



Social and Economic Aspects of Women's Entrepreneurship Development in Central Asian countries

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ABSTRACT

In Central Asian countries, women's entrepreneurial activity is gradually increasing, but its development is accompanied by a number of institutional, economic and socio-cultural constraints. The purpose of this study is to assess the level of influence of social, economic and institutional variables on the level of entrepreneurial activity of women in Central Asian countries. The empirical database covers data for Kazakhstan, Kyrgyzstan, Uzbekistan and Tajikistan for 2015-2024, based on information from the World Bank, reports from the Global Entrepreneurship Monitor, the Global Gender Gap Index of the World Economic Forum and national statistical agencies. The results of the study showed a steady increase in the proportion of women among entrepreneurs in all the countries under consideration: in Kazakhstan, the indicator increased from 40.1% in 2015 to 46.5% in 2024, in Kyrgyzstan — from 37.2% to 43.1%, in Uzbekistan — from 28.7% to 38.2%, in Tajikistan — from 22.5% to 29.3%. The results of the panel regression showed a statistically significant positive impact of women's labor force participation ($\beta = 0.38$; $p = 0.002$), Internet penetration ($\beta = 0.29$; $p = 0.005$), access to credit ($\beta = 0.34$; $p = 0.009$) and GDP per capita ($\beta = 0.21$; $p = 0.017$) for the development of women's entrepreneurship; the explanatory power of the model was $R^2 = 0.64$. The results show that Kazakhstan and Kyrgyzstan demonstrate the highest level of women's involvement in entrepreneurial activity, while Uzbekistan and Tajikistan maintain a more pronounced gender gap in entrepreneurial activity. The results of the study can be used in the development of programs to support small and medium-sized businesses and gender equality policies in Central Asian countries.

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Орталық Азия елдерінде әйелдер кәсіпкерлігін дамытудың әлеуметтік және экономикалық аспектілері

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ТҮЙІН

Орталық Азия елдерінде әйелдердің кәсіпкерлік белсенділігі біртіндеп артып келеді, алайда оның дамуы бірқатар институционалдық, экономикалық және әлеуметтік-мәдени шектеулермен қатар жүрде. Осы зерттеудің мақсаты Орталық Азия елдеріндегі әйелдердің кәсіпкерлік белсенділігі деңгейіне әлеуметтік, экономикалық және институционалдық айнымалылардың ықпал ету деңгейін бағалау болып табылады. Эмпирикалық база Қазақстан, Қырғызстан, Өзбекстан және Тәжікстан бойынша 2015–2024 жылдарды қамтитын деректерді біріктіреді, олар Дүниежүзілік банктің ақпараты, Global Entrepreneurship Monitor есептері, Дүниежүзілік экономикалық форумның Global Gender Gap Index көрсеткіштері және ұлттық статистикалық агенттіктердің деректері негізінде қалыптастырылған. Зерттеу нәтижелері қарастырылған барлық елдерде әйелдер арасындағы кәсіпкерлер үлесінің тұрақты өскенін көрсетті: Қазақстанда бұл көрсеткіш 2015 жылғы 40,1%-дан 2024 жылы 46,5%-ға дейін, Қырғызстанда — 37,2%-дан 43,1%-ға дейін, Өзбекстанда — 28,7%-дан 38,2%-ға дейін, Тәжікстанда — 22,5%-дан 29,3%-ға дейін өсті. Панельдік регрессия нәтижелері әйелдердің жұмыс күшіне қатысу деңгейінің ($\beta = 0.38$; $p = 0.002$), интернеттің таралуының ($\beta = 0.29$; $p = 0.005$), кредиттерге қолжетімділіктің ($\beta = 0.34$; $p = 0.009$) және жан басына шаққандағы ЖІӨ-нің ($\beta = 0.21$; $p = 0.017$) әйелдер кәсіпкерлігінің дамуына статистикалық тұрғыдан мәнді оң әсер ететінін көрсетті; модельдің түсіндіру қабілеті $R^2 = 0.64$ құрады. Алынған нәтижелер Қазақстан мен Қырғызстанда әйелдердің кәсіпкерлік қызметке тартылу деңгейі неғұрлым жоғары екенін, ал Өзбекстан мен Тәжікстанда кәсіпкерлік белсенділіктегі гендерлік алшақтықтың айқынырақ сақталатынын көрсетеді. Зерттеу нәтижелері Орталық Азия елдерінде шағын және орта бизнесті қолдау бағдарламаларын және гендерлік теңдік саясатын әзірлеу кезінде пайдаланылуы мүмкін.

