

DEMOGRAPHIC PROFILES OF E-COMMERCE USERS: A REGIONAL AND GLOBAL PERSPECTIVE ON DIYARBAKIR, TURKIYE

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ABSTRACT

Purpose- e-Commerce has become a cornerstone of economic activity in the digital age. While demographic influences on e-commerce behavior have been widely studied globally, their manifestation in developing regions remains underexplored. This study examines the impact of demographic variables, particularly age and gender, on e-commerce participation in Diyarbakir to highlight the region-specific challenges and opportunities in digital consumer behavior.

Methodology- A cross-sectional quantitative approach was employed, surveying 675 participants in Diyarbakir. The sample size was determined using Cochran's (1952) formula to ensure representativeness. Non-parametric statistical analyses, including the Chi-Square (χ^2) test and Cramér's V effect size, were utilized. The study's reliability was supported by a 100% response rate and a Cronbach's Alpha of 0.91. Ethical compliance was ensured through informed consent and data confidentiality measures.

Findings- The gender distribution of e-commerce users aligns with national trends, yet age-based differences are pronounced. Individuals aged 18–24 exhibit high engagement, whereas those 45 and older demonstrate limited participation due to the digital divide. Additionally, cultural norms and regional economic conditions significantly influence online shopping behavior. These findings highlight the need for localized digital inclusion strategies to bridge demographic disparities in e-commerce participation.

Conclusion- This study underscores the role of demographic factors in shaping regional e-commerce behavior. While younger consumers are active digital shoppers, older demographics face barriers related to digital literacy and access. Practical recommendations are provided for policymakers, businesses, and digital marketers to enhance e-commerce adoption in developing regions. Future research should examine additional socioeconomic factors and adopt longitudinal methods to assess the long-term impact of digital transformation on consumer demographics.

Keywords: e-Commerce, demographic factors, digital divide, age and gender analysis, regional e-commerce usage

JEL Codes: L81, O33, R11

1. INTRODUCTION

The rapid expansion of digital commerce has fundamentally reshaped global economic structures, enabling businesses to transcend geographical barriers and consumers to access products and services with unprecedented convenience (Kotler & Keller, 2016). While e-commerce adoption continues to surge in both developed and developing economies, the rate and extent of this transformation remain highly uneven across different regions. These disparities are largely influenced by socioeconomic conditions, digital infrastructure, and cultural norms, leading to significant variations in consumer behavior (Norris, 2001; Van Dijk, 2020). Although numerous studies have examined e-commerce demographics at national and global scales, localized research that explores regional differences remains scarce, leaving important gaps in the understanding of demographic influences on digital consumer behavior.

Diyarbakir presents a compelling case for investigating these regional dynamics. The city's distinct demographic structure, coupled with infrastructural limitations and digital literacy challenges, poses notable barriers to e-commerce adoption. Additionally, gender-based disparities in internet access and technology usage further shape online shopping behaviors, yet the interaction of these demographic factors within regional e-commerce ecosystems remains largely unexplored (UN Women, 2022a). To address this critical gap, this study delves into the role of age and gender in shaping e-commerce participation in Diyarbakir, contextualizing these findings within national and global frameworks.

A quantitative research design was employed, drawing on survey data collected from 675 participants. The study investigates key aspects such as digital literacy levels, purchasing preferences, and the influence of socioeconomic conditions on consumer

decisions. By comparing local findings with national data (e.g., Turkish Statistical Institute) and international reports (e.g., OECD, UN Women), this research aims to uncover the strategic significance of demographic factors in e-commerce adoption. The insights generated are expected to inform both academic discourse and practical applications, offering actionable recommendations for businesses, policymakers, and digital commerce strategists.

The remainder of this article is structured as follows: First, a comprehensive literature review examines previous research on e-commerce demographics, with particular attention to the digital divide and gender-based disparities. Next, the methodology section details the research framework, including survey design, sampling strategy, and statistical analysis techniques. The findings and discussion section then presents empirical insights, comparing local patterns with national and global trends. Finally, the study concludes by summarizing key findings and proposing strategic recommendations aimed at enhancing digital commerce accessibility and inclusivity.

Ultimately, this research provides a nuanced perspective on the demographic dimensions of e-commerce adoption, offering valuable insights that can contribute to both regional policy formulation and global discussions on digital consumer behavior.

2. LITERATURE REVIEW

This study explores the strategic significance of age and gender variables within the e-commerce ecosystem, specifically within the context of Diyarbakir, while drawing attention to existing gaps in literature.

