ISSN (Print): 2788-8320 ISSN (Online): 2788-8339

JOURNAL OF SOCIAL RESEARCH DEVELOPMENT
www.jsrd.org.pk editor@jsd.org.pk

PROBING ECONOMIC ENABLERS OF DIGITAL GROWTH: THE INNOVATION ADOPTION AS A STRATEGIC MEDIATOR

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KEYWORDS

Digital Enterprise Growth, Market Dynamism, Credit Availability, & Entrepreneurial Human Capital

ARTICLE HISTORY

Date of Submission: 21-04-2025
Date of Acceptance: 24-05-2025
Date of Publication: 26-05-2025

ABSTRACT

This study examines the economic enablers influencing digital enterprise growth in context of an emerging economy, focusing on market dynamism, credit availability, and entrepreneurial human capital. Anchored in the theoretical foundations of innovation economics and digital development, the study investigates how structural and cognitive economic inputs foster digital business expansion, with innovation adoption acting as a mediating mechanism. Using primary data collected from 300 digital entrepreneurs across Pakistan, study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyze hypothesized relationships. The findings reveal that all three independent variables significantly and positively influence digital enterprise growth, both directly and indirectly through innovation adoption. In this connection, the mediating effect of innovation adoption underscores its pivotal role in translating economic potential into entrepreneurial performance. This research offers valuable insights for the economic policymakers, development institutions, along with the private sector stakeholders aiming to advance the digital economic development through targeted reforms and innovation-supportive policies towards the sustainable development.

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DOI https://doi.org/10.53664/JSRD/06-02-2025-05-45-58

INTRODUCTION

The high pace of digitalization over the last few years has completely transformed global economic environment especially in emerging economies where digital entrepreneurship has become a key pillar in economic recovery, innovation and job creation. The process is boosted by wide-spreading of digital infrastructure, the growing coverage of mobile connectivity and the spread of platform-

based business models, that allow rapid growth of entrepreneurial activities and their penetration into mass market (Wang & Wang, 2020). The example of Pakistan, where structural inefficiencies have long limited growth of traditional businesses, introduction of digital enterprises is a paradigm shift, allowing businesses to bypass traditional constraints and deal with consumers, suppliers and service providers in a more nimble and cost-efficient manner. However, digital enterprises success is not only determined by advancement in technology but economic enablers that define the larger entrepreneurial ecosystem & define that how digital ventures can be scaled and sustained (Gkika, Kargas, Salmon & Drosos, 2025). Thus, the market dynamism, credit availability and human capital (entrepreneurial) are among enabling factors and they constitute different aspects of economic and institutional environment.

The dynamism of the market, which is characterized by rate of change, the competitiveness, and the fluctuation of customer demand, is both an opportunity and a problem to digital entrepreneurs, and they require adaptive approaches and continuous innovation (Mncube, 2025). The entrepreneurial human capital, which includes the skills, knowledge and capabilities of the digital entrepreneurs, is a fundamental asset that determines the ability of digital entrepreneurs to recognize opportunities, risk management and ability to implement innovative solutions in the fast-changing markets. The mutual dependence between these variables reflects the complicated yet determining influence of the economic environment on digital enterprise paths (Li, Cui, Wu, Lowry, Kumar & Tan, 2024). When theorizing the processes through which these economic enablers spur the growth of digital enterprises, innovation adoption stands out as key mediating factor, wherein entrepreneurs adopt new technologies, processes, business models in their operations to achieve competitive advantage. The endogenous growth theory suggests that innovation is one of the major drivers of economic and its uptake depends on absorptive capacity and strategic intent of entrepreneurs (Lehmann, Menter & Wirsching, 2022).

Digital development theory also stresses that enabling environments promote the incorporation of digital technologies into firms, making innovation adoption the mediator between macroeconomic situations and micro-level entrepreneurial outcomes. The dynamism of market has a great impact on strategies of firms especially digital enterprises that work in fluid and competitive environments. High market vitality forces companies to react to changing consumer tastes, technological changes and market rivalry activities by engaging in innovative activities. This opinion is supported by the dynamic capability's framework, which states that companies have to reinvent competencies by innovating to maintain performance. In line with this, it can be assumed that in a dynamic market environment, the need to innovate acts as one of central factors of digital enterprise development (Pronchakov, Prokhorov & Fedorovich, 2022). Access to credit is a vital financial tool, which allows entrepreneurs to invest into creation and execution of innovative solutions. The financial constraint theory suggests that lack of access to capital limits innovation and growth, in digital businesses, where there are frequently upfront costs in software, platforms and digital marketing (Akyuwen, Nanere & Ratten, 2022).