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Социальные и экономические детерминанты развития женского предпринимательства в странах Центральной Азии

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АННОТАЦИЯ

В странах Центральной Азии предпринимательская активность женщин постепенно возрастает, однако её развитие сопровождается рядом институциональных, экономических и социокультурных ограничений. Целью настоящего исследования является оценка уровня влияния социальных, экономических и институциональных переменных на уровень предпринимательской активности женщин в странах Центральной Азии. Эмпирическая база охватывает данные по Казахстану, Кыргызстану, Узбекистану и Таджикистану за 2015–2024 гг., сформированные на основе информации Всемирного банка, отчетов Global Entrepreneurship Monitor, Global Gender Gap Index Всемирного экономического форума и национальных статистических агентств. Результаты исследования показали устойчивый рост доли женщин среди предпринимателей во всех рассматриваемых странах: в Казахстане показатель увеличился с 40,1% в 2015 г. до 46,5% в 2024 г., в Кыргызстане — с 37,2% до 43,1%, в Узбекистане — с 28,7% до 38,2%, в Таджикистане — с 22,5% до 29,3%. Результаты панельной регрессии показали статистически значимое положительное влияние уровня участия женщин в рабочей силе ($\beta = 0.38$; $p = 0.002$), проникновения Интернета ($\beta = 0.29$; $p = 0.005$), доступа к кредитам ($\beta = 0.34$; $p = 0.009$) и ВВП на душу населения ($\beta = 0.21$; $p = 0.017$) на развитие женского предпринимательства; объясняющая способность модели составила $R^2 = 0.64$. Полученные результаты показывают, что Казахстан и Кыргызстан демонстрируют наиболее высокий уровень вовлеченности женщин в предпринимательскую деятельность, тогда как в Узбекистане и Таджикистане сохраняется более выраженный гендерный разрыв в предпринимательской активности. Результаты исследования могут быть использованы при разработке программ поддержки малого и среднего бизнеса и политики гендерного равенства в странах Центральной Азии.

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1. Introduction

In recent decades, women's entrepreneurship has become one of the key factors for sustainable economic development, social inclusion and the formation of innovative entrepreneurial ecosystems. International research shows that women's economic empowerment contributes to increased employment, economic diversification, and growth in gross domestic product. According to World Bank estimates, reducing the gender gap in entrepreneurial activity can significantly increase the economic potential of developing countries and accelerate structural economic transformation (World Bank, 2023).

In Central Asian countries, the development of women's entrepreneurship is becoming particularly relevant in the context of economic modernization, institutional reforms and the expansion of the digital economy. After the collapse of the Soviet Union, the States of the region faced large-scale economic and social transformations, accompanied by the transition to a market economy, the formation of a private sector and the development of entrepreneurial activity. Under these conditions, entrepreneurship has become one of the most important mechanisms for the population's adaptation to new economic realities and a source of job creation.

Women play a significant role in the region's entrepreneurial activity. In recent years, Central Asian countries have seen a steady increase in the number of enterprises headed by women, which is associated with higher levels of women's education, the development of financial institutions, the expansion of digital infrastructure, and the implementation of government programs to support entrepreneurship. According to international organisations, the share of women among entrepreneurs in the region averages about one-third, but significant differences remain across Central Asian countries in both women's involvement in entrepreneurship and business conditions (OECD, 2022; World Bank, 2024).

Despite the positive dynamics, the development of women's entrepreneurship in Central Asian countries is constrained by several institutional, economic, and socio-cultural factors. The most significant barriers include women's limited access to financial resources, lack of entrepreneurial skills, and the influence of traditional gender norms that limit women's economic activity. In many countries in the region, women's entrepreneurial activity is still perceived as secondary to family responsibilities, which may reduce opportunities to scale businesses and enter more capital-intensive markets (Sattar, 2019; Asian Development Bank, 2022).

An additional factor influencing the development of women's entrepreneurship is the heterogeneity of the institutional environment in the countries of the region. Kazakhstan and Kyrgyzstan are characterised by a more developed support system for small and medium-sized businesses and a relatively high level of digitalisation of the economy. At the same time, in Uzbekistan and Tajikistan, women's entrepreneurial activity is more limited by institutional and financial barriers, including limited access to credit resources and less developed entrepreneurial infrastructure (UN Women, 2022; World Economic Forum, 2023).

In recent years, digital technologies have begun to play a significant role in the development of women's entrepreneurship. The expansion of Internet access, the development of e-commerce and digital financial instruments create new opportunities for women

entrepreneurs, allowing them to overcome geographical and institutional constraints. Digital platforms, social networks, and mobile payment systems are becoming important tools for small business development, especially in countries with limited entrepreneurial infrastructure (UNDP, 2022).

