ISSN (Print): 2959-4391 ISSN (Online): 2959-4405

JOURNAL OF SOCIAL SCIENCES DEVELOPMENT

www.jssd.org.pk editor@jssd.org.pk

THE CONTRIBUTION OF E-COMMERCE TO ECONOMIC DEVELOPMENT IN PAKISTAN: OPPORTUNITIES AND CHALLENGES

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KEYWORDS

E-Commerce, Digital Infrastructure, Digital Payments, Small & Medium Enterprises (SMEs), Regional Development Pakistan

ARTICLE HISTORY

Date of Submission: 18-10-2025
Date of Acceptance: 22-11-2025
Date of Publication: 23-11-2025

ABSTRACT

E-commerce has emerged as one of most critical economic transformations in developing nations, which provide companies with a chance to overcome the geographical boundaries and increase productivity. In Pakistan, there are however differences across regions and underdeveloped districts like Dera Ismail Khan are behind in terms of digital preparedness. This research paper analyses the role of e-commerce in the economic growth of regions like Dera Ismail Khan through the adoption rates of e-commerce by small and medium enterprises (SMEs), consumer behavior, and impact of digital infrastructure, payment system & government support. It was quantitative & cross-sectional study that was conducted on 364 participants. The analysis identified how infrastructure, adoption, and digital payments; demographic differences & institutional factors have significant influences. E-commerce has proven to have a positive impact in economic activity and access to the market economy in Dera Ismail Khan, but there are still infrastructural and trust-overcoming challenges. The results provide significant information for reaching conclusion. Thus, the regional digital development be inclusive, & strategic policy interventions, such as enhancing broadband connectivity, promoting fintech trust, increasing logistics capacity & developing human capital are needed.

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DOI https://doi.org/10.53664/JSSD/04-04-2025-03-27-39

INTRODUCTION

The use of e-commerce has emerged as one of most radical impacts of this modern world economy. It has changed the ultimate way as businesses are conducted and the way consumers access these goods and services by integrating digital infrastructure, logistics and financial technologies (Tahir, Azhar & Muhammad, 2025). Internet connectivity, mobile banking and social-media marketing are fast expanding in developing countries like Pakistan which has provided new prospects in the

area in terms of business creation and regional coverage (Noorulain, Shah & Amjid, 2024). But even with robust national development, e-commerce is unevenly distributed across geographical regions, with less central districts still experiencing infrastructural, technological, and behavioral adverse forces that limit involvement in digital economy. The e-commerce is not just technological change, it is economic re-arrangement that involves sinking transaction costs, by-passing physical market structures and establishing new source of employment, entrepreneurial opportunities and participation in the exports. To the SME, entry barriers have been reduced especially through the digital platforms which have allowed the enterprises to have access to consumers well beyond their geographic location.

The literature suggests certain advantages, depending on the availability of strong infrastructure, logistics, and mechanisms of trusting digital payments (Maliki, 2021; Khatib & Mohamad, 2024). In semi-urban area with low level of industry & limited connectivity, reflects the national problem of the equitable adoption of digital change throughout the provinces of Pakistan. in this linking, the e-commerce is placed in the context of the regional economic development and evaluated in terms of the contribution towards income generation, the business performance, and employment (Noorulain, Shah & Amjid, 2024). It is based on two complementary theoretical approaches in the analysis as adoption behavior can be explained using Infrastructure quality and digital literacy is directly related to technology acceptance model (Venkatesh & Davis, 2000), discusses adoption behavior in terms of perceived usefulness and ease of use. The resource-based view (Barney, 1991) focuses on firm-level capability as the source of competitive advantage, in the case of e-commerce, these are digital marketing competency, logistics integration, and payment efficiency towards the desired consequences.

The combination of these theories explains the interaction of digital readiness with human capital and the institutional support to determine the economic potential of peripheral areas because the supportive leadership environments reduce the strain and improve performance (Schaupensteiner, González & Borgmann, 2021). Although the amount of research on the adoption of e-commerce in Pakistan has been growing, still, the majority of its investigations have been performed in such metropolitan centers like Karachi, Lahore, or Islamabad where infrastructure is rather developed (Mustafa, Aslam & Qazi, 2018; Rehman, Rauf & Imtiaz, 2022). Conversely, smaller urban centers with less empirical data on the topic contain only rather limited evidence regarding the possibility of the digital adoption potentially having the most marginal effect on the local economy. It is both a prospect and a limitation of local online shopping. The new generation of entrepreneurs, artisans and service providers in this context will have the chance to reach wider markets, but the lack of broadband coverage, high costs of logistics, or lack of consumer confidence in online purchases have slackened the pace.

