

## Determinants of women's empowerment in Kyrgyzstan: the mediating role of women entrepreneurship

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### Abstract

This study investigates the determinants of women's empowerment in Kyrgyzstan, focusing on the mediating role of women entrepreneurship. Key determinants analysed include access to finance, technical know-how, and financial literacy. Utilising Structural Equation Modelling (SEM) and a structured survey for data collection, the study gathered responses from women entrepreneurs across various regions of Kyrgyzstan. The findings reveal that technical and technological knowledge is the most critical determinant for enhancing women's empowerment. Women with greater technical and technological knowledge exhibit higher levels of empowerment. Additionally, there is a significant positive relationship between access to finance and women's empowerment, indicating that women with better financial access are more empowered. These insights provide a foundation for developing future women's empowerment programmes and contribute to the broader understanding of women entrepreneurship in developing economies.

**Keywords:** Kyrgyzstan, women's empowerment, women entrepreneurship, SEM

### Introduction

Empowerment is recognised as an ongoing and multifaceted journey where individuals progress from a state of "powerlessness and deprivation" to increased strength, influence, and control over resources, particularly within the most marginalised communities (Apisalome and Heidi, 2017).

The term "women's empowerment" emerged in the 1980s within the context of feminism (Calvès, 2009). According to Cornwall (2016), women's empowerment involves recognising and harnessing women's inner power through collaboration with other women to address inequalities. Kabeer (1999) defines women's empowerment as the ability to make strategic life choices that were previously unavailable, highlighting three interrelated dimensions: resources, agency, and achievement.

Women's entrepreneurship benefits the state socially and economically. Women often struggle to balance economic contributions with sociocultural expectations related to home life, pressures which come from both men and women. Understanding these macro-socioeconomic pressures is essential for researching this topic (Ng et al., 2022).

Nieman & Nieuwenhuizen (2003) note that while women constitute about half the population, their business participation, especially in developing countries, is disproportionate. Women's entrepreneurship is crucial for improving living standards, stimulating economic growth, and creating jobs, highlighting the need for increased female involvement in economic development.

Discussions on entrepreneurship began with Schumpeter's 1911 work and were expanded in 1942 (Fontana et al., 2021). The first article specifically on women's entrepreneurship, titled "Entrepreneurship: New Female Frontier", was published in 1976 by Schwartz (Schwartz, 1976). Sajjad et al. (2020) found that women's entrepreneurship boosts economic development and social welfare in 69 countries. However, theories from advanced economies may not apply to non-OECD and emerging economies (Hisrich and Öztürk, 1999). Rashid and Ratten (2020) noted that women in SAARC countries often balance family and business, and Anderson and Ojediran (2022) highlighted that necessity often drives women's entrepreneurship in developing countries.

Kyrgyzstan, a landlocked Central Asian country that gained independence in 1991, has a population of 6.8 million and a GDP of USD 10.9 billion. It is classified as a lower-middle-income country with a life expectancy of 71.8 years (World Bank, 2022). Ranked 118th in human development, Kyrgyzstan has labour participation rates of 42.1 % for women and 71.7 % for men (UNDP, 2022). The World Economic Forum's Global Gender Gap Report (2023) places Kyrgyzstan 84th overall, with better performance in "Economic Participation and Opportunity" (71st) and "Educational Attainment" (29th). In 2022, women's employment was 48.4 % compared to 77.2 % for men, with urban women employed at 53.3 % versus 45.3 % in rural areas (NSCKR, 2023). Furthermore, gender disparity is evident in statistics concerning business leaders. In

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2023, women's representation among business leaders was notably low at 28.75 per cent, compared to 71.25 per cent for men (NSCKR, 2024). Enhancing women's economic activity is crucial for Kyrgyzstan's development.

There is a lack of publications on women's empowerment and entrepreneurship in Kyrgyzstan. Since independence, the country has ratified over 50 international treaties and adopted laws to protect women's rights, yet discrimination persists (Erisheva, 2023). While development interventions can boost women's empowerment, they may be less effective without financial resources or in cases where empowerment levels are already high (Kosec, 2022). A typical Kyrgyz woman entrepreneur is aged 40–50, married with children, and balances work with household duties, often starting her business after 30 following a varied career (Cabinet of Ministers of the Kyrgyz Republic, 2021).

This study contributes to academic scholarship and policymaking by exploring the interplay between women's empowerment, entrepreneurship, and other factors in Kyrgyzstan, addressing the current research gap.

