

## DIGITAL LITERACY IMPACT ON PERCEIVED USEFULNESS, PERCEIVED EASE OF USE AND ONLINE PURCHASE INTENTION IN PAKISTAN

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### ABSTRACT

*This study investigates the impact of digital literacy on perceived usefulness, perceived ease of use, and online purchase intention in Pakistan. With the rapid expansion of e-commerce in the country, digital literacy has become an essential factor influencing consumer behavior in the online shopping environment. The research uses a quantitative approach, collecting data from 500 respondents across urban and semi-urban areas of Pakistan. A structured questionnaire was designed to measure the variables: digital literacy, perceived usefulness, perceived ease of use, and online purchase intention. The data analysis, conducted using Structural Equation Modeling (SEM), reveals that digital literacy has a significant positive effect on both perceived usefulness and perceived ease of use of e-commerce platforms. In turn, these perceptions significantly influence online purchase intention. The findings suggest that enhancing digital literacy among consumers can lead to increased engagement with e-commerce platforms, making them more accessible and user-friendly. This research contributes to the understanding of how digital literacy shapes online shopping behavior in Pakistan, offering valuable insights for e-commerce businesses and policymakers aiming to promote digital inclusion and optimize user experiences.*

**Keywords:** Digital literacy, quantitative approach, consumer behavior, purchase intention

### INTRODUCTION

The growth of e-commerce has revolutionized the way consumers interact with businesses globally. In Pakistan, the digital landscape has evolved rapidly, especially in urban areas, with more consumers embracing online shopping due to increased internet penetration and mobile device usage. However, despite these advancements, digital literacy remains a significant barrier to broader e-commerce adoption, particularly among individuals with lower levels of technological

knowledge and in rural areas where access to the internet is more limited.

Digital literacy, defined as the ability to access, manage, understand, and create information using a range of digital tools, is a critical skill influencing how consumers engage with digital platforms. In the context of e-commerce, digital literacy affects consumers' perceptions of the online shopping process, shaping their attitudes toward the platform's usefulness, ease of use, and

ultimately, their intention to make purchases. This paper investigates how digital literacy impacts three core components of online shopping behavior—perceived usefulness (PU), perceived ease of use (PEOU), and online purchase intention (OPI)—in Pakistan, a country characterized by diverse internet usage patterns and a significant digital divide between urban and rural populations.

### Research Questions:

1. How does digital literacy influence perceived usefulness in online shopping platforms in Pakistan?
2. How does digital literacy affect perceived ease of use of e-commerce platforms?
3. What is the impact of digital literacy on online purchase intention among Pakistani consumers?

### Background:

Pakistan, with a population exceeding 240 million, has witnessed a significant increase in internet users, reaching 70 million in 2023, and the rise of e-commerce in the last decade has created an environment for digital innovation. However, the challenge remains in addressing the digital divide. Rural areas, where educational opportunities and access to digital infrastructure are limited, lag urban areas in terms of digital literacy (Pakistan Telecommunication Authority, 2023). This digital divide impacts online shopping behaviors, which remain concentrated in more digitally literate populations. This study explores the role of digital literacy in shaping consumer behavior toward online shopping, emphasizing the need for e-commerce platforms to cater to a diverse user base.

Pakistan, a country of over 240 million people, is one of the largest emerging markets for e-commerce in South Asia. However, its e-commerce landscape faces several challenges, including low levels of digital literacy, limited access to the internet in rural regions, and a lack of trust in online payment systems. As of 2023, internet penetration in Pakistan stands at about 70 million users (Pakistan Telecommunication Authority, 2023), with most of these users concentrated in urban areas. The digital divide between urban and rural populations creates

significant barriers for broader e-commerce adoption.

The urban-rural divide in digital literacy and access to technology poses a challenge for e-commerce businesses that aim to reach a wider audience. Urban consumers are more likely to engage with e-commerce platforms due to better internet access, higher levels of digital literacy, and greater exposure to technology. In contrast, rural consumers often lack the digital skills necessary to navigate online shopping platforms, which results in lower engagement with e-commerce. As Pakistan's e-commerce industry matures, it is essential to identify the factors that influence online shopping behavior and design interventions that can bridge the digital divide.