Another aspect of present research is connected to the human capital and behavioral preparedness which is one of the frequently neglected factors in digital transformation. Research on organizations is gaining momentum in standing of technological adoption being accompanied by psychological resilience, motivation, and emotional regulation. The literature revealed that working when sick, presenteeism, causes resource wastage and burnout that lowers productivity (Javeed, Siddique,

Ahmad & Noor, 2025). This be applied to digital economy like SMEs that embrace e-commerce have to find a balance between digital tasks and employee welfare to continue with sustainable performance. The work life balances, burnout and flexibility, a skill needed by the entrepreneur in small businesses who tend to do more than one job (Muhammad, Aslam, Manzoor & Ahmed, 2023). The literature show that emotional intelligence workers are able to interact, deal with complaints, and negotiating digitally, directly correlates with customer relations online and conflict resolution. Such behavioral thought contributes to insight of e-commerce as technological, but also as human-development process.

LITERATURE REVIEW

E-commerce has become key driver of globalization, as triggered productivity, entrepreneurship and inter-country trade. The World Bank (2020) and UNCTAD (2021) argue that the digital trade lowers the cost of market entry, increases price transparency and diversifies export bases, especially in the case of developing economies. The research shows that online trade is not only beneficial in terms of sales, but also changing supply-chain effectiveness, customer engagement, and resources distribution (Vashishtha & Kapoor, 2023). Mobile-first patterns of adoption have accelerated this in global south, allowing micro-enterprises to engage in global markets without investing heavily to participate in them (Kumar, 2021). These changes are consistent with RBV, theorizes technology in form of company-specific power that creates competitive advantage when combined with HR and strategic intent (Barney, 1991). The firms that are effective in uniting digital logistics, analytics, and customer-engagement routine are able to realize long-term performance gains. In line with RBV, TAM (Venkatesh & Davis, 2000) places perceived usefulness and ease of use as fundamental determinants of adoption.

The intersection of these two structures assists in answering such inquiries as the reasons why the quality of the infrastructures and behavioral preparedness co-condition the possibilities of digital transformation in peripheral economies (Kalyani & Devi, 2024). In the third world, e-commerce can only thrive economically and depend on infrastructure and institutional support and consumer confidence. According to Akhmetova et al. (2020), the internet penetration and stable networks of delivering goods and services are the keys to inclusive growth; otherwise, the online markets are recreating inequality instead of eliminating it. South-Asian studies prove the same tendencies: in big cities, market of online shopping develops steadily, whereas in rural areas, bandwidth resources, inadequate logistics, and unwillingness to use non-cash options exist (Rodrigues & Coelho, 2022). This is case of unequal development in Pakistan. The Digital Pakistan project by the government has increased coverage of broadband, but digital inclusion is still limited to metropolitan clusters. In this linking, this can be seen in the small cities where infrastructural and behavioral disparities hinder development.

The literature identified that satisfaction of customers with e-commerce in Pakistan is determined by the reliability of logistics and the latter last mile connectivity. On the same note, Maliki (2021) highlighted that digital-payment systems are secure and thus increase confidence and efficiency of consumers and market. According to Mustafa, Aslam and Qazi (2018), Pakistani SMEs are behind the adoption of technology due to low financial literacy, insufficient capital, and lack of exposure

on the use of ICT tools. These results indicate that there is twofold problem: the spread of technology reduces transaction costs, but the lack of enabling ecosystems, such as skills training and delivery infrastructure and trust mechanisms, does not allow everyone to be involved. This interaction leads towards emergent connectivity and growing entrepreneurship and that of digital skepticism. These advantages are based on institutional maturity and behavioral trust. Thus, Diniz, Albuquerque and Cernev (2012) have proved that the efficiency gains of ICT diffusion can be nullified by lower trust in the digital finance.