2.1. The e-Commerce Ecosystem and Digitalization

Kotler and Keller (2016) highlight that e-commerce has gained substantial traction in global trade, with digitalization serving as a pivotal driver of this transformation. Reports from the OECD (2023a) further assert that e-commerce has evolved into one of the core components of economic activities. In developing economies, investments in digital infrastructure, coupled with the proliferation of online shopping platforms, are fundamentally reshaping consumer behavior (Statista, 2024b; ITU, 2022).

Arslan Dinç & Karabıyık (2023), in their study on the dynamics of the e-commerce ecosystem, assert that age, gender, income level, and cultural factors constitute the primary determinants of online consumer behavior. The literature consistently underscores the critical influence of age and gender variables on consumer habits and the strategic targeting approaches of e-commerce platforms (Güler Binkanat & Duygun, 2023; Norris, 2001).

2.2. Impact of Demographic Factors on e-Commerce Usage

Demographic factors have long been recognized as key determinants of e-commerce adoption. Various studies indicate that age and gender, digital literacy, and socio-economic status significantly influence consumers' propensity to engage in online shopping.

2.2.1. Age Factor

Prensky (2001) introduced the concept of "digital natives," emphasizing the innate technological affinity of younger users and their accelerated adaptation to online platforms. The literature consistently identifies the 18-24 and 25-34 age groups as the most dominant among e-commerce users (Statista, 2024a; Republic of Türkiye Ministry of Trade, 2024b). Van Dijk (2020) asserts that the technological adaptability and high mobile device usage within these age cohorts significantly enhance their online shopping behaviors.

Conversely, the integration of older age groups (45 and above) into digitalization is demonstrably slower. Van Deursen and Van Dijk (2019) explain this through the "digital divide" concept, highlighting how technological literacy barriers, entrenched habits, and trust deficits constrain online shopping engagement in this demographic. Data from the Turkish Statistical Institute (TÜİK, 2024b) corroborates these findings, revealing limited participation in the digital economy among older populations in Türkiye.

2.2.2. Gender Factor

Kotler and Keller (2016) emphasize that gender is a pivotal determinant of consumer behavior, with female users exhibiting heightened online shopping tendencies in sectors such as fashion, cosmetics, and healthcare. Grewal, Roggeveen, and Nordfält (2017) further assert that these preferences have driven the development of targeted digital marketing strategies specifically tailored for female consumers.

However, reports from UN Women (2022e) and the OECD (2023b) underscore that women in developing regions face lower levels of access to digital platforms compared to men, a disparity commonly referred to as the "digital gender divide." TÜİK (2024b), within the Turkish context, acknowledges an increase in internet usage among women but also highlights persistent regional discrepancies in gender parity on e-commerce platforms.

2.3. e-Commerce in Türkiye and Regional Disparities

In recent years, the e-commerce sector in Türkiye has experienced rapid growth. According to the Republic of Türkiye Ministry of Trade (2024b), online shopping volumes have surged in major metropolitan areas such as Istanbul, Ankara, and Izmir, largely driven by the expansion of diverse payment methods—including credit cards, mobile payments, and cash on delivery. In contrast, the Eastern and Southeastern Anatolia regions face challenges related to limited digital infrastructure and lower levels of digital literacy, factors that hinder broader e-commerce adoption. Furthermore, research focusing on Diyarbakir demonstrates that the participation of younger demographics in the e-commerce ecosystem is comparable to -or even exceeds- the national average. In addition, Van Dijk (2020) emphasizes that societal gender dynamics are pivotal in shaping digital economic participation; notably, the more balanced female-to-male ratio among e-commerce users in Diyarbakir serves as an encouraging indicator of gender equality in the digital sphere.

2.4. Addressing Gaps in the Literature: The Regional Context of E-Commerce and the Case of Diyarbakir

Existing literature extensively explores e-commerce adoption within the framework of demographic differences, with particular emphasis on variables such as age, gender, digital literacy, and socioeconomic status (Kotler & Keller, 2016; Van Dijk, 2020). However, a significant gap remains concerning regionally focused studies, particularly those examining how digital inequalities manifest in specific geographic and socioeconomic contexts. While extensive research has been conducted at national and global scales, empirical investigations at the regional level remain scarce, leaving critical questions unanswered regarding the intersection of e-commerce engagement and localized demographic structures (Norris, 2001; OECD, 2023).

One of the key challenges identified in previous studies relates to the impact of regional disparities on the effectiveness of digital inclusion policies. Norris (2001) argues that structural inequalities among different regions hinder the success of digital divide interventions, limiting the potential of initiatives aimed at fostering universal access to e-commerce platforms. Similarly, Van Dijk (2020) emphasizes that global efforts promoting gender equality in digital spaces often fail to account for region-specific socioeconomic and infrastructural challenges, particularly in rural and economically disadvantaged areas.