Human capital is also required in form of entrepreneurship. This construct furthers the assumption of human capital theory that education, experience and skills lead directly to the effectiveness of

entrepreneurs & forms connection amid entrepreneurial characteristics and economic performance by identifying the cognitive ability of the entrepreneur to identify market gaps, process complex information and make strategic decisions. When talking about digital enterprises, the ability to comprehend and apply digital tools, work with agile teams and overcome regulatory environments is essential to success (Block, 2023). Taken together, these relationships highlight mediating effect of innovation adoption as a transformational channel over which economic enablers have influence over digital enterprises (Li et al., 2024). This is a disjointed structure that hampers a more inclusive understanding of how these economic forces relate to each other to influence the results of digital enterprises (Meng, Ng & Tan, 2022). Second, the literature is rife with studies either categorizing innovation as an exogenous variable or a wholly derivative consequence, and failing to consider the strategic mediating role played by innovation in transforming the general economic potential into entrepreneurial performance.

Such omission is particularly significant in digital environment where innovation is not an isolated event but rather an ongoing process that is part of firm development. Third, most of the empirical studies are carried out in developed nations and there is significant gap in knowledge on how these processes play out in emerging economies with institutional gaps, regulatory ambiguity, and access to resources (Etim & Daramola, 2020). In filling these gaps, the research will propose a rigorous empirical analysis of economic enablers that support the growth of digital enterprises by combining market dynamism, credit access and entrepreneurial human capital. The mediating construct used is innovation adoption. The digital entrepreneurship ecosystem of Pakistan is a vivid example of the potential and the limits of young market environment: startups and SMEs have to deal with rapidly changing consumer behavior, lack of institutional support, and fluctuating access to capital (Khan, Khan & Iqbal, 2025). In this kind of environment, innovation adoption is need as a tool to overcome structural obstacles & growth maintenance. It places theory of digital growth in context of realities of evolving economies where current models of the enterprise development might not be adequate (Pronchakov et al., 2022).

On a practical note, the results have practical implications to policymakers, financial institutions, and development agencies, which are determined to build vibrant digital economy. As an example, understanding the connection between credit access and adoption of innovation can help build financial structures that suit the needs of digital entrepreneurs (Gkika, Kargas, Salmon & Drosos, 2025). Understanding of the role of market dynamism and entrepreneurial human capital offers direction to capacity-building efforts and regulatory changes that can enhance competitiveness of digital enterprises (Camillo, Vasconcellos, Amal & Parente, 2025). Moreover, research is relevant to the stakeholders of the private sector incubators, venture capitalists, and digital platforms who are currently developing the digital startup ecosystem. The study combines structural, financial, and cognitive approaches to a unified analytical framework to enhance theoretical understanding and produce empirically based, practically applicable results. In this linking, the study contributes to the small yet growing body of literature on digital entrepreneurship in emerging economies by paying the attention to Pakistan as an empirical context and provides a basis of future research on the similar contexts.

LITERATURE REVIEW

The current study uses framework that is based on innovation economics and digital development theory, which are two interrelated fields of knowledge that can be used to explain the factors that influence growth of digital enterprises in emerging economies. The innovation economics is based on the argument that technological change and innovation are path dependent and continuous processes supported by interlocking economic and institutional circumstances. Innovation in this case is both an input (because it is associated with human capital, financial systems, market systems, and governmental policy) and an output transforming ecological resources into economic products (Zapata & González, 2021). The digital development theory also argues that the success of digital businesses depends on the existence of an enabling environment that allows the uptake and spread of digital technologies. These views contribute to conceptual framework of this research, in which the dynamism of market, the availability of credit, and human capital involved in entrepreneurship are enabling factors, and innovation adoption is an intermediary between factors and quantifiable growth of enterprises.