According to Pakistani data provided by the State Bank of Pakistan (2022), despite the fact that the number of fintech users continues to grow, the cash-on-delivery is still prevalent, which is also reflected in the results of the current study. To put these trends into perspective, it is wise to make correlation with organizational behavior studies. Javeed et al. (2025) found that the presenteeism phenomenon of working despite sickness causes burnout & reduced performance. The comparison is furthered to entrepreneurs who go too far in the management of the digital channels without the institutional or psychological reinforcements. Sanawar, Javeed and Siddique, (2025) determined that work-life balance alleviates fatigue and enhances flexibility - qualities that are important in maintaining an online business presence. The analysis of emotional regulation, proposed by Nawaz, Siddique and Javeed (2025) prepares people to handle the virtual interaction and conflict with customers better. All these studies combined highlight the importance of human factors, i.e., trust, well-being, as well as emotion management, as important as technology in fulfilling the economic potential of e-commerce.

The empirical research in Pakistan has continually found three structural obstacles which are; lack of reliable internet connectivity, expensive logistics, and lack of trust in making payments online. Saleem, Tariq and Qadir (2022) have shown that adoption rate of the SMEs is directly correlated with the quality of broadband. The transport infrastructure is another factor that exacerbates this problem because it escalates costs of last-mile deliveries (Amjad, Iqbal & Saleem, 2022). Besides, use of cash-on-delivery negates liquidity cycles and scalability of operations (Kabango & Romeo, 2015). Low digital literacy overlaps with these limitations in semi-urban locations. Customers are challenge of incorporating payment gateways or online marketing analytics. The support provided by the institutions is also not great: government initiatives are infrequent, and local training centers seldom cover the useful skills related to e-commerce (Mustafa, Aslam & Qazi, 2018). The ecosystem thus does not have synergy that would help to convert connectivity into business performance that is sustained. In Pakistan, SMEs control the non-agricultural sector of employment & contribute close to 40% of total GDP.

The retail and handicrafts have recorded most rapid digital adoption within this industry, which is supported by social-media advertising & less intensive logistics demands (Dubey & Bansal, 2021). On the other hand, agriculture is still under-represented because the goods are perishable, there is no infrastructure of cold-chain, and digital literacy amid farmers is low. These trends are reaffirmed in the thesis data, which indicates that retail and handicraft firms indicated a mean score of above 3.6 on a 5-point scale on adoption but agriculture registered an average of 2.2. These differences can form digital divide that expand income disparity without being corrected. The comparative

evidence of Saudi Arabia (Ghamdi, Nguyen & Drew, 2015), Malaysia (Ahmad, Rahman & Khan, 2020) suggests that digitalization of SMEs can be accelerated with help of government incentives, partnerships between public and private, and consumer-trust campaigns. When these lessons are applied to situation in Pakistan, it would imply that equitable diffusion presumes sustained policy support & skills investment, such efforts like Digital Pakistan and Raast payment system have not been evenly effective.

Research Hypothesis

H1: The e-commerce adoption will be increased with the support of better internet and logistics.
H2: There is difference in revenue amid businesses as utilize e-commerce and those which do not.
H3: The internet and delivery services are significant limitations towards growth of e-commerce.
H4: The online sales are more with the use of digital payment compared to the cash-on-delivery.
H5: Younger generations would engaged more in online shopping compared to older consumers.

RESEARCH METHODOLOGY

This research had a quantitative and cross-sectional design since it was aimed at assessing the role of e-commerce in developing regional economies in Dera Ismail Khan, Pakistan. This method was chosen due to its capacity to test the relations between variables at a particular point in time and is in line with traditional practices in business & behavioral research (Creswell, 2018). The paradigm adhered to the TAM (Venkatesh & Davis, 2000) and RBV (Barney, 1991) that focused on the role of the development of the firm-level capability and adoption of technology as the components of predictable performance.

Population & Sampling

The sample is local business owners, consumers, and service providers that are engaged in digital or traditional commerce in the particular context, and thus selected 364 valid responses, including 69 businesses, 285 consumers, and 10 representatives of the courier or fintech, as the target population. The sample was also large enough to accommodate the main areas of the district, retail, handicrafts and agriculture to enable the results be generalized in systematic manner. In this linking, there was voluntary participation of the respondents and was confidential with some underlying institutional ethical endorsement.

Data Collection & Instrumentation

A validated questionnaire of previous e-commerce study was used in coming up with a structured questionnaire that was used through an administration as a structured questionnaire in the data collection process. The items were graded with the five-point Likert scale (1 = strongly disagree to 5 = strongly agree) and comprised such aspects as infrastructure, payments, institutional support, level of adoption and economic results. The internal consistency was high because the Cronbach alpha used in testing the reliability of the tool was 0.86. The questionnaires were distributed via the Internet and in-person for collecting the desired data from respondents. The trained enumerators assisted the respondents as it was done to make it clearer and bias less. Thus, the questionnaire was distributed to a sample of 400 participants and the response was high at 91 percent after cleaning up of data for analysis.