Diyarbakir represents a compelling case study in addressing these gaps in the literature. As a city characterized by a predominantly young population, a developing digital infrastructure, and distinct socioeconomic patterns, it presents a unique opportunity to examine how demographic factors influence e-commerce participation at a regional level. Despite its potential for digital market expansion, persistent gender-based disparities in online participation and the generational digital divide remain underexplored in this context. Existing research has primarily focused on Türkiye's major metropolitan areas, neglecting the nuanced regional differences that shape digital consumer behavior in developing cities (Republic of Türkiye Ministry of Trade, 2024; TÜİK, 2024).

By conducting an empirical analysis of e-commerce engagement in Diyarbakir, this study aims to bridge the existing knowledge gap by providing a comparative perspective that situates the region within both national and global discussions on digital commerce adoption. Investigating the differential impact of age and gender on online consumer behavior in a developing regional context contributes to a broader understanding of digital inclusivity and market accessibility, offering critical insights for policymakers, businesses, and scholars engaged in e-commerce expansion strategies.

2.5. The Positioning and Original Contribution of This Research

This study seeks to provide a significant academic contribution by examining age and gender-based disparities in e-commerce participation within a regional framework, thereby expanding discussions on digital inclusivity and market access in emerging economies. Unlike previous studies that primarily focus on aggregated national-level data, this research adopts a granular approach by situating Diyarbakir within a broader regional and international comparative context.

By employing a systematic literature review methodology, as proposed by Webster and Watson (2002), this study integrates theoretical and empirical perspectives to offer a comprehensive examination of regional e-commerce engagement. The findings contribute to both national and international discussions on digital transformation by elucidating the underlying socioeconomic and infrastructural determinants that shape e-commerce adoption in developing urban areas.

Furthermore, the study enhances existing literature by presenting an analytical framework that explores the intersection of digital consumer behavior and regional inequalities. By emphasizing localized e-commerce participation trends and their implications for digital policy interventions, this research enriches the academic discourse on technological accessibility, market development, and digital gender equity. The insights derived from this analysis hold significant implications not only for academic scholarships but also for business practitioners, governmental organizations, and digital commerce policymakers seeking to design region-specific strategies that foster inclusive digital market participation.

3. STRATEGIC IMPORTANCE OF AGE AND GENDER DATA IN THE E-COMMERCE ECOSYSTEM

Age and gender are fundamental demographic factors shaping consumer behavior and market strategies in the e-commerce ecosystem (Bryman, 2016). Understanding these variables enables businesses, policymakers, and researchers to develop targeted strategies that enhance digital commerce accessibility and engagement. This study, conducted in the context of Diyarbakir, provides insights into how these demographic factors influence online shopping behaviors and how local patterns compare with national and global trends.

3.1. Implications for Businesses and Investors

For e-commerce companies, age and gender play a crucial role in shaping consumer preferences and purchasing behavior (Kotler & Keller, 2016). Younger consumers tend to favor technology-oriented products and social media-driven marketing, whereas gender differences influence category preferences, such as fashion and personal care products being more appealing to female consumers. Understanding these dynamics allows businesses to develop personalized marketing strategies, optimize product segmentation, and implement region-specific promotional campaigns (Grewal et al., 2017).

From an investment perspective, demographic insights are essential for assessing market potential (Taherdoost, 2016). The high proportion of young consumers in Diyarbakir suggests a promising market for mobile applications and digital services. Moreover, analyzing female participation in e-commerce is particularly valuable for industries like fashion, cosmetics, and textiles, where gender-driven demand dynamics influence investment decisions.

3.2. Relevance for Marketing and Public Policy

Marketing agencies utilize demographic segmentation to craft targeted advertisements and promotional strategies (Kotler & Armstrong, 2017). In young consumer-dominated regions like Diyarbakir, digital marketing through social media and influencer partnerships is more effective, whereas traditional advertising may be preferable for older demographics.

Public institutions play a critical role in fostering inclusive digital commerce by addressing gender-based digital literacy gaps and promoting entrepreneurship programs for women (UN Women, 2022a). Policies supporting technological education, microcredit schemes, and digital infrastructure development can enhance participation rates, creating a more balanced and inclusive e-commerce landscape.

3.3. Contributions to Academic Research and Competitive Analysis

Academically, studying the interplay between demographic factors and e-commerce behavior provides valuable insights into the digital economy (Van Dijk, 2020). Comparative analyses between Diyarbakir and global patterns allow researchers to identify regional adaptations and structural barriers influencing online shopping habits.

For businesses, competitive analysis based on age and gender segmentation enables firms to refine their market positioning. Identifying underrepresented consumer segments, optimizing localized product offerings, and balancing global and regional market strategies contribute to sustainable competitive advantages.