Digital literacy not only affects the functional aspects of using digital platforms, such as navigating websites or completing online transactions, but also influences individuals' attitudes toward e-commerce. Consumers with higher digital literacy are more likely to perceive online shopping as useful and easy to use, leading to a higher likelihood of making online purchases. On the other hand, individuals with lower levels of digital literacy may face challenges in evaluating product information, understanding online payment systems, and recognizing the benefits of e-commerce, which can reduce their intention to make purchases.

Therefore, it is imperative to explore the relationship between digital literacy and e-commerce adoption in Pakistan. This study seeks to fill this gap by examining how digital literacy impacts the perceived usefulness and ease of use of e-commerce platforms, and how these perceptions, in turn, affect online purchase intentions. This research will provide valuable insights for e-commerce platforms, policymakers, and educational institutions, offering strategies to enhance digital literacy and facilitate the growth of e-commerce in Pakistan.

### Significance of the Study:

This study holds significant importance for e-commerce businesses and policymakers in Pakistan, especially in the context of digital inclusion. As the country experiences rapid growth in internet usage, it is crucial to ensure

that all segments of the population can participate in the digital economy. By understanding the impact of digital literacy on online shopping behaviors, businesses can design more inclusive platforms that cater to users with varying levels of digital skills. Additionally, the findings can inform government initiatives aimed at improving digital literacy, which will, in turn, contribute to a more inclusive and sustainable digital economy in Pakistan.

## 2. Literature Review

The literature review aims to explore the link between digital literacy, perceived usefulness, perceived ease of use, and online purchase intention in the context of e-commerce. The discussion centers around theories such as the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT), which explain how users adopt technology and make decisions regarding its use.

### 2.1. Digital Literacy and E-commerce

Digital literacy is increasingly recognized as a crucial factor in determining the success of technology adoption, particularly in e-commerce (Ng, 2012). It enables consumers to evaluate product information, compare prices, use online payment methods, and navigate complex digital platforms. In Pakistan, where internet usage and online shopping have been growing, digital literacy plays a vital role in overcoming barriers to entry for online shopping (Alvi, 2021). Digital literacy is not only about technical skills but also about understanding how to find and evaluate information, making it a vital skill in the online shopping process.

A lack of digital literacy among Pakistani consumers, especially in rural areas, can limit their engagement with e-commerce. According to the Pakistan Telecommunication Authority (2023), internet usage is concentrated in urban areas, leaving a large proportion of the population with limited access to the skills needed to navigate online platforms effectively. These barriers can hinder the perceived usefulness of e-commerce platforms, as consumers struggle to derive value from online shopping.

### 2.2. Perceived Usefulness and Digital Literacy

Perceived Usefulness (PU), a core concept of the Technology Acceptance Model (TAM), refers to the extent to which a person believes that using a particular technology will improve their performance or provide benefits. In the e-commerce context, perceived usefulness can manifest in various ways, such as convenience, timesaving, cost-effectiveness, or access to a wider range of products.

Research has shown that digital literacy positively influences perceived usefulness (Venkatesh & Bala, 2008). Consumers with higher levels of digital literacy are more likely to recognize the advantages of online shopping, including its convenience and efficiency. In Pakistan, where many consumers are becoming more accustomed to the internet and digital tools, it is essential to understand how digital literacy influences their views on the usefulness of e-commerce platforms. Consumers who can navigate e-commerce websites with ease are more likely to appreciate the benefits they offer.

Studies by Liu et al. (2021) have demonstrated that individuals with higher digital literacy have a stronger perception of the usefulness of online platforms. These individuals tend to evaluate websites more critically, recognize product benefits, and utilize features like product reviews, which enhances their shopping experience. Therefore, digital literacy has a crucial role in shaping perceptions of online shopping's utility.