Data Collection & Analysis

The statistical analysis was done by the SPSS 26.0. Hypotheses were tested through inferential tests and the adoption and demographic statistics summarized through descriptive statistics. Multiple regression analysis was used to establish the predictive capacity of infrastructure, digital payments and institutional support on adoption of e-commerce and economic development. The difference in each demographic group and sector was analyzed using the independent-samples t-tests and one-way ANOVA for realizing desired outcomes. It was decided that the level of significance is $p < .05$, and diagnostic tests were conducted to ensure that there were no severe issues of multicollinearity or heteroscedasticity.

Table 1 Data Analysis Framework

Variable	Measurement Focus	Statistical Test	Hypothesis
Digital Infrastructure	Internet & logistics quality	Regression	H_1: Infrastructure → Adoption
Digital Payments	Use of e-wallets and gateways	Regression	H_2: Payments → Transactions
Institutional Support	Effectiveness of policy and training	Regression	H_3: Support → Adoption
Sectoral Differences	Retail, handicrafts, agriculture	ANOVA	H_4: Adoption differs by sector
Demographics	Age, gender, income, education	t-test/ANOVA	H_5–H_6: Adoption differs by groups
Economic Outcomes	SME growth and employment	Regression	H_7: Adoption → Development

RESULTS OF STUDY

In an evaluation of the e-commerce roles in enhancing the economic growth of Dera Ismail Khan, the analysis evaluated the extent to which the e-commerce has contributed to the growth in terms of infrastructure, digital payments, institutional support, and demographics. Findings affirm that digital infrastructure and payment systems are best predictors of e-commerce adoption, whereas demographic and sectoral differences indicate uneven distribution of digital preparedness within the region. These results are consistent with evidence on national level, highlights that combination of connectivity and financial inclusion is main driver of the digital growth of Pakistan (State Bank of Pakistan, 2022).

Infrastructure & Adoption

The findings of regression analysis have shown that the quality of digital infrastructure is a strong predictor of e-commerce adoption ($= 0.67$, $p = .001$), and it accounts for almost 42 percent of the differences in the adoption levels. The unstable internet connection, long delivery time, and power interruption were always mentioned by respondents as hindrances to sustained business activities. The correlation serves the assumption of Technology Acceptance Model which predicts that ease of use and reliability have a positive relationship with behavioral intention to adopt (Venkatesh & Davis, 2000). Rehman et al. (2022) in the city of Pakistan and Ahmad et al. (2020) in Malaysia

reported similar patterns, thus highlighting the fact that infrastructural adequacy is a universal requirement to a sustained e-commerce engagement. The circumstances would suggest that local entrepreneurs rely on consistent connection to communicate with customers and track their orders; otherwise, risk perceived will be more significant than the benefit, will not encourage long-term use of digital form.

Electronic Payments & Number of Transactions

The second factor was digital payments, having 0.61 ($p < .001$). Respondents who employed fintech tools (Easypaisa, Jazz Cash, and Raast) reported significantly better transaction volumes compared to those who only used cash-on-delivery. The outcome confirms the existing information in global literature that the trustful and secure payment systems make perceived risk less and online buying more frequent (Azeem, Sheikh & Hussain, 2015; Maliki, 2021). Qualitative feedback has indicated that the key one is trust: buyers like instant digital receipts, and sellers like transparent settlement procedures. Still, 48% of surveyed consumers still gave cash-on-delivery as preference due to fear of fraud and poor money refund policies. This ambivalent taste demonstrates the necessity of robust consumer-protection systems, financial-technology education initiatives. The results reflect the observations on the organizational behavior: as presenteeism decreases productivity by consuming employees' resources (Javeed et al., 2025), excessive dependence on cash and manual operations consumes firm efficiency, simplification of online transactions, is similar business-level mechanism of resource conservation.