3.4. Strategic Insights for Logistics and e-Commerce Platforms

The logistics sector benefits from demographic data by optimizing last-mile delivery strategies and inventory management (PwC, 2020). Higher demand for rapid delivery among younger consumers necessitates efficient fulfillment networks, while gender-based purchasing trends influence inventory planning for categories such as electronics, fashion, and personal care.

Large-scale e-commerce platforms rely on demographic monitoring to balance global expansion with local market adaptation. By aligning product diversification with regional consumer needs, companies enhance engagement, strengthen customer loyalty, and achieve higher profitability.

4. DATA AND METHODOLOGY

4.1. Research Design and Methodology

This study was designed as a cross-sectional field study, employing a quantitative research methodology to analyze e-commerce participation in Diyarbakir. Data was collected through a structured survey administered via Google Forms, with responses recorded digitally to ensure systematic data management and reliability. The survey was conducted in person, with participants submitting their answers directly through the online platform under research supervision. The adoption of a quantitative approach was justified by its capacity to quantify e-commerce adoption rates, assess demographic patterns, and evaluate consumer behavior using measurable indicators (Bryman, 2016).

To test the hypotheses formulated for this study, the Chi-Square (χ^2) Goodness-of-Fit Test, a non-parametric statistical method, was employed to determine whether the distribution of e-commerce users in Diyarbakir significantly differed from

national (Türkiye) and global datasets. Cramér's V effect size analysis was also applied to assess the practical significance of observed differences.

4.2. Population and Sampling Procedure

The target population consisted of individuals aged 18 and above residing within Diyarbakir's provincial borders. According to the Turkish Statistical Institute (TÜİK, 2024a), the total population of Diyarbakir is 1,818,133. Given the large population size, the widely recognized Cochran (1952) formula was utilized to determine the minimum required sample size, ensuring statistical representativeness at a 95% confidence level with a $\pm 5\%$ margin of error.

$$n = \frac{z^2 * p * (1 - p)}{E^2}$$

where:

$z = 1.96$ (corresponding to a 95% confidence level)

$p = 0.5$ (maximum variance assumption when the exact proportion is unknown)

$E = \pm 5\%$ (acceptable margin of error)

Based on this calculation, the minimum required sample size was determined as 384 respondents. However, through face-to-face survey administration, a final sample of 675 participants was successfully reached, exceeding the minimum statistical threshold and enhancing the study's statistical power and external validity.

The demographic structure of the sample was carefully designed to closely reflect Diyarbakir's actual population composition. The gender distribution within the sample was 51.1% male and 48.9% female, aligning closely with official statistics reported by TÜİK (50.55% male, 49.45% female) (Turkish Statistical Institute [TÜİK], 2024a; Hizmetix, 2024). Similarly, efforts were made to ensure that the age distribution of respondents adequately represented the broader population, thereby reinforcing the generalizability of the findings.

4.3. Data Collection Process and Survey Instrument

Data collection was conducted over a 60-day period across multiple locations in Diyarbakir. The survey was conducted in person to ensure participant engagement and clarity in responses. The self-reporting nature of the survey facilitated a 100% response rate, which was achieved through clear instructions provided to participants and the interactive nature of face-to-face administration. To further ensure data integrity, participants were instructed to complete all required fields, thus minimizing missing values and enhancing dataset completeness (Bryman, 2016).

The survey instrument was structured to systematically examine e-commerce adoption patterns, with specific emphasis on demographic factors such as age and gender. The questionnaire comprised two main sections:

- a. **Demographic Characteristics:** This section focused on gender and age distribution, aiming to analyze the sociodemographic composition of e-commerce users in Diyarbakir.
- b. **Online Shopping Behavior:** This section categorized respondents based on their engagement with e-commerce platforms, preferred product categories, and purchasing habits, enabling a comparative evaluation of generational differences.

To assess the statistical significance of demographic trends, detailed frequency and cross-tabulation analyses were performed, with particular emphasis on gender- and age-related variations. The Chi-Square (χ^2) test was applied to evaluate whether the observed distributions in Diyarbakir significantly deviated from national and global e-commerce participation patterns.

4.4. Data Analysis Techniques

The collected data were analyzed using SPSS (Statistical Package for the Social Sciences) version 30.0.0, following a structured sequence of analytical procedures to ensure accuracy and methodological rigor.

Initially, the dataset was examined for inconsistencies and data entry errors through a comprehensive data-cleaning process. Although a 100% response rate was achieved, additional verification measures were implemented to minimize potential inaccuracies (Field, 2018).

To describe the key characteristics of the sample, descriptive statistical measures, including means, standard deviations, and percentage distributions, were calculated to illustrate participants' demographic attributes and e-commerce engagement levels.