### 2.3. Perceived Ease of Use and Digital Literacy

Perceived Ease of Use (PEOU) refers to the degree to which a person believes that using a particular system will be free of effort (Davis, 1989). It is a key determinant of technology adoption, influencing users' willingness to engage with a system. In the context of e-commerce, PEOU is related to how easily consumers can navigate websites, understand product descriptions, and complete transactions.

Digital literacy is directly linked to perceived ease of use. Research suggests that individuals with higher digital literacy are better able to navigate websites and overcome technological barriers

(Teo, 2017). In Pakistan, where many consumers are still adapting to online shopping platforms, digital literacy can significantly impact their ease of use. Consumers who are familiar with digital tools and internet-based transactions are likely to find online shopping platforms more intuitive and easier to use, leading to higher levels of PEOU.

#### 2.4. Online Purchase Intention and Digital Literacy

Online Purchase Intention (OPI) refers to the likelihood that a consumer will make a purchase from an online platform. Previous research has shown that both perceived usefulness and perceived ease of use influence OPI, as they shape users' attitudes toward technology adoption (Davis, 1989). Digital literacy impacts OPI by enhancing consumers' confidence in navigating e-commerce platforms and making informed purchase decisions.

A study by Arshad et al. (2022) found that digital literacy positively influences online purchase intention in Pakistan. Consumers who are digitally literate are more likely to engage with e-commerce platforms, as they perceive them to be useful and easy to use. Digital literacy enables users to understand product features, read reviews, and make secure payments, thereby increasing their purchase intention (Cheung & Lee, 2012).

#### 2.5. Technology Acceptance Model (TAM) and Digital Literacy

The Technology Acceptance Model (TAM), developed by Davis (1989), is widely used to study technology adoption behaviors. TAM posits that perceived ease of use and perceived usefulness are the two primary factors influencing technology adoption. In the case of e-commerce, these perceptions are critical in shaping online purchase intention. Research indicates that digital literacy plays a significant role in both perceived ease of use and perceived usefulness, influencing consumer attitudes and behaviors toward online shopping (Venkatesh & Bala, 2008).

TAM has been successfully applied in various e-commerce studies (Teo, 2017), showing that individuals with higher digital literacy levels are more likely to find online platforms useful and easy to use, leading to an increase in their online

purchase intention. This study seeks to explore these relationships in the context of Pakistan, where digital literacy levels vary across different demographic groups.

### 3. Methodology

This research employs a quantitative approach to test the relationships between digital literacy, perceived usefulness, perceived ease of use, and online purchase intention. A structured questionnaire was designed to collect data from 500 respondents who have made at least one online purchase in the past six months. Respondents were selected through stratified random sampling to ensure representation from diverse demographic groups, including age, education, and geographic location.

#### Variables Measured:

**Digital Literacy:** Measured by the ability to navigate the internet, evaluate online content, and use digital tools effectively.

**Perceived Usefulness (PU):** Measured by the extent to which respondents believe online shopping enhances their purchasing experience.

**Perceived Ease of Use (PEOU):** Measured by the ease with which respondents navigate e-commerce platforms.

**Online Purchase Intention (OPI):** Measured by the likelihood of making purchases from online platforms in the future.

**Data Analysis:** Data were analyzed using Structural Equation Modeling (SEM) to test the relationships between the variables. SEM is suitable for analyzing complex relationships between multiple variables and allows for a deeper understanding of how digital literacy influences e-commerce behaviors.

### 4. Results

The SEM analysis revealed several key findings: **Digital Literacy and Perceived Usefulness:** The results indicate a strong positive relationship between digital literacy and perceived usefulness ( $\beta = 0.68, p < 0.01$ ). Consumers with higher digital literacy levels were more likely to perceive online shopping as useful. This finding supports the idea that digital skills enable consumers to recognize the benefits of e-commerce, such as

convenience, access to information, and product variety.

**Digital Literacy and Perceived Ease of Use:** Digital literacy was also found to have a significant positive effect on perceived ease of use ( $\beta = 0.72, p < 0.01$ ). Those with higher digital literacy levels found e-commerce platforms easier to use, as they were more comfortable navigating online interfaces and completing transactions.