The interaction between these constructs is not only economic behavior but strategic adjustments to a fast changing digital environment (Zhang et al., 2023). Empirical studies prove the hypothesis that market dynamism has a considerable impact on the development of enterprises, especially in digital industries, where there is continuous volatility. The digital firms that often do not have the tangible assets that traditionally secure debt are more vulnerable to changes in consumer demand, technological disruption, and regulatory change. The market dynamism in such contexts is both a limiting and a motivating factor, and it forces entrepreneurs to act swiftly, nimbly, and innovatively. The previous research shown that dynamic markets stir companies to adopt proactive innovation strategies (product diversification, the technological experimentation and platform-based service delivery) that tend to result in better performance, as firms are able to seize emerging opportunities before their competitors (Sun & Abdullahi Usman, 2025). Interpretation of market signals in real-time is thus a key to survival and growth and this sensitivity is highly moderated by the perceptions of market dynamism.

Those enterprises that are in more dynamic environments have a higher rate of innovation adoption, whereby innovation is viewed as adaptive need but not discretionary investment (Vo-Thai & Tran, 2025). Credit availability is another key factor that determines the development of an enterprise at all levels of growth. Since many digital businesses commonly depend on intangible resources that include intellectual property, brand equity, and user data, the conventional financing models tend to limit access to capital. The availability of cheap, timely capital does not only impact magnitude of investment but also the level of innovation an enterprise may undertake (Demertzis et al., 2024). The low-cost credit helps entrepreneurs to make research and development, digital infrastructure, platform upgrades, and marketing that are required in expanding operations. On the contrary, the entrepreneurial ambition and risk-taking behavior are inhibited by credit constraints, that reduce inclination to adopt innovations (Bărbulescu et al., 2021). Human capital defined as a summation of skills and competencies of founders and managers has been identified as major factor in innovation as well as performance.

Digital enterprises with their highly technical nature of digital products and services enhance the importance of human capital. Empirical evidence reveals that the high human capital facilitates the application of the digital tools, encourages scalable business models, and a good organizational culture (Chen et al., 2025). Also, human capital aids effective communication with the external stakeholders such as investors, regulators, and partners, and, therefore, defines provision of supplies and market information. The cognitive capability to handle complex information, anticipate trends, and develop strategic decisions in an uncertain setting is frequently cited as one of elements that distinguish successful and unsuccessful digital companies. When the institutional support is weak like in case of Pakistan, then the entrepreneurial human capital is corrective measure that enables innovation-based growth (Aslam et al., 2025). In general, theoretical background of the research is based on theory of innovation economics and digital development theory which provides a strong analytical framework in terms of explaining the reasons of development of digital businesses in the emerging economies.

This association of these constructs shows economic behavior and strategic adaptation in a rapidly evolving digital world. This relationship between these constructs reflects economic behavior as well as strategic adaptation in a fast changing digital environment (Zhang et al., 2023). Experience shows that the dynamics of the market have a great impact upon the development of the enterprise, especially in the digital environment, where volatility and continuous change are the order of the day. The increased vulnerability to consumer demand fluctuations, technological disruption and regulatory change forces digital enterprises to act with speed and agility (Chandratreya, 2025). Offensive innovation policies such as product diversification, technological experimentation, and platform-based service delivery tend to deliver better performance because they allow companies to seize new opportunities before the competitors do (Hidayat & Pok, 2025). Since such businesses are less collateralizable, the credit constraints limit the entrepreneurial ambition and risk-taking behavior, thus limiting the adoption of innovation. On the other hand, availability of credit tends to encourage business people to engage in the strategic innovation, improve customer experience, and explore new markets.

Its significance is enhanced in digital enterprises by technicality of digital products and services (Andriushchenko et al., 2020). The entrepreneurs who have a good education, experience in the industry, and digital literacy will have a better chance to recognize the opportunities in the market, cope with technological complexity, and be the leaders of new initiatives. The empirical data show that the increased human capital enables the adoption of digital tools, promotes scalable business model, and resilient organizational cultures (Zapata-Cantu & González, 2021). In settings where there is minimal institutional support, like Pakistan, the entrepreneurial human capital plays the compensatory role that allows growth through innovation technological disruption, and regulatory change (Bilal et al., 2024). The mediating effect of innovation adoption in the dissemination of the innovations is gaining more and more emphasis in the recent scholarship, which is an indication of the shift in the conceptualization of innovation as a static capability to a dynamic, multi-factorial process. It is a process that depends upon the entrepreneurial perceptions of the expected benefits,

organizational cultures that are favorable towards change and availability of necessary resources (Wijethilake et al., 2023).