Despite growing interest among researchers in women's entrepreneurship, Central Asia remains a relatively underexplored region in international scientific literature. Most existing research focuses on individual countries, primarily Kazakhstan and Kyrgyzstan, while a comparative analysis of women's entrepreneurial activity across the region remains underdeveloped. In addition, relatively few studies in the scientific literature use quantitative methods to assess the impact of economic and institutional factors on the development of women's entrepreneurship in Central Asia. In this regard, the purpose of this study is to analyse the current state of women's entrepreneurship in Central Asian countries, identify key barriers and factors of its development, and assess the impact of economic and institutional variables on women's entrepreneurial activity.

2. Literature review

The study of women's entrepreneurship as a distinct field of research has expanded rapidly since the late twentieth century and has generated a substantial theoretical foundation. Scholars analyse this phenomenon through a variety of theoretical perspectives, each contributing to a deeper understanding of the specific factors shaping women's entrepreneurial activity. Institutional theory, developed by North, considers both formal and informal institutions as key determinants of the economic behaviour of individuals and organisations (North, 1990). In the context of women's entrepreneurship, this approach is particularly important, since it is the institutional environment - legislative norms, cultural traditions, and social attitudes - that largely determines the opportunities and limitations for women in business. Welter and Smallbone developed this approach in relation to entrepreneurship in transition economies, showing that institutional "voids" and imperfections of formal institutions create both barriers and specific opportunities for entrepreneurs (Welter & Smallbone, 2011).

Ajzen's theory of planned behavior explains the formation of entrepreneurial intentions through three components: attitudes towards entrepreneurial behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). Regarding women's entrepreneurship in developing countries and countries with economies in transition, this theory helps explain why, even when formal business opportunities exist, women are much less likely to be entrepreneurial. Empirical research by Iakovleva and colleagues shows that subjective norms exert a significantly stronger influence on women's entrepreneurial intentions in post-Soviet countries than in Western European economies (Iakovleva et al., 2013). These findings suggest that socio-cultural factors play a crucial role in shaping women's entrepreneurial aspirations in Central Asia.

The resource theory of entrepreneurship focuses on access to key resources - financial, human, social, and informational - as the basis for successful entrepreneurial activity (Alvarez & Busenitz, 2001). Brush and colleagues proposed a gender-oriented framework model of women's entrepreneurship, supplementing the classic "3M" (market, money, management) model with two additional elements, such as "motherhood" and "meso or macro environment" (Brush et al., 2009). This "5M" model reflects the specific factors influencing women's entrepreneurial activity and

emphasises that women's entrepreneurship cannot be adequately explained by theories developed primarily because of men's experience.

Feminist economic theory adds an additional dimension to the analysis of women's entrepreneurship by considering gender relations as a structural factor of economic inequality (Ahl, 2006). Ahl conducted a critical analysis of the discourse in women's entrepreneurship research and showed that many studies reproduce gender stereotypes, presenting women entrepreneurs as a "deviation from the norm", where male entrepreneurship is the norm. This conclusion has important methodological significance for research in Central Asia, where gender stereotypes are particularly persistent.

Central Asia represents a unique context for the study of women's entrepreneurship, shaped by the interaction of several cultural and institutional layers, including pre-colonial Islamic heritage, Soviet modernization and post-Soviet transformation. Kandiyoti introduced the concept of the "Soviet gender paradox", which describes a situation in which formal gender equality during the Soviet period coexisted with the persistence of patriarchal structures at the family and community levels (Kandiyoti, 2007). According to Kandiyoti, Soviet modernisation did not eliminate traditional gender hierarchies but rather transformed them, allowing these structures to re-emerge in new forms after the collapse of the USSR. This historical legacy is crucial for understanding the current dynamics of women's entrepreneurship in the region.

Welter and colleagues conducted a large-scale study of entrepreneurial activity in post-Soviet countries, including Central Asian states, and found that the Soviet legacy has a dual impact on women's entrepreneurship (Welter et al., 2017). On the one hand, the high level of education and professional qualifications of women inherited from the Soviet system creates significant human capital. On the other hand, the lack of entrepreneurial traditions, paternalistic expectations from the state and the revival of traditional gender roles form serious barriers.