## Literature review

### Women empowerment and women entrepreneurship

In the scholarly literature, the relationship between entrepreneurship and economic growth is often framed by the premise that small firms act as the engine of economic development (Beck and Demirguc-Kunt, 2006) and play a crucial role in emerging private sectors within formerly planned economies (Hallberg, 2001). Despite numerous initiatives supporting women's entrepreneurship, there remains a notable gap in research specifically addressing women's empowerment and entrepreneurship within Central Asian economies.

One significant area of debate in this field concerns the performance disparity between male and female entrepreneurs. The “constraint-driven gap” perspective posits that female entrepreneurs encounter substantial gender-specific obstacles that restrict their performance (Bardasi, Sabarwal, & Terrell, 2011). These barriers often include challenges in accessing credit, forming business networks, and navigating bureaucratic processes. Research indicates that while these gaps persist, they tend to narrow as the level of economic development increases (Kelley et al., 2011).

This discussion aligns with the broader global socio-economic transformations that have significantly altered the social and economic roles of women worldwide. Traditionally, studies on women's empowerment have focused on metrics such as education, income, and property ownership. For instance, Andriuta and Kartašova (2012) explored two distinct categories of female empowerment: decision-making capacity and social gender equality. This framework highlights three interconnected dimensions of empowerment: resources, actions, and accomplishments, as highlighted by Gupta et al. (2017). Such research consistently demonstrates that women have the potential to make a significant impact on entrepreneurship and economic progress.

Globally, the Global Entrepreneurship Monitor (2019) reports that women's participation in the initial stages of entrepreneurship is approximately three-quarters that of men. Moreover, female entrepreneurs are less likely than their male counterparts to own established businesses. When women are empowered through access to assets, resources, and markets, they often become entrepreneurs, contributing to job creation. This perspective of women's empowerment, which does not challenge the unequal patriarchal social, economic, and political systems, is prevalent in international development (Buisson et al., 2022). Nevertheless, startups and enterprises led by women have been shown to play a vital role in reducing unemployment and driving economic growth (Hechavarria et al., 2019). Entrepreneurship boosts women's visibility and recognition. Factors like literacy, NGO membership, training, and personal business income enhance women's emancipation despite social and cultural barriers and resource access difficulties (Naveen et al., 2023). By providing women with the opportunity to utilise their income for household and family objectives, entrepreneurship can enhance both physical and financial well-being for their families and children, highlighting its profound impact on economic and social outcomes.

H1: Women entrepreneurship has a positive and significant impact on women empowerment

### Access to Finance's Effect on Women Empowerment and Women Entrepreneurship

Ayyagari et al. (2016) define financial constraints as firms being unable to secure necessary funds, thus forgoing investment projects with positive net present value. This issue is particularly severe for small firms, where better access to finance can boost employment. In Central Asia, entrepreneurs in more developed

countries face fewer financial constraints (Nizaeva & Coskun, 2021). Financial system structures and lending infrastructure critically influence access to finance for small firms (Berger & Udell, 2006).

In emerging economies, high capital costs, substantial collateral requirements, and elevated bank charges exacerbate financial constraints for SMEs, making it difficult for them to secure bank loans, especially long-term ones (Mateev et al., 2013). The literature suggests that the financing constraints faced by SMEs are influenced by both firm-specific characteristics and country-specific factors. Given the relatively weak development of the financial system and banking regulations in Kyrgyzstan, it is plausible to hypothesise that women-owned business enterprises are disproportionately affected.

Ownership is a crucial factor influencing the financing constraints of small firms (Nizaeva & Coskun, 2019). In Central Asia, stringent collateral requirements often lead to loan application rejections for small firms, which typically lack substantial tangible assets. Larger firms, with more debt and business collateral, have an advantage (Dias Duarte et al., 2017). This absence of collateral particularly affects women-owned enterprises. Majumdar et al. (2023) identify limited funding and balancing responsibilities as primary challenges for women entrepreneurs. Coleman (2002) argues that funding discrimination against women is not due to gender itself but to characteristics of women-owned businesses, such as small size, poor credit histories, and lack of collateral. Thus, while gender may not directly influence funding decisions, the associated business characteristics do play a significant role.

H2: Access to Finance has a positive and significant impact on women empowerment

H3: Women Entrepreneurship has a mediating role

#### **Technical Know-how's Effect on Women Empowerment and Women Entrepreneurship**

Technology significantly enhances women's capacities and resources in outreach, education, lifestyle management, health, and barrier understanding (Mackey and Petrucka, 2021). It allows women to control their labour time and social value, reduce household labour, and generate additional income through alternative activities (Twagira, 2020). Malhotra et al. (2009) found that technologies like the Internet, cell phones, alternative energies, and agricultural innovations empower women in multiple ways. The contraceptive pill gave American women reproductive control, while ICT increased revenues for poor female entrepreneurs and improved household well-being in Bangladesh.