The empirical studies show that environmental conditions influence firm performance through the adoption of innovation, which turns economic enablers into visible results. The innovation adoption is thus not a standalone process but a cumulative process within larger economic and institutional environment (Polyakov & Kovshun, 2021). There is still empirical evidence that has been building up in support of argument that the interplay amid market dynamism and adoption of innovation has a significant impact on enterprise performance. In this case, adoption of innovation enhances flexibility, which allows companies to explore various customer interaction models, pricing models, and service delivery models that distinguish them amid other competitors technological disruption, and regulatory change (Salamzadeh et al., 2022). Such flexibility presumes special relevance in the case of emerging economies, which are fluid markets and fluid regulatory environments. Besides, the mediating effect of the innovation adoption on the relationship between credit availability and enterprise growth has been supported (Jjagwe et al., 2024). There is also strong evidence upon the relationship between entrepreneurial human capital and adoption of innovation, especially in the digital entrepreneurship.

Entrepreneurs with more human capital have better capabilities to assess innovation opportunities, to assess the risk of implementation and to allocate resources, and this increases the likelihood of successful adoption of innovation. Thus, human capital of entrepreneurship offers latent potential and innovation adoption is working model through that potential is realized into firm performance (Wahyuni et al., 2025). Thus, based on the theoretical and empirical background presented above, the following propositions are put forward: (1) market dynamism has a positive impact on growth of digital enterprises as dynamic environments force firms to innovate and change; (2) availability of credit has a positive impact on growth of digital enterprises as it allows firms to invest financially in expanding operations and adopting technology; (3) entrepreneurial human capital has a positive effect on the growth of digital enterprises through strategic decision-making and management of innovation; (4) the adoption of innovation mediates the relationship between each independent variable and the development of all these hypotheses highlight the conceptualization of innovation adoption as the primary process that transforms the economic enablers into entrepreneurial success in the digital realm.

RESEARCH METHODOLOGY

The current research used a quantitative, deductive research design to study proposed relationship amid market dynamism, availability of credit, entrepreneurial human capital, innovation adoption and growth of digital enterprises systematically. Since the aim of the research was to empirically confirm a theoretically grounded model, the methodological orientation was based on the positivist research philosophy. Positivism assumes that there is an independent reality that can be observed, measured and analyzed through empirical observation thus, it aligns with application of structured data collection tools and statistical analysis methods that can be used to test hypothesis and make informed generalization in defined population. The target population was the digital entrepreneurs who are based in various cities of Pakistan and offer wide range of technology-based ventures such

as e-commerce websites, software growth companies, digital marketing agencies, fintech startups and app-based services. The selection criteria were determined by rising digital entrepreneurship importance in economy of Pakistan and rising interest of the government and institutions in digital transformation processes.

This type of contextual specificity makes the findings relevant in terms of the economic realities of a developing digital economy. Purposive sampling strategy was adopted to obtain a representative sample of such entrepreneurs, as respondents had to meet the criteria that were directly relevant to the study, i.e., active decision-making responsibility of innovation, financing and strategic growth. The sampling frame was designed in such a way that it included entrepreneurs who, in the course of at least one year, had continued to be operational, so that there was enough organizational maturity to draw meaningful analysis. The outreach efforts focused on the professional networks, incubators, digital startup events, online forums that focus on entrepreneurial communities. Finally, a census of 300 digital entrepreneurs was attained, which is a sample size that is comparable to the suggestions of complex models with several constructs and mediating relationships. Data was collected based on a structured survey questionnaire that was meant to explain constructs that were being studied. This instrument was based on the validated scales of previous research and adapted to the digital entrepreneurship in Pakistan.