Aidis, Welter, Smallbone, and Isakova (2007) study women's entrepreneurship in post-Soviet countries using Lithuania and Ukraine as examples, found that women entrepreneurs in transition economies face double discrimination: as representatives of small businesses in general and as women in particular (Aidis et al., 2007). The authors have shown that corruption, bureaucratic barriers, and distrust on the part of financial institutions affect women entrepreneurs to a much greater extent than they affect men. Although this study was conducted in Eastern Europe, its findings are relevant to the Central Asian context, where the institutional conditions are largely similar.

In her research for the World Bank, Sattar analyzed opportunities for men and women in Europe and Central Asia and concluded that the gender gap in entrepreneurial activity in the region is due not so much to differences in human capital as to unequal access to financial resources and business-related social networks (Sattar, 2019). The author notes that in Central Asia, this problem is aggravated by the traditional gender-based division of social networks, in which business contacts and connections are concentrated in male communities.

Yessengeldin and colleagues conducted one of the few studies directly devoted to women's entrepreneurship in Kazakhstan and found that, despite a relatively favorable institutional environment and an active government support policy, women entrepreneurs in Kazakhstan continue to face significant challenges (Yessengeldin et al., 2020). The authors found that the key barriers are limited access to finance, insufficient entrepreneurial skills, and persistent gender stereotypes in the business environment. At the same time, the study showed that Kazakhstan has

the highest rates of women's entrepreneurial activity among Central Asian countries, which is associated with a more developed institutional infrastructure to support entrepreneurship.

Limited access to finance is recognized by most researchers as a key barrier to women's entrepreneurship worldwide, and the countries of Central Asia are no exception. Brush and colleagues, in their large-scale study of entrepreneurial ecosystems through a gender lens, have shown that financial institutions systematically underestimate women's business projects, which manifests itself in higher interest rates, stricter collateral requirements, and more frequent loan refusals (Brush et al., 2018). The authors found that this problem is structural in nature and cannot be solved solely by creating specialized credit programs for women.

In its report on women's entrepreneurship in Central Asia, the Asian Development Bank provided a detailed analysis of financial barriers in each country in the region (Asian Development Bank, 2022). According to the report, only 18% of women entrepreneurs in Tajikistan have access to formal bank loans, compared with 34% of men. In Uzbekistan, the gender gap in access to credit is somewhat smaller, but it remains significant. The authors of the report attribute this situation not only to discriminatory practices by financial institutions but also to institutional factors: in many cases, women do not have independent access to collateral registered in their husbands' or male relatives' names.

The World Bank has repeatedly noted in its analytical reports that the financial gap between men and women in entrepreneurship in Central Asia is driven by both demand and supply factors (World Bank, 2023). On the one hand, women are less likely to apply for loans due to insecurity, lack of financial literacy and fear of debt obligations. On the other hand, the banking system is insufficiently adapted to the needs of women entrepreneurs, offering standard credit products that do not take into account the specifics of women's businesses, which are often characterized by a smaller scale, slower growth and a focus on the service sector.

Terjesen and Amorós, studying women's entrepreneurship in developing countries, found that financial barriers are particularly significant during the transition from microbusiness to small and from small to medium-sized businesses, the so-called "missing middle problem" (Terjesen & Amorós, 2010). The authors note that, in developing countries, including the Central Asian states, this transition is critical for scaling up women's businesses, and it is at this stage that the gender gap is most acute.

Despite the growing body of research on women's entrepreneurship in transition economies, empirical evidence from Central Asia remains limited and fragmented. Existing studies primarily focus on institutional barriers or financial constraints, while comprehensive analyses that integrate institutional, socio-cultural, and financial factors in the context of Kazakhstan and the wider Central Asian region remain scarce. Therefore, this study aims to address this gap by examining the key determinants of women's entrepreneurship in Central Asia using an integrated analytical framework.

3. Materials and methods

The present study adopts a comprehensive interdisciplinary approach that combines comparative analysis, statistical methods, and econometric modelling. This approach enables the identification of both quantitative and qualitative patterns in the development of women's entrepreneurship in Central Asian countries. The study includes four countries of Central Asia: Kazakhstan, Kyrgyzstan, Uzbekistan and Tajikistan. The analysis covers the period 2015–2024,

which makes it possible to examine the dynamics of women's entrepreneurship development in the context of economic transformation and digitalization processes in the region. The dataset consists of 40 observations (4 countries for 10 years).

The empirical basis of the research includes statistical data obtained from international and national sources. The main sources of information are the World Bank database (World Development Indicators), Global Entrepreneurship Monitor (GEM) reports, the Global Gender Gap Index of the World Economic Forum, and statistical data from national statistical agencies of Central Asian countries.

For the empirical analysis, indicators reflecting the institutional, economic and technological conditions of entrepreneurial development were selected. The key variables include the share of women among entrepreneurs, women's participation in the labor force, internet penetration, access to credit resources and GDP per capita.