Sectoral Differences

The ANOVA ensured that there was significant sectoral difference in the level of adoption ($F = 9.32$, $p < .001$). Retail was the most adopted category ($M = 3.80$, $SD = 0.41$), then handicrafts ($M = 3.64$, $SD = 0.52$), and lastly, agriculture ($M = 2.21$, $SD = 0.63$). Bar chart representation: (could be replicated in word or excel). These variations indicate the logistical and the product-fit issues that have been identified in the previous research (Mustafa, Aslam & Qazi, 2018). The producers of the retail and handicraft, where small and non-perishable products are sold, have lighter delivery needs and contain visual promotion through social media. On the other hand, agriculture is characterized by a complex shipping, perishability and digital-literacy challenges. Politically, the sector-driven enablement, including cold-chain-infrastructure, aggregation centers, and training of farmers, is required to avoid digital marginalization. Results of the study are similar to those of Ghamdi et al. (2015) in the Saudi Arabia, in which customized incentives of the traditional industries increased an adoption faster.

Demographic Variations

Independent-samples t-tests showed that there are significant differences in e-commerce activity by age. The younger respondents (18.35 years), have higher adoption scores ($M = 3.75$) as compared to the old respondents (36 years and above) ($M = 2.80$; $t = 5.21$, $p < .001$). There was no significant difference in the gender with the women participants reporting more issues about online fraud and privacy. Digital inclusion was found to be positively correlated with education and income levels ($r = 0.46$, $p < .01$), which supports the fact that awareness and purchasing power determine digital inclusion. In this regard, the findings highlight the importance of the provision of discrete digital-

skills and literacy interventions, particularly among older adults and the poorer population. The same results were observed in Rehman et al. (2022) and Saleem et al. (2022), which point out that demographic differences, rather than technology in itself, are the ones that frequently define the rate of digitalization.

Institutional Support

There were ambivalent perceptions about government and institutional support. The institutional support had positive yet insignificant regression coefficients (0.29, p <.05) and accounted for 18 percent of the variance in adoption. The respondents were dissatisfied with the current programs provided under Digital Pakistan and access to SME-related training. This is reminiscent of Rehman et al. (2022), who discovered that the policy implementation differences between urban and rural jurisdictions were present. The results imply that the digital adoption is uneven, unless there are localized facilitation, like training centers, simplified credit schemes, and advisory hubs. Human-resource parallels recur again when healthcare organizations are considered in which burnout in institutional support moderate enhances engagement. In the same way, the government or platform support allows mitigating fatigue of digital entrepreneurs and keeping them active with the sense of support & mentorship.

Economic & Employment Effects

The regression evaluation between the adoption of e-commerce and the economic result yielded a substantial positive correlation (0.58 = 0.001). Firms that reported high rates of digital participation realized significant improvements in volumes of sales, client base, and part-time employment. Thus, 61% of respondent businesses affirmed that their income or sales had increased since they engaged in online selling. That performance is consistent with resource-based view which explains excellent performance by the build-up of distinctive digital and managerial resources (Barney, 1991). The observation agrees with evidence provided globally that digital channels increase productivity and improve access to the novel markets (UNCTAD, 2021; World Bank, 2020). Interestingly, other entrepreneurs cited the pressure of workload, supports a point by Javeed et al. (2025), stating that the depletion of resources may decrease the productivity in the long run unless it is offset by work-life management. In this respect, emotional-intelligence competences, as defined by Nawaz et al. (2025), come in handy to enable small teams address customer complaints and cope with dynamics of online conflicts.

Managerial & Behavioral Insights

The human capital aspect of digital adoption is offered through the integration of the behavioral perspectives. Businessmen who are time and emotion conscious have more stable operations online. The evidence of the work-life balance (WLB) provided by Sanawar and Javed (2025) confirms that performance sustainability is connected to the effectiveness of balancing the efficiency of the use of technologies as well as the well-being of the individual. On the same note, the emotional-intelligence (EI) depicts that emotionally intelligent people are calm when dealing with customer conflicts- a critical attribute in the online businesses where bad commentaries can be easily shared. Thus, those entrepreneurial leaders who possess more competitive emotional-intelligence skills can receive customer complaints and deal with online conflict more efficiently, which is consistent

with evidence in secondary-school environments where EI plays a key role in enhancing conflict-management ability (Nawaz, Siddique & Javeed, 2025). This ambivalent taste demonstrates the necessity of robust consumer-protection systems, financial-technology initiatives. All these results put forward the dual-focus approach to digital transformation: behavioral readiness needs by technological readiness. The infrastructure investments in themselves cannot provide the evolution without entrepreneurs being equipped with the cognitive and emotional tools to move in the digital field without fear.