To test the study's hypotheses, the Chi-Square (χ^2) Goodness-of-Fit Test was conducted, evaluating whether the gender and age distributions observed in Diyarbakir exhibited statistically significant differences from those at the national and global

levels (Cochran, 1952; Field, 2018). Additionally, Cramér's V effect size analysis was applied to assess the practical implications of the observed statistical variations (Cohen, 1988).

4.5. Reliability and Validity Considerations

The reliability and validity of this study were reinforced by multiple methodological safeguards. The sample size ($n = 675$), face-to-face survey administration, and 100% response rate collectively contributed to minimizing sampling errors and data incompleteness.

The internal validity of the study was supported by the alignment between the sample's demographic characteristics and Diyarbakir's official population data. Similarly, the external validity was strengthened by ensuring that the age and gender proportions of the sample mirrored broader demographic trends (TÜİK, 2024a).

While the study is geographically focused on Diyarbakir, its findings offer valuable insights that can be applied to cities exhibiting similar demographic and economic characteristics. The research design enables comparative analysis with other developing regions, thereby enhancing the generalizability of key findings beyond Diyarbakir.

4.6. Ethical Compliance and Data Protection Measures

The research process adhered to strict ethical guidelines to ensure participant rights and data confidentiality. The survey was conducted on a voluntary basis, with all participants fully informed about the study's objectives, data usage policies, and privacy safeguards. Participants were explicitly assured that all collected data would be used solely for academic purposes.

Furthermore, informed consent was obtained from each participant before survey administration. The study complied with personal data protection regulations, as stipulated by the Personal Data Protection Authority (KVKK, 2023), ensuring adherence to ethical research standards and participant confidentiality protections.

5. FINDINGS AND DISCUSSIONS

This section presents a comparative analysis of the demographic distribution of e-commerce users in Diyarbakir, focusing on gender and age-based differences. The findings are interpreted within a broader national and global framework to assess regional disparities and their implications for digital commerce participation.

5.1. Gender Distribution and Comparative Analysis

Among the 675 respondents surveyed in Diyarbakir, 51.1% were male and 48.9% were female. A comparison with national e-commerce participation rates in Türkiye indicates that 52.4% of men and 46.6% of women engage in online shopping. These figures suggest that the gender gap in e-commerce participation is narrower in Diyarbakir compared to the national average. The relatively higher proportion of female users in Diyarbakir may indicate improved digital inclusivity and a more balanced gender representation in the region's e-commerce landscape.

Table 1 presents a comparative overview of gender-based internet and e-commerce usage in Diyarbakir, Türkiye, and globally.

Table 1: Gender and Internet Usage Rates in Diyarbakir, Türkiye, and Globally

Data Set	Age Range	Male (%)	Female (%)	Key Findings
e-Commerce Usage in Diyarbakir by Gender	Genel	51,1	48,9	The proportion of female users in Diyarbakir is higher than the national average.
Internet Usage in Türkiye by Gender	16–74	92,2	85,4	Women's access to digital platforms remains lower compared to men.
e-Commerce Participation in Türkiye by Gender	16–74	52,4	46,6	Male participation in e-commerce surpasses that of females.
Global Online Shopping Habits	16–64	-	-	Online product searches: 80%, Online store visits: 90%.

References: Diyarbakir data are derived from a survey conducted on a sample of $n = 675$; internet usage data in Türkiye are sourced from Hizmetix (2024); e-commerce participation data in Türkiye are obtained from MatOnline (2025); global online shopping habits are based on We Are Social & Hootsuite (2020).

The statistical significance of these differences was examined through a Chi-Square (χ^2) test, which yielded a χ^2 value of 0.94, $df = 1$, $p \approx 0.33$ ($p > 0.05$). These results indicate that the gender distribution of e-commerce users in Diyarbakir does not

differ significantly from the national trend. Furthermore, the Cramér's V value of 0.037 suggests that any observed variation is negligible in practical terms.

These findings demonstrate that female users in Diyarbakir participate in e-commerce at rates comparable to national levels, reinforcing the idea that digital gender inclusivity is gradually improving in the region. Given this balanced distribution, policymakers and digital commerce stakeholders should further promote initiatives that support women's entrepreneurship and digital literacy programs to sustain this positive trajectory.

5.2. Age Distribution and Comparative Analysis

The age distribution of e-commerce users in Diyarbakir reveals a distinctive pattern compared to national and global data. The majority of participants belong to the 18–24 age group, constituting 53.3% of total users, whereas the same cohort accounts for only 19% of global e-commerce users. In contrast, national e-commerce participation trends indicate that the 25–36 age group represents the dominant segment, whereas Diyarbakir exhibits a youth-centric adoption pattern.

Table 2 presents a comparative analysis of age-based e-commerce participation across Diyarbakir, Türkiye, and global benchmarks.