To quantify the influence of key socio-economic factors on women's entrepreneurial activity, a panel econometric model was estimated. The model allows analysing both cross-country differences and temporal dynamics in the development of women's entrepreneurship. The model specification is presented by formula (1):

$$FemaleEnt_{it} = \alpha + \beta_1 Labor_{it} + \beta_2 Internet_{it} + \beta_3 Credit_{it} + \beta_4 GDP_{it} + \varepsilon_{it} \quad (1)$$

where:

FemaleEnt_{it} – share of women among entrepreneurs in country *i* in year *t*;

Labor_{it} – women's participation rate;

Internet_{it} – internet penetration rate;

Credit_{it} – access to credit;

GDP_{it} - GDP per capita;

i – country index;

t – time period (year).

The proposed model evaluates how structural socio-economic factors influence the development of women's entrepreneurship. Female labour force participation reflects the availability of human capital and the general involvement of women in economic activity. Internet penetration is included to capture the role of digital infrastructure in expanding economic opportunities and facilitating access to information and markets. Access to credit reflects the financial conditions under which women entrepreneurs operate. Financial constraints are widely recognised in the literature as one of the key barriers to women's entrepreneurship. GDP per capita is used as a control variable that reflects the general level of economic development and the institutional capacity of the economy.

The model was estimated using the fixed effects estimator. This approach allows controlling for country-specific characteristics that may influence women's entrepreneurship but are not directly observable, such as cultural norms, institutional frameworks and historical factors. However, the study has several limitations related to the availability and comparability of statistical data across Central Asian countries, especially regarding informal entrepreneurship, which remains widespread in the region.

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4. Results

Women's entrepreneurship in Central Asia is expanding, yet this growth remains uneven across countries and sectors. Cross-country variation is shaped by the interaction of financial access, institutional support, and socio-cultural conditions. Kazakhstan demonstrates the most favorable overall profile, while Tajikistan remains the most constrained case. Because comparable time-series and sectoral data are not available for all five countries, the dynamic, sectoral, and barrier analyses below focus on Kazakhstan, Kyrgyzstan, Uzbekistan, and Tajikistan.

Key indicators of women's entrepreneurial activity-including the share of women among sole proprietors and SME managers, access to credit, and the Gender Gap Index-are presented in Table 1.

Table 1. Indicators of women's entrepreneurship in Central Asian countries.

Indicator	Kazakhstan	Uzbekistan	Kyrgyzstan	Tajikistan	Turkmenistan
Percentage of women among sole proprietors, %	42	32	38	25	31
Percentage of female SME managers, %	29	18	24	12	17
Access to credit (index, 0-100)	65	45	52	35	40
Gender Gap Index (WEF)	0.710	0.691	0.697	0.653	0.688

Note: compiled by the authors based on data from the World Bank (2023), WEF (2023).

The data reveal substantial regional heterogeneity. Kazakhstan combines the highest levels of women's representation with the strongest credit access, suggesting that business activity is most developed where institutional and financial conditions are most supportive. Kyrgyzstan shows relatively strong participation, but weaker credit access, which limits expansion opportunities. Uzbekistan and Tajikistan lag on most indicators, reflecting not only economic factors but also institutional and social constraints (OECD, 2022; Asian Development Bank, 2021). Overall, the scale of women's entrepreneurship depends less on demographic participation alone than on the broader quality of the business environment.

The proportion of women among entrepreneurs over the past decade is presented in Table 2.

Table 2. Proportion of women among entrepreneurs in Central Asian countries for 2015-2024, in percentage.

Country	2015	2017	2019	2021	2024
Kazakhstan	40.1	41.5	42.8	44.3	46.5
Kyrgyzstan	37.2	38.4	39.6	41.2	43.1
Uzbekistan	28.7	30.1	32.4	35.7	38.2
Tajikistan	22.5	23.8	25.9	27.4	29.3

Note: compiled by the authors.

A stable upward trend is evident across all four countries, confirming that women's entrepreneurship is a regional pattern. However, trajectories differ in scale and speed. Kazakhstan maintained the highest level throughout, reflecting cumulative institutional advantages (Bureau of National Statistics of Kazakhstan, 2024). Uzbekistan recorded the fastest relative increase (from 28.7% to 38.2%), indicating a catch-up dynamic driven by recent reforms (OECD, 2022). Kyrgyzstan demonstrated steady but moderate growth, supported by the development of the microfinance system (Asian Development Bank, 2021). Tajikistan's low starting point and slower pace mean the gap with regional leaders remains substantial, constrained by institutional and socio-cultural factors (UN Women, 2022). Progress is evident, but convergence is incomplete.

