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DIGITAL ECONOMY AND WOMEN EMPOWERMENT: A MEDIATION ANALYSIS OF ECONOMIC OUTCOMES IN EMERGING MARKET

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ABSTRACT

The fast pace of the digital economy is increasing women empowerment by mediating. Within the framework of emerging markets, the online markets, digital platforms, and financial technologies have allowed women to break the structural obstacles pertaining to mobility, capital accessibility, and market awareness. The study used quantitative research methodology applied with an associative research design. The primary data was gathered using a structured questionnaire which was given to the respondents who were women entrepreneurs and income generating actors involved in digital economic activities. There were 240 valid responses about which the relationships between the indicators of the digital economy, the female empowerment dimension, and the economic outcome were studied through Partial Least Squares Structural Equation Modeling (PLS-SEM). The results show that the digital economy is a significant and statistically reliable positive influence on women empowerment ($\beta = 0.653$, $p = 0.001$), which explains that the availability of digital tools, the internet market, and financial technologies allows increasing the access of women to resources, economic control, and power of choices. The improvement of gender empowerment of women in its turn plays a significant role in enhancing economic welfare ($\beta = 0.621$, $p < 0.001$). Despite the fact that the direct impact of digital economy on economic welfare ($\beta = 0.287$ $p = 0.01$) exists, it is relatively smaller, which indicates that the empowerment is one of the primary transmission mechanisms. The mediation analysis verifies that the relationships between the digital economy and the economic welfare are partially mediated by women empowerment with a high significant indirect impact ($\beta = 0.405$, $p < 0.001$). The structural model has a good explanatory ability, which explains 43 % of the variation in the empowerment of women and 69 % of economic welfare. On the whole, the findings also reveal that the economic gains of digital engagement are the most efficient when the digital active participation leads to the active empowerment, and the issues of digital access, lack of skills, and socio-cultural limitations do keep the potential of full empowerment down.

Keywords: Digital Economy, Digital Inclusion, Economic Participation, Gender Equality, Women Empowerment

INTRODUCTION

The trend towards a digital economy in the entire world has also radically changed the historic trends of production, exchange, and employment especially within the emerging economies. This has changed the way people economically participate due to the digital technologies that are in use like e-commerce platform, mobile banking and social media which have led to lower costs of transaction, increased market accessibility and the ability to work flexibly Lubián and Esteves (2017). To the women who tend to experience the structural constraints of limited movement, no pay care roles and having limited means of controlling their livelihoods, the digital economy provides them with new avenues to engage in economic activities and have a greater degree of

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Transparency: The authors affirm that this manuscript presents an honest, accurate, and transparent account of the study. All essential aspects have been included, and any deviations from the original study plan have been clearly explained. The writing process strictly adhered to established ethical standards.
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control over their lives Balogh (2016). Women are becoming more capable of conducting income-generating activities on digital platforms without being limited by the usual socio-economic barriers Lechman and Paradowski (2021).

Women empowerment has been well known as being a multidimensional process that entails resource accessibility, involvement in decision making, and aspect of economic outcomes control Irmatova (2023). The economic role of women within the context of most emerging markets is low because of socio-cultural tradition, disparity to education and digital literacy, and bad financial inclusion Priyabadini (2022). The digital economic participation, however, opens other avenues through which women can initiate and run businesses, enter markets and financial allows, and better the living conditions of the households maneuvering the established social functions Nghargbu and Jumare (2024). In this regard, digital technologies can enjoy significant opportunities in increasing the agency and the bargaining power of women at the domestic and community levels Kaur (2024). By equipping them with means of increasing their economic autonomy and participating well in the labor market. The change highlights the need to tackle the problem of gender inequalities in digital access and literacy to make the maximum out of the promise of the digital economy concerning the empowerment of women Rout and Samantaray (2025). In addition, enhancing the digital literacy level and promoting and increasing gender responsiveness in policy responses is imperative to make women enjoy all the benefits of digital economic opportunities and, thus, help countries grow economically and achieve sustainable development Dahlum et al. (2022), Haryani and Zadyanti (2021).

Although digital platforms are becoming increasingly more relevant to the livelihoods of women, there is scarce empirical data talking how the digital economic activity will be transformed into women empowerment and a better economic outcome K (2024). The available literature indicates that digital participation has the potential to elevate the earning power of women and bring about household welfare, but these advantages do not come naturally Kharche (2025). The construct issued is empowerment, which is frequently a decisive mediating force since the availability of digital tools will never lead to better results unless females acquire the right to make decisions and competence over the created resources Kaur (2024). On this theoretical premise, this research hypothesizes that the digital economy has a positive impact on the empowerment of women, that women empowerment affects the economic welfare positively, and mediates the relationship between digital economic participation and economic welfare.

