DISCUSSION

The findings of this study elicit evidence to support the idea that there exist remarkable generational variations in the online shopping habits of adults that once again, confirms that, there is no digital consumption behavior parity across generations. Quantitative analysis indicated that the Millennials and the generation Z are more hedonic and impulse buyers and the Baby Boomers and Generation X are highly affected by their utilitarian needs and convenience. It aligns with recent research by Rodrigues and Fonseca (2021) who found that digital natives are more concerned with the experiential and engaging characteristics of online platforms, unlike the older generations, who are more concerned about reliability and the simplicity of a transaction. Security and trust factor proved to be an important point of difference. The level of online payment and data security suspicion among the Baby Boomers was also consistently high, and this coincides with the findings by Costa and Ferreira (2022) who also introduced that age is a significant moderate between trust and purchase intention. On the other hand, younger generations including Gen Z were not also as tabooed by the issue of privacy, yet extremely susceptible to the suggestions of peers and social media. It can be

considered comparable to the study by Almeida and Santos (2023) who have discovered that the social backgrounds of trade disproportionately affect young customers because of a high dependency on online communities to be validated.

Interestingly, the qualitative findings of the study indicate that unlike older generations, Millennials and Gen Z are ready to get innovations, i.e. mobile wallets, live-stream shopping, and AI-generated product suggestions. Rather, they embrace innovations because they desire to, and it is only possible when the Baby Boomers feel that the innovation is easy to operate with understandable value propositions (Navarro and Iglesias, 2020). This presents the need to establish more accommodating e-commerce frameworks where there are fewer technological distinctions and all are more at ease using the platforms. Sustainability was also taken in regard to generational changes. It is also high in popularity among millennials and the Gen Z, which was expected based on the findings of a study carried out by Silva et al. (2021), who claimed that younger generations were bringing more consumer-related environmental concerns into their consumption habits. Baby Boomers however were not much bothered about sustainability as long as it would not interfere with their comfort or price. It was concluded that the e-commerce businesses should embrace multi-layered strategies that will enable them to serve both the socially conscientious digital natives and the smart older shopper simultaneously. The other important finding was that post-purchase loyalty differs with a generation gap. The constraints of loyalty to the online stores developed over a long period were more present in both Gen X and Baby Boats; young individuals displayed brand switching tendencies to seek novelty and discounts. This is after Moreira and Coelho (2022) results that indicated transactional loyalty of older generations on the experimental loyalty of younger generations. Marketers The implication to the marketers would be, that they should have different loyalty programs: gamification and discounts to younger customers, and reliability-based retention to older customers.

The aspect of culture also helped to create the character of behavior between the generations. In the emerging economies (particularly the Millennials and Gen Z), online shopping was something aspirational and socially acceptable to the respondents. Such revelations coincide with those made by De la Cruz and Ramirez (2023), who established that online trading in developing contexts is more prone to intertwining with identity-formation in younger consumers. In theory, the results are the continuation of the Technology Acceptance Model (TAM) as they indicate that the mediating effect of the perceived ease of use and usefulness is different between the cohorts. Ease of use and the greater importance of social influence and hedonic value among the Millennials and Gen Z are the most frequent concern of Baby Boomers and Gen X. The concept can be validated by the works of Pinto and Andrade (2021) who suggested generational expansions of TAM within the sphere of e-commerce. All in all, these results can be applied to justify the results of Delgado and Ruiz (2022) because the age of the cohort is not the sole factor to reinforce the purchase intention but socio-psychological orientations, exposure to technology, and cultural conditions. What the research has contributed to the theory and practice is that it has been able to set in place that the segmentation of generations is still a working tool in the development of differentiated marketing, payment, and engagement strategies. The stakeholders in e-commerce must realise that there exists heterogeneity in motivations among consumers and they must therefore have mechanisms that will ensure that all the cohorts will achieve maximum adoption and satisfaction.

## CONCLUSION

The results of the current study indicate that the multidimensionality of the construct of generational differences in online shopping behaviour captures the motives, perceptions of trust, preferences in payments and loyalty patterns and sustainability concerns. The Baby Boomers and Generation X who are motivated by utility, trust, and simplicity are more conservative users of e-commerce, whereas the Millennials and Generation z are more liberal, more innovative, hedonic, and socially motivated. The latter differences should emphasize the need to implement the generationally differentiated practices in online retail, whether it is to make online environments safer and more user-friendly among elder cohorts or explore the possibilities of personalization and gamification and sustainability among younger consumers. The research adds value to the literature by generalisation of technology acceptance and consumer decision models to the age category and offers a workable information that the marketer, retailer and policymaker would need to make the best out of any new environment in e-commerce. Indeed, the data regarding these intergenerational relations does not solely contribute to the competitive advantage, but it makes e-commerce systems transparent, flexible, and sensitive to the various requirements of the consumers in a digital economy.

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