Growth concentrated in low-value-added sectors has limited developmental effects. The sectoral distribution of women-led enterprises is presented in Table 3.

Table 3. Industry structure of enterprises headed by women, in percentage.

Branch	Kazakhstan	Kyrgyzstan	Uzbekistan	Tajikistan
Trading	35	41	38	42
Services	32	29	27	24
Education and social services	12	10	11	9
Agricultural industry	9	13	16	18
Production	7	5	6	4
IT and innovation	5	2	2	1

Note: compiled by the authors.

Women-led businesses concentrate primarily in trade and services across all countries. This pattern helps explain the observed growth, as these sectors have lower entry barriers and capital requirements (Brush et al., 2009; Minniti & Naudé, 2010). However, it also reveals a structural limitation: expansion in numbers does not automatically imply diversification or higher productivity.

Kazakhstan has the most diversified profile, with stronger participation in services and a slightly higher presence in IT (Bureau of National Statistics, 2024). Tajikistan and Kyrgyzstan remain more concentrated in trade, while Uzbekistan and Tajikistan show larger agricultural components. Manufacturing and innovation remain marginal across the region, consistent with patterns observed in other developing economies (Asian Development Bank, 2021; World Bank, 2023). The central regional challenge is therefore not only to increase participation but also to shift women's entrepreneurship toward more productive sectors.

Limited access to finance emerges as the most persistent constraint across the region. Female entrepreneurs face greater difficulties obtaining bank loans due to a lack of collateral, limited financial information, and higher risk assessments by financial institutions (World Bank, 2023; IFC,

2021). The effects are especially strong in Uzbekistan and Tajikistan, where financial barriers overlap with weaker market access and stronger socio-cultural restrictions.

The comparative assessment of constraints is presented in Table 4.

Table 4. Main barriers to women's entrepreneurship in Central Asia.

Barrier	Kazakhstan	Kyrgyzstan	Uzbekistan	Tajikistan
Limited access to financing	high	high	Very high	very high
Social and cultural norms	medium	high	high	very high
Lack of entrepreneurial skills	medium	high	high	high
Limited access to markets	medium	medium	high	high
Limited access to digital technologies	low	medium	high	high

Note: compiled by the authors.

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This interaction is analytically significant: no single barrier fully explains low participation, but the cumulative effect of multiple constraints does. In Kyrgyzstan, financing and skills gaps restrict scaling despite relatively widespread business activity (Asian Development Bank, 2021). In Tajikistan, the simultaneous presence of financial, digital, and social barriers explains slower progress (Kandiyoti, 2007; Neumann, 2020). Kazakhstan stands out not because constraints are absent, but because they are less severe and less mutually reinforcing. Digital inequality also has a notable impact: access to digital infrastructure remains limited in Kyrgyzstan and Tajikistan, especially in rural areas (ITU, 2023; UNDP, 2022). Women's entrepreneurship is thus shaped by a barrier system rather than isolated obstacles.

The main enabling factors are summarised in Table 5.

Table 5. Key drivers of women's entrepreneurship development in Central Asian countries.

Factor	Kazakhstan	Kyrgyzstan	Uzbekistan	Tajikistan
Government programs	+++	++	++	+
Digital infrastructure	+++	++	++	+
Access to finance	++	+	++	+
Socio-cultural environment	++	+	++	+
International support	+++	++	+++	++

+++ strong influence; ++ moderate influence; + weak influence.

Note: compiled by the authors.

The comparative assessment presented in Table 5 demonstrates noticeable differences in the key drivers of women's entrepreneurship development across Central Asian countries. Kazakhstan shows the strongest institutional and infrastructural support, particularly in terms of government programs and digital infrastructure development. This reflects the relatively advanced institutional environment and active state policies aimed at supporting entrepreneurship and digital transformation. In contrast, Kyrgyzstan and Tajikistan demonstrate a more limited level of institutional and financial support, which may constrain the expansion of women's entrepreneurial activity. The lower levels of access to finance and weaker socio-cultural support structures indicate the persistence of structural barriers affecting women entrepreneurs in these countries.

Uzbekistan occupies an intermediate position, where several key drivers, including international development support and access to financial resources, demonstrate a relatively higher level of influence.