With an enhanced digital access, digital finance and digitally enhanced services, Nepal is enhancing its digital transformation and accelerating the expanding digital economy. The increased efficiency and accessibility of innovations like AI-enabled banking have presented new opportunities to women to be included into the economic system in terms of their finances, independence, and economic performance in an ever-digitized economy Adhikari (2023), Kaya et al. (2019).

METHODOLOGY

This paper assumed the use of quantitative research approach and an associative research design to discuss how the digital economy has contributed to the empowerment of women. The quantitative method was said to meet the requirements because it facilitates objective measurement of constructs relation as well as permitting empirical testing of the theoretically based hypotheses. To detect the strength and orientation of the relationships between digital economy participation and women empowerment, the associative design was applied, especially focusing on the role of digital tools and platforms to help women gain access to resources, maintain decision-making power and economic control. The research was based on primary data gathered among the group of women entrepreneurs and income-generating actors actively involved in the online economic processes like marketing online, providing digital services, e-commerce, and using electronic financial technologies.

A structured questionnaire was used in data collection to obtain information on respondents regarding their experience and perceptions concerning outcomes of digital economic participation and empowerment. The purposive sampling strategy was used in order to make sure that respondents must have a direct and significant face with the digital economy. This strategy increased the significance of the data since the narrowed group to be targeted were only those women that use digital platforms in their economic activities. The questionnaire items were quantified with the help of a five-point Likert scale having strongly disagree to strongly agree, which made it qualitative and consistent to quantify the answers.

The construct of the digital economy was operationalized according to the indicators that included the access to the digital infrastructure, the nature of utilizing the digital platforms, the presence in the online markets, and engaging in online financial services. The indicators that were used to measure women empowerment were access and availability of economic resources, decision making, income control and power to affect economic performance in the household level. These indicators were scaled based on the available literature on the issue of digital inclusion and gender empowerment, to make concepts valid and relevant.

The analysis of the data was performed with the help of the Partial Least Squares Structural Equation Modeling (PLS-SEM) which is the best analysis tool in a study that explores and predicts the results where the latent variables are involved. The reason as to why PLS-SEM was chosen is because of its capability in dealing with non-normal data and dealing with intricate relationships among constructs. This was done by systematic analysis starting with checking the measurement model to assess reliability and validity by looking at factor loading, composite reliability, and average variance extracted.

RESULTS

This section provides the empirical result of the research one investigates the connection between digital economy and women empowerment, and the empowerment of women in promoting economic welfare. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to carry out the analysis. The findings will be presented in two phases where the first is a measure of the measurement model to determine reliability and validity of constructs, and the second phase is measurement of structural model to test the proposed hypotheses and mediation effects.

Table 1

Table 1 Reliability and Convergent Validity of the Measurement Model

Construct	Indicator	Factor Loading	AVE
Digital Economy	DE1	0.812	
	DE2	0.845	
	DE3	0.879	**0.72**
	DE4	0.861	
Women Empowerment	WE1	0.834	
	WE2	0.876	
	WE3	0.902	**0.75**
	WE4	0.858	
Economic Welfare	EW1	0.821	
	EW2	0.887	
	EW3	0.903	**0.74**

The results of the reliability and convergent validity evaluation of measurement model are reported in Table 1. All indicators of digital economy, women empowerment, and economic welfare show a factor loading which are greater than the recommended 0.70 factor loading indicating high reliability of the indicator. The values of the Average Variance Extracted (AVE) of all constructs exceed 0.50 proving sufficient convergent validity. Moreover, composite reliability (CR) values of all constructs are over 0.90 which indicates that there is a high internal consistency. These findings prove that the items in the measurements are reliable to measure the underlying constructs, namely, the digital economy participation and women empowerment.

Table 2

Table 2 Discriminant Validity (Fornell–Larcker Criterion)

Construct	Digital Economy	Women Empowerment	Economic Welfare
Digital Economy	**0.849**		
Women Empowerment	0.641	**0.866**	
Economic Welfare	0.598	0.702	**0.860**

Diagonal values (bold) Represent the Square Root of AVE.