The impact of digital solutions on productivity and innovation is increasingly evident across economic sectors. Gaglio et al. (2022) found that social media and mobile internet use positively affect innovation and labour productivity, highlighting the need for accessible digital technologies. Sujarwo et al. (2022) showed that social media can empower women by training them in content creation and advertising. Additionally, Niroo & Crompton (2022) found that technology enables women to gain health knowledge and postpone pregnancy through egg freezing.

H4: Technical know-how has a positive and significant impact on women empowerment

H5: Women Entrepreneurship has a mediating role

#### **Financial Literacy's Effect on Women Empowerment and Women Entrepreneurship**

Rachmadini and Damayanti (2023) assessed financial literacy through various dimensions, including financial planning, financial decisions, financial crises, and financial inclusion. Their findings reveal that financial planning, informed financial decisions, and financial inclusion have a positive impact on women's empowerment. These factors contribute to economic growth, poverty reduction, and create opportunities for women to start businesses and achieve economic independence. Conversely, financial crises were found to negatively affect women's empowerment, leading to increased poverty and job losses.

Similarly, Kumari et al. (2020) confirm the link between financial literacy and women's empowerment, demonstrating that financial literacy plays a significant role in managing income and expenditure, allocating time effectively, enhancing financial well-being (particularly among rural women), and fostering community leadership. Koomson et al. (2021) showed that financial literacy training is important for women's empowerment. However, the impact of training is weaker when it is offered alone, so authors suggested to combine the financial literacy training with women's empowerment module. Impact of the combined training is insignificant after 51 years and above. Moreover, financial literacy training gives better results if it is offered to younger rather than older.

H6: Financial literacy has a positive and significant impact on women empowerment

H7: Women Entrepreneurship has a mediating role

#### **Methodology**

The conceptual model for this study is obtained from a paper by Andriamahery and Qamruzaman (2022). According to the conceptual model, access to finance, technical know-how, the financial liter-

acy of women, and women entrepreneurship impact women's empowerment. Additionally, there is a mediating role played by women entrepreneurship on the relationship between access to finance, technical know-how, and women's financial literacy and women's empowerment. The proxy indicators for each latent variable in the model are obtained from the same study and definitions are displayed in Table 1. The variable for women's empowerment is measured with six latent constructs, women's entrepreneurship by 5 constructs, access to finance by 5 constructs, and technical know-how and financial literacy measured by 5 and 4 constructs, respectively. The proxies are measured via a five-scale Likert scale.

Table 1 Variable definitions

Women's empowerment (WEMP)	Measurement of women's capacity to define their possibilities, choices, and power to act, and to use their ability to be courageous and believe in themselves.
Women entrepreneurship (WENT)	Includes capacity and skill development with innovation, managerial competency, and technical know-how for managing business enterprises.
Access to finance (AtF)	Measures the ability of women and their enterprises to use financial products, including loans, deposits, insurance, other payments, and risk management services.
Technical know-how (TECH)	Refers to technical knowledge, including scientific and technological advancements.
Financial literacy (FL)	Measures understanding and ability to use finance, as well as knowledge, attitude, and skills related to finance.