Uzbekistan's improving trajectory appears linked to strengthened state support, including the Women's Entrepreneurship Support Fund established in 2019, as well as substantial international involvement (OECD, 2022). Kyrgyzstan relies more heavily on microfinance and external programs, which promote entry but do not fully remove structural constraints (Asian Development Bank, 2021). International organizations, including the Asian Development Bank, EBRD, UNDP, and USAID, contribute through programs aimed at expanding financial inclusion and developing entrepreneurial competencies (EBRD, 2023). Tajikistan has the weakest driver configuration, corresponding to its lower indicators. Country differences are best understood as the balance between enabling and constraining conditions.

To assess the relative importance of these factors, a panel regression was estimated for 2015–2024 with the proportion of women among entrepreneurs as the dependent variable (Table 6).

Table 6. Panel regression results for the determinants of women's entrepreneurship.

Variable	β	Std. Error	p-value
Women's participation in the workforce	0.38	0.11	0.002
Internet penetration	0.29	0.09	0.005
Access to loans	0.34	0.12	0.009
GDP per capita	0.21	0.08	0.017
The constant	4.62	1.31	0.001
Statistic Value			
$R^2 = 0.64$			

Note: compiled by the authors.

All coefficients are positive and statistically significant. Women's labour force participation shows the strongest effect, indicating that entrepreneurship is most prevalent where women are already economically integrated, consistent with findings that employment forms the basis for entrepreneurial initiatives (Minniti & Naudé, 2010; Iakovleva et al., 2013). Access to credit also has a large coefficient, supporting the conclusion that finance is a central enabling factor (World Bank, 2023; Asian Development Bank, 2021).

Internet penetration is likewise significant: a 10% increase in Internet access is associated with approximately 2.9 percentage points higher female entrepreneurship, confirming the role of digital platforms in reducing entry barriers (Dy et al., 2017; ITU, 2023). GDP per capita has the smallest coefficient, implying that general economic development matters but is less decisive than targeted improvements in inclusion, finance, and digital access.

With $R^2 = 0.64$, the model explains a substantial share of cross-country variation, reinforcing the interpretation that uneven development is structurally grounded rather than incidental. The spatial distribution of women's entrepreneurship in Central Asian countries is shown in Figure 1.

The comparative analysis reveals a clear regional pattern. Kazakhstan has the most favorable environment, combining strong state support, wider financial access, and advanced digital infrastructure (Bureau of National Statistics of Kazakhstan, 2024; UNDP, 2022). Kyrgyzstan occupies an intermediate position: participation is relatively high, but structural constraints limit business upgrading (Asian Development Bank, 2021; OECD, 2022).