Table 2: Age Range Distribution in Diyarbakir, Türkiye, and Globally

Age Range	Diyarbakir (Percentage)	Türkiye (Overall)	Global (Percentage)
18-24	53.3	–	19
25-34	27.7	The 25-36 age range accounted for more than half of the total e-commerce volume.	33
35-44	9,9		20
45-54	7,7	–	13
55-64	1,3	–	8
65 and over	–	–	4,2
Additional Insights	–	Consumers aged 29 recorded the highest spending volume .	–

Note: In the Diyarbakir dataset, the "55 and over" category is grouped as 1.3%.

References: Diyarbakir data are derived from a survey conducted on a sample of $n = 675$; national data are sourced from the Republic of Türkiye Ministry of Trade (2024); global data are obtained from Statista (2024b).

The statistical significance of this divergence was tested using a Chi-Square (χ^2) test, yielding a value of $\chi^2 \approx 534.86$, $df = 4$, $p < 0.001$, indicating a highly significant difference. Additionally, Cramér's V value of 0.445 suggests a moderate-to-large effect size.

These findings confirm that e-commerce participation in Diyarbakir is heavily concentrated within the younger demographic. While this trend reflects the increasing digital adoption among Generation Z, it also highlights the limited participation of individuals aged 45 and above, who constitute only 9% of the total e-commerce user base. This discrepancy underscores the presence of a digital divide, which may stem from factors such as technological literacy barriers, access limitations, and generational preferences for traditional shopping methods.

5.3. Implications and Strategic Considerations

The findings from this study reveal significant insights into e-commerce adoption patterns in Diyarbakir, particularly concerning gender and age-based differences. While the gender gap in e-commerce participation appears to be narrowing, digital disparities among different age groups remain prominent.

To enhance digital inclusivity and increase e-commerce engagement among underrepresented demographics, several strategic actions should be considered:

- **Targeted Digital Literacy Programs:** The low representation of older age groups in e-commerce suggests a need for educational initiatives aimed at improving technological proficiency and digital confidence among middle-aged and senior consumers.

- **Youth-Oriented Digital Commerce Strategies:** Given the high proportion of young consumers in Diyarbakir, e-commerce businesses should prioritize social media-driven marketing campaigns, influencer collaborations, and mobile-friendly interfaces to cater to this demographic.
- **Gender-Specific Digital Support Policies:** The relatively high proportion of female e-commerce users in Diyarbakir presents an opportunity to further empower women through entrepreneurship programs, financial inclusion policies, and female-focused digital marketing strategies.
- **Bridging the Regional Digital Divide:** The substantial difference between Diyarbakir's e-commerce user demographics and global patterns indicates the need for localized policy interventions to ensure a more balanced and inclusive digital transformation in developing regions.

These insights provide a foundation for future research on digital commerce adoption, particularly in regions exhibiting socioeconomic and infrastructural disparities. Subsequent studies could explore psychological and behavioral motivations influencing consumer participation, as well as the role of emerging digital payment systems and logistics infrastructure in shaping e-commerce engagement across diverse demographics.

6. CONCLUSION AND IMPLICATIONS

This study examined the strategic significance of age and gender variables within the e-commerce ecosystem, focusing on Diyarbakir and contextualizing its findings within national and global trends. The increasing importance of e-commerce in the digital economy and its transformative effects on consumer behavior necessitate a deeper understanding of demographic factors (Kotler & Keller, 2016; Republic of Türkiye Ministry of Trade, 2024a).

By conducting a comparative analysis between regional, national, and global datasets, this research provided empirical insights into how demographic characteristics influence e-commerce adoption. Additionally, it offered strategic recommendations for policymakers, businesses, and academia, contributing to both theoretical and practical discussions on digital market inclusivity.

6.1. Key Findings

A comprehensive review of the literature confirmed that e-commerce is continuously expanding its share in global trade, with digitalization playing a pivotal role in shaping consumer behavior (Statista, 2023; UNCTAD, 2023). However, significant variations persist in adoption rates based on age, gender, and regional digital infrastructure.

The findings of this study indicate that younger individuals (18–34 years old) are the dominant participants in e-commerce, whereas digital engagement among older adults (45 and above) remains limited due to factors such as technological literacy barriers and access limitations (Prensky, 2001; Van Deursen & Van Dijk, 2019). Gender-based disparities also persist, particularly in developing regions, where women face structural challenges in accessing digital platforms (UN Women, 2022a). Nevertheless, in certain sectors, female consumers have reached or even surpassed male users, highlighting the evolving nature of digital commerce (Kotler & Keller, 2016).