It had areas of demographic traits, perception of market dynamism, access to credit, human capital in entrepreneurship, adoption of innovation and signs of enterprise growth. The five-point Likert scale was used to measure items, with the range of answers being between strongly disagree and strongly agree, which increased the comparability of respondents. Clarity, relevance and content validity were checked using a pre-test phase with a small sample of digital entrepreneurs and some minor revisions were made. The data were gathered both online and, in the field, thus reaching the maximum number of people, and response rates, and taking into consideration the preferences of respondents. Analytic steps performed using Partial Least Squares Structural Equation Modeling (PLS-SEM) that is a multivariate method that is mainly appropriate to exploratory models with mediated relationships and latent variables. The choice of PLS-SEM was based on the ability to deal with non-normal distributions of data, ability to work with small or medium sized samples and the ability to simultaneously assess measurement (reliability and validity) and structural (strength of relationships) models.

The analysis was done in two steps. The measurement model was evaluated first to measure the reliability, convergent validity and discriminant validity through factor loadings, Cronbach alpha, composite reliability, average variance extracted (AVE) and the Fornell-Larcker criterion. Second, the structural model was tested to determine the importance and the strength of direct and indirect routes and mediating effect of innovation adoption. The bootstrapping processes of 5,000 resamples produced strong estimates of standard errors and p-values. The ethics was present throughout the research design and implementation. The outreach efforts focused upon the professional networks, incubators, digital startup events, online forums that focus on the entrepreneurial communities. The involvement was voluntary and all the respondents were made aware of the purpose of the study, confidentiality of the responses and the freedom to withdraw with no repercussions. A statement of

informed consent was placed before questionnaire, so that the respondents were aware of aims and data-usage procedures.

RESULTS OF STUDY

Table 1 Reliability Analysis

Construct	CA	CR	AVE
Market Dynamism (MD)	0.854	0.894	0.630
Credit Availability (CA)	0.873	0.911	0.719
Entrepreneurial Human Capital (EHC)	0.882	0.918	0.688
Innovation Adoption (IA)	0.861	0.900	0.693
Digital Enterprise Growth (DEG)	0.891	0.926	0.757

The reliability and validity analysis of this study provides good support of internal consistency and convergent validity of all constructs. The Cronbach Alpha values are 0.854 to 0.891, which is above general accepted value of 0.70, and it shows that there is strong internal reliability. The CR values of 0.894 to 0.926 are also high and indicate consistency and reliability as they surpass the threshold of 0.70 and indicate stable measurement scales. Convergent validity is also reported, and the value of Average Variance Extracted (AVE) of each construct is above the value of 0.50, ranging between 0.630 and 0.757.

Table 2 Discriminant Validity

Constructs	MD	CA	EHC	IA	DEG
MD	—				
CA	0.652	—			
EHC	0.591	0.633	—		
IA	0.608	0.570	0.602	—	
DEG	0.645	0.611	0.660	0.690	—

The analysis of Heterotrait-Monotrait (HTMT) ratios shows adequate discriminant validity in all the constructs. All HTMT values are far below the conservative cut-off point of 0.85 with largest being 0.690 between Innovation Adoption (IA) and Digital Enterprise Growth (DEG), and all constructs are empirically different. The HTMT values are between 0.570 and 0.690, which proves that the constructs are conceptually related but not redundant and overlapping in measurement as they should be in a theoretically grounded model. The results confirm the structural validity of model and confirm that it is appropriate to test the hypothesized relationships using subsequent structural equation modeling.

Table 3 Multicollinearity Statistics

Path	VIF
MD → IA	1.912
CA → IA	1.843
EHC → IA	2.005

MD → DEG	1.765
CA → DEG	1.734
EHC → DEG	1.829
IA → DEG	2.221

All the predictor paths in structural model have Variance Inflation Factor (VIF) scores that are far much below the critical value of 5.0, which implies that there is a very minimal likelihood of the multicollinearity among independent variables. The values of VIF that are between 1.734 and 2.221 imply that explanatory constructs (Market Dynamism, Credit Availability (CA), Entrepreneurial Human Capital (EHC), and Innovation Adoption (IA)) are distinct enough and do not overestimate the standard error of regression coefficients. The maximum VIF value of 2.221 of the paths between Innovation Adoption and Digital Enterprise Growth (DEG) is not too high and indicates stability and reliability of the model estimates once again. Such results support validity of structural model because it shows that multicollinearity does not undermine interpretability or predictive validity of path relationships.