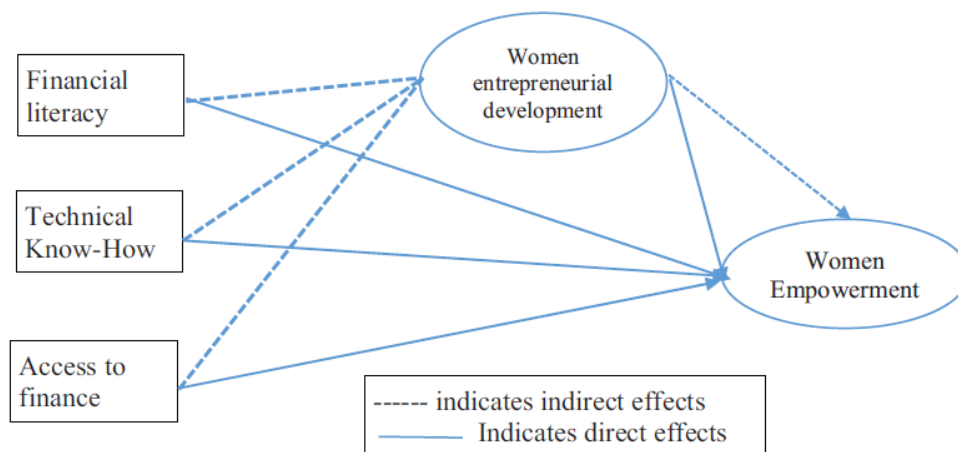


Figure 1. Conceptual Model

Source: *Andriamahery and Qamruzzaman (2022)*

**Data and descriptive statistics**

The data used for the analysis was collected through a structured questionnaire consisting of two sections. The first part focused on demographic characteristics such as education level, age, and work experience. The second part consisted of business-related questions, including about enterprise size, year of establishment, and industry. The second section also contained statements evaluating the variables relating to women's empowerment (WEMP), women entrepreneurship (WENT), access to finance (AtF), technical know-how (TECH), and financial literacy (FL). Respondents are female entrepreneurs running their business in all regions of Kyrgyzstan. The data was collected from June to November 2023.

**Method: Structural equation modelling**

To investigate the causal effects of the women entrepreneurship (WENT), access to finance (AtF), technical know-how (TECH), and financial literacy (FL) variables on women's empowerment (WEMP), and the mediating effect of women's entrepreneurship on women's empowerment, we use partial least squares structural equation modelling (PLS-SEM). Given the ability of PLS-SEM to work efficiently with a much wider range of samples and its less restrictive assumptions about the data (Hair, Ringle, & Sarstedt, 2011), it is an appropriate method for examining the research objective of this paper. Moreover, PLS-SEM allows for the estimation of complex models with many constructs, indicator variables, and structural paths without im-

posing distributional assumptions on the data (Hair et al., 2019). Based upon its user friendliness, ability to analyse the survey data, and to ascertain the significance levels for loadings and path coefficients, SmartPLS 4 software was employed (Ringle et al., 2022).

### Demographic characteristics of respondents

One-hundred-and-one (101) responses were received from across all regions of the country, one of these was not suitable for evaluation. Almost half of them (49 responses) were from Bishkek—the capital, and 33 responses were from the densest administrative unit—Osh oblast, which includes the second biggest city—Osh.

Table 2 Geographic location of respondents

Administrative units	Number of responses	Number of Women Heads of Business Entities at the beginning of 2023 (NSCKR, 2024)
Batken oblast	9	15,207
Bishkek city	49	20,526
Chui oblast	3	45,427
Jalal-Abad oblast	0	30,158
Naryn oblast	2	15,644
Osh oblast	30	49,141
Osh city	3	11,516
Talas oblast	1	10,681
Issyk-Kol oblast	3	18,898

The youngest respondent age was 19, while the oldest age was 72; the mean average age of the respondents was 42.8 (with a median age of 43). Year of establishment for the companies where the respondents worked ranged from 1923 to 2023, and the number of employees varied from one to 3000. Kyrgyz law allows anyone to register as an individual entrepreneur and start a business.

## Results

### Reliability

All variables show high Cronbach's alpha reliability levels (above 0.8) but only financial literacy has a Cronbach's alpha above the acceptable level of reliability (above 0.6). Average variance extracted (AVE) values for all variables are acceptable, despite financial literacy having a lower than 0.5 score. However, if the AVE value is less than 0.5 but the CR is more than the acceptable level of 0.6, then the variable is still acceptable (Lam, 2012).

Table 3 Descriptive statistics of constructs

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AtF	0.804	0.805	0.863	0.559
FL	0.600	0.641	0.741	0.435
TECH	0.921	0.921	0.941	0.762
WENT	0.853	0.937	0.889	0.623
WEMP	0.805	0.820	0.859	0.507

All variables have composite reliability values above the acceptable level of 0.7, indicating good internal consistency of the constructs.

### SEM Results

The coefficients of variables were found to be as follows. The original sample weight of the impact of a variable of 0.20 and higher means that a variable could be significant, while T statistics of 1.96 or higher mean the relationship between the two variables is significant. A P value of 0.05 or less also indicates significance (95 % confidence level).

Table 4 Path coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
AtF -> WENT	0,154	0,162	0,099	1,550	0,122
AtF -> WEMP	0,252	0,261	0,111	2,276	0,023
FL -> WENT	0,059	0,094	0,123	0,475	0,635
FL -> WEMP	0,045	0,067	0,183	0,248	0,804
TECH-> WENT	0,561	0,529	0,148	3,789	0,000
TECH -> WEMP	0,184	0,170	0,185	0,997	0,319
WENT -> WEMP	0,174	0,189	0,140	1,240	0,216

As reported in Table 4, variables AtF and TECH are found to be significant, all others were found not to be significant. There is a significant relationship between access to finance and women's empowerment, which means that those women who have better access to finance are more empowered. Women with fewer financial constraints have more possibilities, choices, and power to act, and to use their ability to be courageous and believe in themselves. Furthermore, there is a significant relationship between technical know-how and women's entrepreneurship. Women who have technological knowledge have the capacity and skill, alongside innovation, managerial competency, and technical know-how to manage business enterprises.