**Perceived Usefulness and Online Purchase Intention:** The perceived usefulness of e-commerce platforms positively influenced online purchase intention ( $\beta = 0.56, p < 0.01$ ). Consumers who believed online shopping offered significant benefits were more likely to make future online purchases.

**Perceived Ease of Use and Online Purchase Intention:** Similarly, perceived ease of use was positively correlated with online purchase intention ( $\beta = 0.61, p < 0.01$ ). Consumers who found online shopping platforms easy to use were more likely to intend to purchase online in the future.

These results suggest that digital literacy plays a crucial role in shaping both perceived usefulness and perceived ease of use, which in turn influences online purchase intention. The findings also highlight the need for e-commerce platforms in Pakistan to cater to users with varying levels of digital literacy by designing intuitive and accessible interfaces.

The data collected from 500 respondents in Pakistan were analyzed using Structural Equation Modeling (SEM) to test the relationships between digital literacy, perceived usefulness (PU), perceived ease of use (PEOU), and online purchase intention (OPI). The SEM approach was selected because it allows for testing complex relationships between multiple variables and provides a robust analysis of both direct and indirect effects. The following sections present the key findings from the analysis, including direct and indirect effects among the variables and how digital literacy influences e-commerce behaviors in Pakistan.

#### 4.1. Demographic Profile of Respondents

The sample consisted of 500 respondents, with a balanced representation of both male (53%) and

female (47%) participants. The age distribution showed that the majority (60%) were between the ages of 18 to 35, while 30% were between 36 to 50, and the remaining 10% were above 50. The respondents were from various regions of Pakistan, with 60% residing in urban areas (e.g., Karachi, Lahore, Islamabad) and 40% from semi-urban and rural areas. Educationally, 45% of the respondents had a bachelor's degree, 25% had completed higher secondary education, and 30% had completed their matriculation. Respondents were divided into three groups based on their self-reported levels of digital literacy: high, moderate, and low.

#### 4.2. Descriptive Statistics

The key variables were measured using a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree." Descriptive statistics for the variables included:

Digital Literacy: Mean = 3.80, SD = 0.75

Perceived Usefulness (PU): Mean = 3.85, SD = 0.68

Perceived Ease of Use (PEOU): Mean = 3.70, SD = 0.72

Online Purchase Intention (OPI): Mean = 3.60, SD = 0.78

The data showed that respondents generally perceived e-commerce platforms as useful and easy to use, with a moderate intention to make purchases online. Interestingly, there were significant variations in these perceptions between different groups based on their digital literacy levels. Respondents with high digital literacy levels had the highest ratings for PU, PEOU, and OPI.

#### 4.3. Model Fit and Validation

The model fit indices were assessed to ensure the appropriateness of the SEM model. The results indicated a good fit, with the following indices:

Chi-Square ( $\chi^2$ ) = 345.32, df = 248,  $p < 0.01$

Root Mean Square Error of Approximation (RMSEA) = 0.05 (indicating a good fit)

Goodness of Fit Index (GFI) = 0.90

Comparative Fit Index (CFI) = 0.92

Normed Fit Index (NFI) = 0.89

These values suggest that the proposed model effectively explains the relationships between the variables and can be used for further analysis.

#### 4.4. Hypothesis Testing

The hypotheses tested in this study are as follows:

H1: Digital literacy positively influences perceived usefulness (PU) of e-commerce platforms.

H2: Digital literacy positively influences perceived ease of use (PEOU) of e-commerce platforms.

H3: Perceived usefulness (PU) positively influences online purchase intention (OPI).

H4: Perceived ease of use (PEOU) positively influences online purchase intention (OPI).

The standardized path coefficients and results from the SEM analysis are shown below:

H1: Digital Literacy and Perceived Usefulness

The analysis revealed a significant positive relationship between digital literacy and perceived usefulness ( $\beta = 0.68, p < 0.01$ ). This indicates that individuals with higher digital literacy levels are more likely to perceive online shopping as useful, confirming that digital literacy enhances consumers' ability to understand and appreciate the benefits of e-commerce platforms, such as convenience, a broader selection of products, and competitive pricing.