ANALYSIS & DISCUSSION

All in all, the statistical findings support previous research on the Pakistani digital environment but bring micro-regional data of particular research context. in this connection, their explanatory power by the variables of the infrastructure and payments is high which supports its fundamental position but the fact that the institutional support is low is the sign of untapped policy potential in particular circumstances. Thus, the results are produced in the systematic manner to attain desired leading outcomes.

Organizational-Behavior Frameworks & Interpretation

Presenteeism (Javeed et al., 2025) has the same analogy as inefficient digital behavior activity that is not strategically productive. Work Life Balance (Sanawar et al., 2025) is comparable to adaptive resilience - working and resting in the business cycles. Interpersonal agility is similar to Emotional Intelligence (Nawaz et al., 2025) is essential to maintain trust in the online commerce. E-commerce effectiveness is a multi-faceted product that is result of both the digital infrastructure and human-resource sustainability.

Table 2 Summary of Statistical Findings

Variable	Statistical Test	Result	Significance
Infrastructure → Adoption	Regression	$\beta = 0.67$	$p < .001$
Digital Payments → Transactions	Regression	$\beta = 0.61$	$p < .05$
Institutional Support → Adoption	Regression	$\beta = 0.29$	$p < .05$
Adoption → Economic Outcomes	Regression	$\beta = 0.58$	$p < .001$
Sectoral Differences	ANOVA	$F = 9.32$	$p < .001$
Age (18–35 vs 36+)	t-test	$t = 5.21$	$p < .001$

The findings affirm that e-commerce enhances regional economic development by strengthening market access and business productivity in particular context. Yet, the persistence of structural and behavior barriers, connectivity gaps, distrust in digital payments, limited institutional facilitation, and uneven digital literacy, continues to constrain full potential. Consistent with the international literature, the study demonstrates that technological capacity must be complemented by human-capital sustainability. Digital transformation, like organizational change, depends on supportive ecosystems where individuals can learn, adapt, and recover from strain. When infrastructure, policy and psychological enablers align, regional digital economies can achieve both inclusiveness and the strong resilience.

DISCUSSION

The results of this research affirm that e-commerce is a quantifiable and beneficial aspect in the economic growth of Dera Ismail Khan region, as long as phenomenon of e-commerce, represented by digital infrastructure, safe payment systems and institutional facilitation, comes together. The regression analysis showed that infrastructure quality (1 = 0.67, p < 0.001) and digital payments (1 = 0.61, p < 0.001) were the most significant predictors of adoption, and uneven distribution of digital capacity is demonstrated by differences between sectors and demographic imbalances. The retail and handicraft industries have evolved quicker than agriculture, that highlights transformational nature of technology as well as the danger of enhancing the digital divide. The evidence, therefore, corroborates the technology acceptance model, with its focus on usability and reliability alongside the resource-based view, which aligns the digital capability as a strategic resource that increases performance and competitiveness of the firms for realizing the potential consequences. In addition to the structural factors, there is the human aspect of the digital transformation that this study has brought to attention.

The results of the associated organizational studies support the idea that technology is not enough to provide any lasting productivity. The study on presenteeism (Javeed et al., 2025) cautions that the overworking and the ability to be connected all the time will cause a shortage of cognitive and emotional resources, reducing long-term productivity. On the other hand, flexibility, compassion, and trust, which are needed by entrepreneurs in online business and dealing with virtual customers, are enhanced by the ability to balance work and life (maintaining work-life balance) and nurture emotional-intelligence skills (Nawaz, Siddique, 2025). Thus, it can be concluded that sustainable e-commerce development relies on both digital literacy and psychosocial preparedness and that interventions to mitigate digital illiteracy and lessen the digital divide should incorporate self-management & resilience training and digital ethics. According to Rehman et al. (2022), there are still gaps in implementation amid rural & urban jurisdictions. In context, local respondents have strong sense of ineffectiveness of government support with mean satisfaction scores being below 2.0 on 5-point scale.

This is impeded by lack of training centers and credit facilities designed to serve SMEs. In order to address these gaps, policy interventions should be designed to take a systems approach: extending broadband coverage, coordinating logistical nodes and advancing financial-literacy campaigns at once. Moreover, behavioral results of Sanawar and Javed (2025) and Nawaz et al. (2025) suggest that emotional intelligence, adaptability and time management as soft skills should be developed by institutional programs as well to improve human aspect of digital interaction. It is based on these insights that some recommendations are presented. To begin with, widen broadband and logistical networks by engaging in partnerships with the privates, focusing on the peripheral areas as well as agricultural supply chains so that equitable connectivity is achieved. In this drive, this ambivalent taste demonstrates the necessity of robust consumer-protection systems, financial-technology education initiatives. Second, facilitate the fintech trust and literacy, through wallet incentives and transparent refund and consumer-protection systems to turn cash-on-delivery users into confident digital payers.