Table 5 Total effects

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
AtF -> WENT	0,154	0,162	0,099	1,550	0,122
AtF -> WEMP	0,279	0,294	0,113	2,464	0,014
FL -> WENT	0,059	0,094	0,123	0,475	0,635
FL -> WEMP	0,056	0,088	0,178	0,313	0,755
TECH -> WENT	0,561	0,529	0,148	3,789	0,000
TECH -> WEMP	0,282	0,265	0,168	1,676	0,094
WENT -> WEMP	0,174	0,189	0,140	1,240	0,216

Only AtF and TECH are significant, all others are not significant.

Table 6 Total indirect effects

	Original sample (O)	Sample mean (M)	Standard deviation	T statistics ( O/STDEV )	P values
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			(STDEV)		
AtF -> WEMP	0,027	0,033	0,035	0,773	0,440
FL -> WEMP	0,010	0,021	0,036	0,280	0,779
TECH -> WEMP	0,098	0,095	0,078	1,246	0,213

All total indirect effects were found to be not significant.

Table 7 Specific indirect effects

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ((O/STDEV))	P values
AtF -> WENT -> WEMP	0,027	0,033	0,035	0,773	0,440
FL -> WENT -> WEMP	0,010	0,021	0,036	0,280	0,779
TECH -> WENT -> WEMP	0,098	0,095	0,078	1,246	0,213

All variables with specific indirect effects were shown not to be significant.

Regarding the hypotheses tested in this study, H1 is not significant, which means that women entrepreneurship has not a positive and statistically significant impact on women’s empowerment. Although in the relevant literature, it has been discussed that women entrepreneurship is pathway to empowerment, the link is very complex and multifaceted, which requires multidisciplinary research and discussion. The insignificant relation may be interpreted with traditional and social gender roles, risk aversion of women, skill gaps. Apart from that, there may be economic factors that may serve as also main factor. In many societies, women tend to prioritize family responsibilities over entrepreneurial ambitions, considering entrepreneurship on the second plan. Therefore, in its current stage, women entrepreneurship is not developed enough to positively affect the women empowerment and mediate other factors’ impact on women’s empowerment. Women led business entities may face more financial constraints than their male-lead counterparts, which may be proven by our H2. According to findings, women with better access to finance are likely to be more empowered and have capacity to get benefit of their possibilities, choices, and power to act, and believe in themselves.

As observed, technical know-how has a positive and significant impact on women empowerment (H4). As discussed above, women with knowledge of technology are knowledgeable in other aspects too. As concluded by Twagira (2020), by leveraging technological advancements, women are able to reduce household labour time and generate additional income through alternative activities. In H 5, it worths to conclude that even women with better technical knowledge are not engaged in entrepreneurship, they are relatively more empowered. In other words, even not through entrepreneurship, technologically knowledgeable women are more likely to be empowered.

As noted by (Nizaeva & Coskun, 2021), financial literacy is another challenge that hinder most small business owners. Additionally, in Kyrgyzstan, the share of families with trouble making ends due to credits is high. Therefore, although in the relevant literature the link between financial literacy and women’s empowerment is positive, the level of women financial literacy is not enough to enhance the empowerment (H6, H7).

**Conclusion**

In this study I tried to understand the determinants of women entrepreneurship in Kyrgyzstan. All determinants have positive effects on women’s empowerment. According to our evaluation, the determinant with highest importance is technical and technological knowledge. To enhance women’s empowerment, women should have more access to technology and the knowledge related to it. Next in terms of importance comes access to finance and financial literacy. The findings from this study can offer guidance for the development of future women’s empowerment programs in the country and act as a basis for further women entrepreneurship studies.

As it is inevitable in most of micro data, the analysis of this research is also subject to some limitations. For the empirical analysis of the research, the primary data was used that collected by self-administered sur-

vey. In economies with lack of household-level, firm-level, individual-level data, using primary data by survey-based data collection is only solution. However, data collected by such self-administration of respondents are more vulnerable to understandings and perceptions of respondents and findings may be subjective. Despite such shortcoming, due to best of my knowledge, it is one of the pioneering studies that research this topic.

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