H2: Digital Literacy and Perceived Ease of Use

Digital literacy was found to have a significant positive effect on perceived ease of use ( $\beta = 0.72, p < 0.01$ ). Consumers who possess higher digital literacy skills are more comfortable navigating e-commerce websites, making them perceive these platforms as easier to use. This suggests that individuals with higher digital literacy can more effectively interact with websites, evaluate product features, and complete transactions with minimal effort.

H3: Perceived Usefulness and Online Purchase Intention

Perceived usefulness significantly influences online purchase intention ( $\beta = 0.56, p < 0.01$ ). Consumers who perceive e-commerce as a useful tool for purchasing products are more likely to intend to purchase online. This confirms that when consumers see tangible benefits in using e-

commerce platforms—such as timesaving, convenience, and accessibility—they are more likely to make future purchases.

H4: Perceived Ease of Use and Online Purchase Intention

Perceived ease of use also has a significant positive effect on online purchase intention ( $\beta = 0.61, p < 0.01$ ). Consumers who find e-commerce platforms easy to use are more likely to intend to make purchases from these platforms. This indicates that when consumers feel confident in their ability to navigate and complete transactions on an online platform, their intention to purchase is heightened.

#### 4.5. Mediating Effects of Perceived Usefulness and Perceived Ease of Use

The SEM analysis revealed that perceived usefulness and perceived ease of use mediate the relationship between digital literacy and online purchase intention. Specifically, digital literacy influences perceived ease of use and perceived usefulness, which in turn, significantly affect online purchase intention. This mediation effect was confirmed by the indirect effects analysis, which revealed the following results:

Indirect effect of digital literacy on online purchase intention through perceived usefulness = 0.38 ( $p < 0.01$ )

Indirect effect of digital literacy on online purchase intention through perceived ease of use = 0.44 ( $p < 0.01$ )

These results suggest that digital literacy does not directly influence online purchase intention; rather, it impacts consumers' perceptions of the platform's usefulness and ease of use, which ultimately drives their intention to purchase online.

#### 4.6. Comparison by Digital Literacy Levels

The study also compared the results based on the respondents' self-reported digital literacy levels (high, moderate, and low). The findings indicated significant differences in perceptions across these groups:

**High Digital Literacy Group:** This group had the highest scores for PU (mean = 4.12), PEOU (mean = 4.05), and OPI (mean = 4.02). They were the most likely to make online purchases and had

the strongest perception of the benefits and ease of use of e-commerce platforms.

**Moderate Digital Literacy Group:** This group had moderate perceptions of PU (mean = 3.85), PEOU (mean = 3.65), and OPI (mean = 3.45). While they appreciated the usefulness and ease of use of e-commerce platforms, their purchase intention was still relatively moderate.

**Low Digital Literacy Group:** This group had the lowest scores for PU (mean = 3.50), PEOU (mean = 3.30), and OPI (mean = 3.00). They faced challenges in navigating online platforms and were less likely to engage in online shopping.

These findings underscore the importance of improving digital literacy, particularly in rural and semi-urban areas, to foster greater engagement with e-commerce.

## 5. Conclusion

The results of this study clearly demonstrate the crucial role that digital literacy plays in shaping consumers' perceptions of e-commerce platforms in Pakistan. Digital literacy significantly enhances perceived usefulness and perceived ease of use, which in turn positively influences online purchase intention. These findings suggest that increasing digital literacy, especially in rural areas, can lead to higher engagement with e-commerce platforms and greater consumer confidence in online shopping.

The study also highlights the need for e-commerce businesses in Pakistan to design user-friendly platforms that cater to consumers with varying levels of digital literacy. Moreover, policymakers should focus on digital literacy programs to bridge the gap between urban and rural populations, ensuring that all consumers have the skills necessary to participate in the digital economy. Future research could explore the impact of digital literacy interventions on actual purchase behavior and examine other variables, such as trust in online payment systems, that may further influence online shopping intentions.

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