The empirical analysis conducted in Diyarbakir revealed notable similarities and differences with national and global patterns. The gender distribution of e-commerce users in Diyarbakir closely aligns with national averages, suggesting a positive outlook for digital gender equality in the region. However, significant discrepancies emerged in age-based participation, with 53.3% of Diyarbakir's e-commerce users belonging to the 18–24 age group, a rate substantially higher than the global average of 19%. This reflects the increasing role of young consumers in driving digital commerce in emerging regions. The statistical tests confirmed that these differences were highly significant ($p < 0.001$), reinforcing the need for targeted policy interventions to address generational gaps in e-commerce participation.

6.2. Strategic Implications

The results of this study provide valuable insights for multiple stakeholders, including businesses, investors, policymakers, and academic researchers. Understanding demographic influences on digital commerce can inform policy design, market strategies, and consumer engagement initiatives, particularly in regions with evolving digital landscapes.

For e-commerce businesses, considering age and gender differences is essential for developing personalized marketing campaigns and optimizing product recommendations based on consumer preferences (Güler Binkanat & Duygun, 2023). In regions like Diyarbakir, where young consumers dominate the e-commerce landscape, companies should prioritize social media-driven marketing, influencer collaborations, and mobile application-based commerce strategies to maximize user engagement. Furthermore, adapting marketing approaches to regional cultural norms and consumer habits can enhance customer loyalty and drive sustained growth.

For investors, regions with a predominantly young population present high-growth opportunities for mobile-based digital ventures. Additionally, supporting women's entrepreneurship in e-commerce-related sectors, such as fashion, cosmetics, and healthcare, can contribute to both financial returns and gender equality in the digital economy. The rapid expansion of digital commerce in developing urban centers like Diyarbakir also creates new investment opportunities in logistics, warehouse management, and local product commercialization, strengthening the regional entrepreneurial ecosystem.

For marketing agencies, tailoring age- and gender-specific digital campaigns will enhance engagement, particularly through platforms popular among younger users, such as Instagram and TikTok (Kotler & Keller, 2016). Advertising strategies that incorporate local cultural elements and linguistic nuances can foster stronger emotional connections with consumers, ultimately enhancing brand recognition and customer retention.

For academic researchers, this study highlights the need for further investigation into regional e-commerce dynamics, particularly in underrepresented areas like Eastern and Southeastern Anatolia. Understanding the sociocultural and infrastructural determinants of e-commerce adoption is crucial for developing more inclusive digital policies. Additionally, qualitative and quantitative research on gender-based digital participation could provide deeper insights into the structural barriers limiting women's access to e-commerce (UN Women, 2022b).

For public institutions, implementing digital literacy programs tailored for older adults and women could help mitigate disparities in e-commerce participation (Van Deursen & Van Dijk, 2019). Expanding internet accessibility and digital infrastructure in emerging urban centers like Diyarbakir would also create a sustainable foundation for e-commerce growth. Microcredit schemes, grants, and entrepreneurial training programs targeting women could further enhance gender inclusivity in the digital economy.

For logistics and educational institutions, improving last-mile delivery networks and fast shipping options is essential for meeting consumer expectations, particularly among young users accustomed to instant gratification (PwC, 2020). Universities and vocational schools should integrate e-commerce, digital marketing, and logistics education into their curricula to equip future professionals with the necessary skills to thrive in a rapidly evolving digital economy.

6.3. Limitations and Future Research Directions

Despite its contributions, this study presents several methodological limitations. The research primarily focused on age and gender variables, without extensively considering socioeconomic status, occupational background, and internet accessibility, which could further enrich the understanding of regional digital commerce. Additionally, the classification of participants aged 55 and above into a single category may have oversimplified the complexity of digital adaptation among older populations. Future studies should consider more granular age segmentation to assess behavioral differences across senior users.

Furthermore, methodological differences between global and regional datasets could introduce comparability biases when interpreting statistical trends. Employing advanced statistical techniques, such as regression models or Structural Equation Modeling (SEM), could enhance the depth of future research.

Potential areas for future studies include longitudinal research on digital adaptation trends, the impact of emerging payment technologies, and the role of AI-driven recommendation systems in shaping e-commerce behavior. Additionally, comparative analyses across different cities in Türkiye and similar urban centers globally could provide broader insights into the regional determinants of e-commerce participation.

6.4. Concluding Remarks

This study contributes to the growing body of literature on digital commerce adoption by offering an empirical examination of demographic influences on e-commerce participation in a developing region. The findings underscore the pivotal role of young consumers in driving digital market expansion, while also highlighting persistent generational and gender-related disparities. The insights derived from this research provide practical recommendations for businesses, policymakers, and academics, facilitating more inclusive and effective strategies for e-commerce development in emerging economies.