Table 2 gives the results of the discriminant validity according to the Fornell Larcker criterion. The inter- construct correlations are lower compared to the square root of the AVE of each construct (diagonal values). This explains that digital economy, empowerment of women and economic welfare are empirically different constructs. The findings ensure that the media of each construct is a distinct part of the conceptual framework without too much redundancy.

Table 3

Table 3 Structural Model Results (Path Coefficients)

Hypothesis	Path	β (Path Coefficient)	t-value	p-value
H1	Digital Economy → Women Empowerment	0.653	8.214	0.000
H2	Women Empowerment → Economic Welfare	0.621	7.496	0.000
H3	Digital Economy → Economic Welfare	0.287	3.184	0.002

Table 3 presents the hypothesis testing and results of structural model. Results obtained indicate that there is a significant and strong positive influence of the digital economy on the empowerment of women (β = 0.653, p = 0.001), favored by H1. H2 is also supported by the fact that women empowerment positively influences economic welfare (β = 0.621, p = 0.001). Moreover, the digital economy has a direct effect on the economic welfare (β = 0.287, p < 0.01), which is relatively smaller, which means that the process of converting the digital involvement into the economic benefits relies on empowerment.

Table 4

Table 4 Mediation Effect of Women Empowerment

Relationship	Indirect Effect (β)	t-value	p-value	Mediation Type
Digital Economy → Women Empowerment → Economic Welfare	0.405	6.731	0.000	Partial Mediation

The mediation analysis is explained in Table 4. The indirect impact of the digital economy on the economic well-being by empowering women is positive and statistically significant, which proves that it has been partially mediated. This result endorses H3 and underlines the issue of women empowerment as one of the most important processes that digital economic engagement can make economic welfare.

DISCUSSION

The empirical findings validate the fact that there is a strong and statistically significant association between the digital economy and women empowerment. There is also a positive effect of digital economic participation on women empowerment (β = 0.653, = 8.214, p < 0.001), which implies that access to digital technology, online markets, and online financial services has a significant positive effect on the empowerment of women. Whereas, women empowerment positively correlates with economic welfare (β = 0.621, t = 7.496, p < 0.001). The mediation analysis also shows that the effect of the digital economy on the economic welfare is also positive but the effect is relatively lower through women empowerment (indirect β = 0.405, t = 6.731, p < 0.001), but the effect remains positive, though relatively smaller (β = 0.287, t = 3.184, p < 0.01).

On top of these statistical correlations, the data highlight the disruptive nature of the digital economy in the redesign of the economic position of women. Digital platforms will minimize structural barriers that existed in the past like lack of mobility, time poverty due to unpaid care work and lack of physical market access Jain et al. (2022). The digital economy opens up new areas where women can engage in economic activities by flexibly arranging their work and their direct interactions with consumers and other financial services, and negotiating the established socio-cultural norms. This change empowers women and makes them more powerful in families and society Dharmayanti et al. (2022).

It is also noted in the study that the ability to empower is not the natural extension of the ability to access digital information. Instead, empowerment may appear when women will have the ability to make strategic economic choices and possess the possibility to control their digital resources and income Rohatgi and Gera (2024). In the absence of such agency, the digital participation will be a reinforcement of gender hierarchies. Ongoing problems in the form of disparate digital access, digital skill gaps and socio-cultural barriers are still a critical factor that hinders the empowerment potential of digital technologies Rout and Samantaray (2025). Hence, the digital economy must be seen as a social process as well as a technological shift which needs to be accompanied by comprehensive policies, gender-sensitive digital infrastructure, and capacity-building activities focused specific target to create meaningful and sustainable women empowerment.

CONCLUSION

This study concludes that the digital economy plays a significant role in advancing women empowerment by expanding access to economic resources, enhancing decision-making capacity, and strengthening women's control over economic activities. Digital platforms and financial technologies create alternative opportunities for women to participate in economic life, particularly in contexts where traditional barriers limit their inclusion. The findings further indicate that women empowerment is a crucial mechanism through which digital economic participation leads to improved economic welfare at the household level. However, the empowering potential of the digital economy is not automatic and remains constrained by unequal digital access, skills gaps, and persistent socio-cultural barriers. Therefore, achieving meaningful and sustainable women empowerment through the digital economy requires inclusive digital infrastructure, targeted digital skills development, and gender-responsive policies. Strengthening women's digital capabilities is essential for ensuring that digital transformation contributes to equitable and sustainable development.

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