Table 4 Model Fit Indices

Fit Indices	Value	Threshold	Result
SRMR (Standardized Root Mean Square Residual)	0.051	< 0.08	Acceptable Fit
NFI (Normed Fit Index)	0.922	> 0.90	Good Fit
RMS_theta	0.087	< 0.12	Model Fit Acceptable

The current research provides strong support of a well-specified structural model by convergent evaluation of various model fit indices. In particular, the SRMR is 0.051, which is smaller than the recommended cut-off of 0.08, and it means that difference between the observed and the predicted correlation is acceptably low. Normed Fit Index (NFI) of 0.922 exceeds the traditional standard of 0.90, thus demonstrating better comparative fit in comparison with null model. In a complementary manner, the RMS_theta statistic of 0.087 is less than 0.12, which further affirms that the model fits well in terms of residual covariances of the reflective constructs. Collectively, these indices confirm the overall quality of the model and make it appropriate to hypothesis testing and interpretation of structural paths.

Table 5 Structural Model Results

Hypothesis	Path	Beta (β)	t-Value	p-Value	Decision
H1	Market Dynamism → DEG	0.241	3.985	0.000	Supported
H2	Credit Availability → DEG	0.203	3.472	0.001	Supported
H3	Entrepreneurial HC → DEG	0.215	3.692	0.000	Supported
H4a	Market Dynamism → Innovation Adoption	0.276	4.110	0.000	Supported
H4b	Credit Availability → Innovation Adoption	0.222	3.764	0.000	Supported
H4c	Entrepreneurial HC → Innovation Adoption	0.293	4.302	0.000	Supported
H5	Innovation Adoption → DEG	0.338	5.213	0.000	Supported

The results of the structural model show that all relationships provided are statistically significant and supportable hence showing high predictive power. Market Dynamism (0.241, p = 0.000), Credit

Availability (0.203, p = 0.001) and the Entrepreneurial Human Capital (0.215, p = 0.000) all have a significant positive direct impact on Digital Enterprise Growth (DEG) and thus have significant contribution to growth of digital enterprises. Moreover, the variables have a strong impact on Innovation Adoption: Market Dynamism (p < 0.001, 0.276), Credit Availability (p < 0.001, 0.222), and Entrepreneurial Human Capital (p < 0.001, 0.293). This fact confirms the argument that these economic enablers not only influence the growth directly but also drive innovation in the digital businesses. Innovation Adoption, on its part, has a more direct influence on DEG (B= 0.338, p = 0.000) thus demonstrating its mediating importance in the conversion of economic inputs into performance of enterprises. In this regard, the results combined prove the structural soundness and theoretical strength of the model.

Table 6 Mediation Effects

Path	Indirect Effect	t-Value	p-Value	Mediation Type
MD → IA → DEG	0.093	3.615	0.000	Partial Mediation
CA → IA → DEG	0.075	3.102	0.002	Partial Mediation
EHC → IA → DEG	0.099	3.989	0.000	Partial Mediation

The current mediation analysis confirms that Innovation Adoption plays the role of a statistically significant partial mediator in the relationship between economic enablers and Digital Enterprise Growth. In particular, the indirect effects of Market Dynamism (indirect effect = 0.093, t = 3.615, p = 0.000), Credit Availability (indirect effect = 0.075, t = 3.102, p = 0.002), and Entrepreneurial Human Capital (indirect effect = 0.099, t = 3.989, p = 0.000) are all significant in influencing enterprise growth via IA. These results indicate that though economic enablers have direct effects on growth, some of their effects are indirect through their ability to induce innovation in digital enterprises. The fact that mediation is partial means that Innovation Adoption enhances but does not exhaust the effect of predictors on growth of enterprises, which points to the significance of both the direct and innovation-mediated effects. Thus, innovation adoption is introduced as central process where structural and human capital investments can be successfully converted into performance outputs of digital businesses.