6.5. Overall Evaluation

This research has made multidimensional contributions to both academic literature and practical stakeholders by highlighting the strategic importance of age and gender variables within the e-commerce ecosystem, particularly in the context of Diyarbakir. The findings indicate that Diyarbakir exhibits a distinctive user profile, partially diverging from national and global trends due to its young population-driven e-commerce engagement and relatively balanced gender distribution. This outcome underscores the critical role of localized e-commerce and digital marketing strategies, emphasizing the necessity of integrating demographic insights into business models and policy frameworks to enhance consumer engagement and regional economic development.

However, this study is not without its methodological limitations. To enhance the robustness and generalizability of findings, future research should incorporate larger samples, employ advanced statistical techniques, and utilize longitudinal data analysis. Such methodological advancements would allow for a more precise examination of digital divide and digital gender divide dynamics in regions like Diyarbakir, while also providing a strong empirical foundation for policy development and industry applications.

Ultimately, academic research on e-commerce and digital transformation serves as a crucial bridge between local realities and global trends, fostering the development of a sustainable, inclusive, and competitive digital economy. This study, specifically conducted in Diyarbakir, has the potential to act as a reference point for future investigations, particularly in the context of emerging economies and regional digitalization processes. Accordingly, it is expected that subsequent studies will generate more comprehensive and in-depth insights into the demographic dimensions of e-commerce, thereby contributing substantially to both the academic field and the strategic advancements of the digital commerce industry.

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APPENDICES: The State of e-Commerce in Diyarbakir: A Study on User Behavior, Preferences, and Challenges

APPENDIX 1: Survey Questions

1. What is your gender?

- a. Male
- b. Female

2. What is your age group?

- a. 18–24
- b. 25–34
- c. 35–44
- d. 45–54
- e. 55 and above

3. What is your level of education?

- a. Primary education
- b. Secondary education
- c. Higher education (undergraduate degree)
- d. Master's degree
- e. Doctoral degree

4. What is your occupation?

- a. Entrepreneur/Business Owner
- b. Homemaker
- c. Freelancer
- d. Academician
- e. Healthcare Professional (Doctor, Pharmacist, Nurse, etc.)
- f. Education Sector Employee (Teacher, Educational Consultant, etc.)
- g. University Student
- h. Secondary Education Student
- i. Technician
- j. Engineer
- k. Engaged in Agriculture and Animal Husbandry
- l. Public/Civil Servant
- m. Private Sector Employee
- n. Unemployed Retiree
- o. Employed Retiree
- p. Job Seeker/Currently Unemployed
- q. Other...

5. What is your average monthly income?

- a. Below 2,000 ₺
- b. 2,000–5,000 ₺
- c. 5,000–10,000 ₺
- d. 10,000–20,000 ₺
- e. Above 20,000 ₺
- f. I do not have a personal income; I rely on family or external financial support

6. How frequently do you use e-commerce platforms?

- a. Daily
- b. Several times a week
- c. Several times a month
- d. Rarely
- e. Never

7. What types of products do you typically purchase from e-commerce platforms?

- a. Clothing and accessories
- b. Electronic devices
- c. Food and grocery shopping
- d. Books and stationery
- e. Healthcare and personal care products

8. Which payment method do you prefer for e-commerce transactions?

- a. Credit card
- b. Debit card
- c. Bank transfer/EFT
- d. Cash on delivery
- e. Digital wallet

9. Which e-commerce platforms do you use most frequently?

- a. Local e-commerce platforms
- b. National e-commerce platforms
- c. International e-commerce platforms

10. Which device do you primarily use for online shopping?

- a. Desktop computer
- b. Laptop
- c. Tablet
- d. Smartphone

11. How satisfied are you with finding the products you seek on e-commerce platforms?

- a. Very satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Very dissatisfied

12. Are you satisfied with the delivery process of purchased products?

- a. Very satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Very dissatisfied

13. Have you ever encountered technical issues while using e-commerce platforms?

- a. Yes
- b. No

14. Have you ever contacted customer service for assistance on an e-commerce platform?

- a. Yes
- b. No

15. How satisfied are you with the customer service experience provided by e-commerce platforms?

- a. Very satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Very dissatisfied

16. Do you have security concerns regarding e-commerce platforms?

- a. Yes
- b. No

17. Do you take advantage of discounts and promotional campaigns on e-commerce platforms?

- a. Yes
- b. No

18. How would you rate the ease of use of e-commerce platforms?

- a. Very easy
- b. Easy
- c. Neutral
- d. Difficult
- e. Very difficult

19. What improvements do you think are necessary for the advancement of e-commerce in Diyarbakir?

- a. Faster delivery options
- b. Greater availability of local sellers and product diversity
- c. More secure payment methods
- d. Improvement in customer service
- e. More user-friendly websites and mobile applications
- f. Other