It will require human-factor preparedness as well to successful digital adoption, since one of factors that determine how individuals can adjust to new work requirements and technological conditions is their psychological stability and well-being (Bano, Naz, Leghari & Ahmed, 2019). Third, the systematize support services to SMEs local training centers, easier access to credit and local digital-skills centers) in order to create durable entrepreneurial potential. Fourth, the incorporate human-resource sustainability in the digital policy: foster flexible work hours, support employee welfare, and incorporate emotional-intelligence training in entrepreneurship courses. Lastly, enhance the research-policy connections through the creation of systematic surveillance of digital indicators of region to use during interventions. Together, these steps would turn e-commerce into multifaceted development driver, which both supports economic productivity and human welfare. Peripheral areas such as Dera Ismail Khan can be developed through coordinated infrastructural investment as well as behavioral adjustments to become active players in the developing knowledge economy in Pakistan.

CONCLUSION

This paper has discussed how e-commerce can promote the growth of Pakistani underdeveloped areas through the case study of Dera Ismail Khan. The results provide a solid empiric evidence to the point that digital platforms can change business performance, expand markets access, and generate entrepreneurship opportunities- despite having low-quality infrastructure. This fact was proved by the quantitative data showing much greater increase in revenues in the businesses that practiced e-commerce as compared to non-adopters. However, structural limitations, including lack of internet connectivity, unreliable logistics, distrust in online payments are still significant impediments to complete adoption. The research also revealed that the digital shift is being led by younger consumers as well as entrepreneurs (1835), whereas older groups and female respondents are not well represented. In theory, research confirmed and prolonged the Technology Acceptance Model (TAM) and Diffusion of Innovation (DOI) theory. It has shown that perceived usefulness and ease of use are major drivers of adoption, but their effect is mitigated by local infrastructural and cultural factors.

The study adds to the e-commerce literature through contextualization of these established models in a rural and underdeveloped economy where academic literature has been limited. Actionable insights are presented in the study as far as the managerial view is concerned. In the case of SMEs, it is possible to scale without capital investment by adopting e-commerce. Still, managers have to tackle the problems of trust, optimize the operation of the logistics, and train their staff to promote digital processes. Among the most important lessons learned is the fact that economic digitalization in Pakistan does not only involve technology, but accessibility, inclusion, and local enablement. The absence of trust, relatedness and customized support means that e-commerce will only be an urban privilege and not a national driver of inclusive development. Moving forward, future studies must investigate comparative case studies amid various districts, further incidence of gender, sectoral, and long-term employment effects of the uptake of digital. It asks a change in approach to digital development as a standardized solution, but as a strategy that is adapted locally to realize inclusive economic development.

REFERENCES

Ahmad, N., Rahman, M., & Khan, S. (2020). E-commerce adoption among SMEs in Malaysia: An empirical analysis of enabling factors. *Asian Journal of Business and Management*, 8 (2), 44–55.

Akhmetova, S., Tursunova, A., & Bekova, L. (2020). Digital infrastructure and inclusive growth in developing economies. *Journal of Economic Policy Studies*, 6 (4), 201–216.

Amjad, M., Iqbal, Z., & Saleem, R. (2022). Logistics constraints and SME competitiveness in Pakistan's e-commerce sector. *Pakistan Journal of Commerce and Social Sciences*, 16 (1), 144–160.

Azeem, T., Sheikh, A., & Hussain, M. (2015). The financial inclusion through mobile payments in Pakistan. *Pakistan Economic Review*, 54 (2), 39–52.

Bano Z, Naz I, Leghari N, Ahmed I. (2019). Psychological well-being of substance use patients: Role of the religious therapy as treatment. *Pakistan Journal of Medical Sciences*, 35 (5), 1376-1381.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120

Creswell, J. W. (2018). Research design: Qualitative, quantitative, and mixed methods approach (5th ed.). Thousand Oaks, CA: Sage Publications.

Diniz, E., Albuquerque, J., & Cernev, A. (2012). The mobile money and financial inclusion: The regulatory lessons from the developing countries. *Electronic Commerce Research and Applications*, 11(5), 496–504.