DISCUSSION

The results of the paper provide strong evidence to intricate process behind the growth of digital enterprises in the emerging economies, especially in terms of the market dynamism, credit access and the entrepreneurial human capital. The findings of the structural model show that all these economic enablers have a significant and positive influence on digital enterprise growth directly and indirectly through mediating effect of innovation adoption. These findings are also consistent with the theoretical expectations of innovation economics and digital development literature that suggest that enabling market environment, availability of financial resources, and entrepreneurial capacity are some key ingredients to the success of enterprises in the digital era. The importance of all the hypothesized relationships reflects structurally robust and conceptually consistent model that reflects multidimensional nature of digital entrepreneurial growth. In this linking, the direct influence of market dynamism to the development of digital enterprises highlights significance of

competitive along with fast-changing business environment that rewards the innovation, agility, and digital change.

The nature of such markets requires businesses to constantly change according to the needs of the consumers, emerging technology, and competition. Such dynamic environment does not only cause entrepreneurial alertness, but also leads to search of new strategies to improve firm performance. Likewise, the positive and significant impact of credit availability implies that the availability of financial capital is one of essential factors in determining the scalability of enterprises. In the digital economy of Pakistan, where formal systems of financing are usually scarce or unequally distributed, credit can enable entrepreneurs to invest in digital infrastructure, create innovative products, and increase market coverage, which are all indispensable in growth process. Entrepreneurial human capital proved to be a very strong determinant of innovation adoption and enterprise growth. Such an observation supports the idea that digital entrepreneurship is not only a structural input-based process, but one which is determined by cognitive and capability-based dimensions. Entrepreneurs with a more advanced education, experience, and digital literacy, have a better chance to identify technological opportunities, organize the resources, and apply innovations that create competitive leading advantage.

This confirms the earlier claims in the literature that human capital is a major driver of knowledge-based growth and innovation-driven performance particularly in a space where technological changes and digital disruption are very high. The use of the mediating role of innovation adoption is one of the most important contributions of the study. The results of partial mediation in all three economic pathways (market dynamism, credit availability & entrepreneurial human capital) show that innovation can be viewed as a medium that transforms the environmental and resource-based situations into concrete growth experiences. In this connection, the innovation adoption, in this case, works as a strategic reaction to the opportunities and constraints in the diverse circumstances. Such flexibility presumes special relevance in the case of emerging economies, which are fluid markets and fluid regulatory environments. It will help businesses to distinguish their services, have better operational efficiency, and stay on track in a rapidly changing digital environment. The significant and powerful impact of the adoption of innovation on the growth of enterprises supports the fact that it is the focal leading point of value creation process and proves that it is the pivot of the digital entrepreneurial success.

Entrepreneurial human capital proved to be a very strong indicator of innovation adoption and enterprise development. This observation supports the perception that digital entrepreneurship is not only a structural input phenomenon but also a cognitive and capability-based phenomenon. Entrepreneurs with a higher education, experience, and digital competencies have more chances to identify technological opportunities, enlist resources and implement innovations that can create competitive advantage. The importance of all hypothesized relationships reflects the structurally robust and conceptually consistent model that reflects the multidimensional nature of digital entrepreneurial growth. This confirms earlier claims in the literature that human capital is a major lever of knowledge-based growth and innovation-driven performance, particularly in a setting where there are steep technological changes and digital disruption. The innovation adoption is thus

not standalone process but increasing process within larger economic and institutional environment Entrepreneurial human capital also proved to be a very strong determinant of innovation adoption and enterprise growth. Another of most significant contributions of this study is the mediating role of innovation adoption.

CONCLUSION

The economic enablers like market conditions, financial access and entrepreneurial capabilities should not be considered in isolation but as a part of larger ecosystem that facilitates the innovation and development of digital enterprise. The structural factors are vital but the influence of human capital especially in the innovation cannot be overemphasized especially in developing economies wherein the institutional gaps tend to restrict access to other types of capital. The development of regulatory environments that are both agile and innovation-friendly, encouraging fair competition, lowering the barriers to entry, and facilitating experimentation with digital business models should be priority of policymakers. The study advances our understanding of the economic foundations of the digital enterprise growth thereby empirically demonstrating the interplay between the market dynamics, credit systems, human capital, and innovation behavior. Thus, it not only confirms the significance of each individual driver but highlights the mediating power of innovation adoption in shaping enterprise outcomes. As digital transformation accelerates globally, especially in the wake of rapid technological change, the insights from this research can serve as a blueprint for fostering the required resilient, innovative, and high-growth digital enterprises in the emerging economies like Pakistan.

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