Dubey, A., & Bansal, S. (2021). Customer relationship management in digital age: new directions for B2B and B2C. *Journal of Business Research*, 128(1), 44–58.

Ghamdi, R., Nguyen, J., & Drew, S. (2015). Factors influencing e-commerce adoption in Saudi Arabia: A quantitative analysis. *International Journal of Electronic Commerce Studies*, 6 (1), 53–76.

Hussain, K., Latif, S., & Qureshi, N. (2021). E-commerce and employment generation in emerging economies: Evidence from South Asia. *International Journal of Development and Business Policy*, 7(3), 203–217.

Javeed, I., Siddique, M., Ahmad, J., & Noor, R. (2025). Presenteeism and its effects on employee burnout: Examining the mediating role of burnout on productivity loss in blue-collar jobs. *Academia Journal of Social Sciences*, 4(4), 2019–2026.

Kabango, C. M., & Romeo, G. (2015). Cash-on-delivery systems and consumer confidence in online trade. *Journal of Retailing and Consumer Studies*, 27(2), 55–64.

Kalyani, V., & Devi, D. (2024). Digital Marketing Evolution: A Bibliometric Method for Mapping the Web of Science Database. *FMDB Transactions on Sustainable Humanities and Society*, 1(1), 10–20.

Khatib, M. E., & Mohamad, H. (2024). Digital transformation and SMART: the trust factor. *International Journal of Theory of Organization and Practice*, 3 (2), 137–155

Kumar, P. (2021). Mobile-first digitalization and SME competitiveness in South Asia. *Global Business Review*, 22(4), 881–898.

Maliki, R. (2021). E-commerce in developing countries: The role of digital trust and consumer protection. *International Review of Economics and Commerce*, 9(3), 112–124.

Muhammad, D., Aslam, A., Manzoor, R., & Ahmed, M. (2023). E-commerce in Pakistan: Prospects and Challenges. *Al-Qantara*, 9 (1), 270-287.

Mustafa, M., Aslam, R., & Qazi, N. (2018). The Barriers to SME e-commerce adoption in Pakistan: Evidence from provincial data. *Pakistan Development Review*, 57(4), 321–338.

Nawaz, N., Siddique, M., & Javeed, I. (2025). Effects of emotional intelligence on conflict management: A survey of secondary-school teachers, Dera Ismail Khan. *Research Journal of Social Affairs*, 3(6), 870–878.

Noorulain, Shah, M., & Amjid, A. (2024). Digital Trade, Economic Growth & Employment Opportunities: Evidence from Pakistan. *Global Management Sciences Review*, IX(III), 89-99.

Rehman, A., Rauf, A., & Imtiaz, M. (2022). Assessing implementation of Digital Pakistan initiatives in semi-urban contexts. *Journal of Policy and Development Studies*, 12(2), 44–58.

Rodrigues, L., & Coelho, M. (2022). CRM in the digital era: Challenges and opportunities for B2B and B2C sectors. *Journal of Business and Industrial Marketing*, 38(2), 301–315.

Saleem, M., Tariq, F., & Qadir, A. (2022). Broadband connectivity and e-commerce growth: A provincial comparison in Pakistan. *South Asian Journal of Economics*, 13(3), 27–39.

Sanawar, M., Javeed, I., & Siddique, M. (2025). Importance of work–life balance and its relation with burnout: Mediation of demographics in district Bhakkar hospitals. *Research Journal of Social Affairs*, 3(6), 863–869.

State Bank of Pakistan. (2022). Annual report on the digital financial services. Islamabad: SBP Publications.

Tahir, Z., Azhar, Z., & Muhammad, A. (2025). Exploring the Landscape of Online Earning in Pakistan: Challenges & Opportunities in District Sargodha. *Journal of Asian Development Studies*, 14(1), 65-73.

transformation of the workforce. In Management for Professionals. *Digitalization Cases,* (2), 305–325.

UNCTAD. (2021). Digital economy report: Cross-border e-commerce and development. Geneva: United Nations Publications.

Vashishtha, E., & Kapoor, H. (2023). The Implementation of Blockchain Technology Across International Healthcare Markets. *FMDB Transactions on Sustainable Technoprise Letters*, 1(1), 1–12.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186–204.

World Bank. (2020). E-commerce in developing countries: new opportunities for development. Washington, DC: World Bank Group.