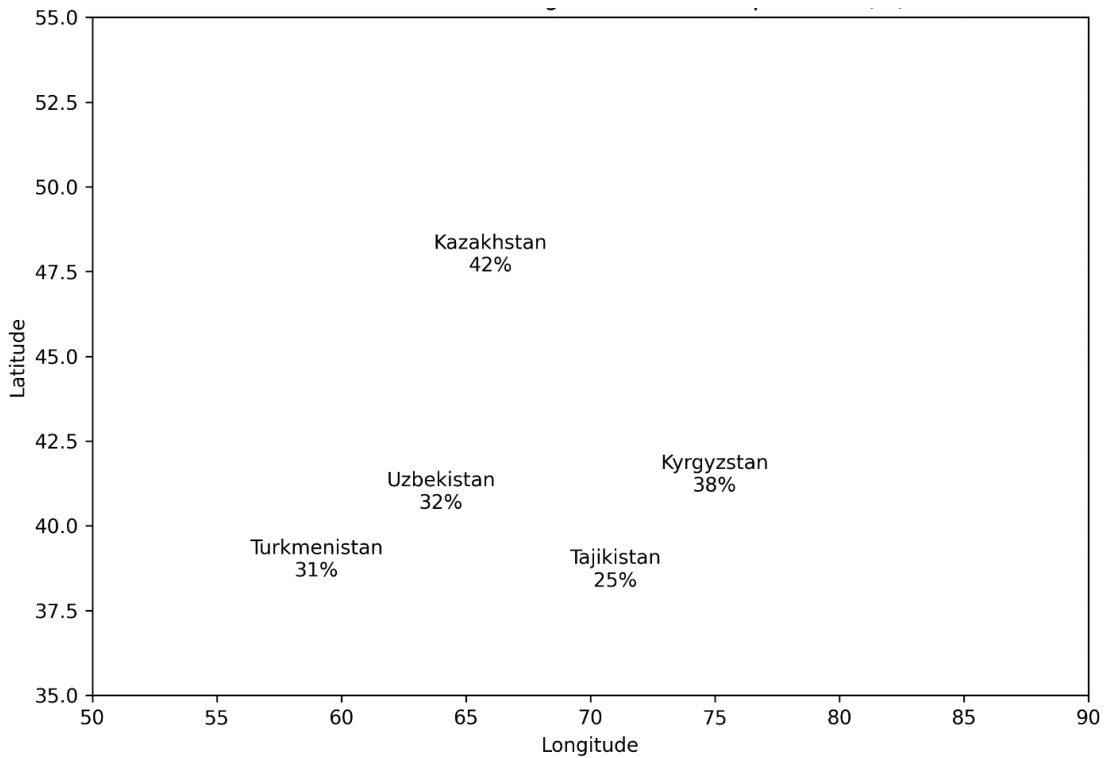


Figure 1. Share of women among entrepreneurs in Central Asian countries, in percentage.

Uzbekistan demonstrates the most visible catch-up trend, reflecting recent reforms and expanding support mechanisms (OECD, 2022). Tajikistan remains the least favorable case due to combined financial exclusion, limited digital access, and stronger socio-cultural restrictions (Neumann, 2020; Kandiyoti, 2007).

Higher levels of entrepreneurship correspond to countries with stronger financial inclusion, digital connectivity, and institutional support; lower levels are associated with the simultaneous presence of multiple barriers. The key regional divide lies not only in how many women enter business, but in whether conditions allow them to move beyond low-entry, low-value-added activities toward more sustainable and scalable entrepreneurship (Brush et al., 2009; Welter & Smallbone, 2011).

5. Discussion

The results of the study confirm that the development of women's entrepreneurship in Central Asian countries is influenced by a complex of institutional, economic and socio-cultural factors. A comparison of statistical data, the sectoral structure of entrepreneurial activity and the results of econometric analysis allows us to draw several important conclusions about the nature and dynamics of women's entrepreneurship in the region.

First, the results confirm the conclusions of international studies that women's participation in entrepreneurship is closely related to the institutional environment and access to economic resources. According to D. North's institutional theory, entrepreneurial activity is determined by a system of formal and informal institutions, including the legal system, the state's economic policy,

and social norms (North, 1990). In Central Asia, these institutions are unevenly developed, which explains differences in women's entrepreneurship development across the region.

Thus, Kazakhstan demonstrates the most favorable institutional environment for the development of women's business due to a combination of government support for entrepreneurship, a developed financial infrastructure and a high level of digitalization of the economy. This is consistent with the results of studies by the World Bank and the Asian Development Bank, which emphasize the key role of institutional reforms and programs to support small and medium-sized businesses in stimulating women's entrepreneurial activity (World Bank, 2023; Asian Development Bank, 2021).

Secondly, the results of the analysis show that the structure of women's entrepreneurship in Central Asian countries is characterized by a pronounced sectoral concentration. Most enterprises headed by women operate in the trade and services sectors, while women's participation in high-tech and capital-intensive sectors remains limited. This trend aligns with findings from gender-based entrepreneurship studies, which indicate that women are more likely to choose industries with lower entry barriers and lower start-up capital requirements (Brush et al., 2009).

From a resource-based approach to entrepreneurship (resource-based theory), this structure may be explained by women's limited access to key resources, including financial capital, entrepreneurial networks, and managerial experience (Alvarez & Busenitz, 2001). In conditions of limited resources, women entrepreneurs are more likely to choose activities that do not require significant initial investments.

Thirdly, an econometric analysis has shown that one of the most significant factors in the development of women's entrepreneurship is women's economic activity. The high statistical significance of this indicator confirms the hypothesis that entrepreneurship is often a continuation of women's economic activity in the labor market. This conclusion is consistent with results from global entrepreneurship monitoring studies, which indicate that the growth in women's employment contributes to the formation of entrepreneurial intentions and increases the number of new enterprises (GEM, 2023).

The level of digitalization of the economy also has a significant impact on the development of women's entrepreneurship. Increased access to the Internet and digital platforms creates new business opportunities, especially for women facing geographical and institutional constraints. Research shows that digital technologies can reduce transaction costs, expand market access, and form new forms of entrepreneurial activity, including e-commerce and digital services (Dy et al., 2017; ITU, 2023).

In addition, international support programs play an important role in the development of women's entrepreneurship. The initiatives of the Asian Development Bank, the European Bank for Reconstruction and Development and the UNDP implemented in the region are aimed at developing women's entrepreneurial skills, increasing access to finance and creating an enabling business environment. Such programs contribute to the formation of entrepreneurial ecosystems that support the development of small businesses and innovation (Asian Development Bank, 2021; UNDP, 2022).

At the same time, the study's results show that significant institutional and socio-cultural barriers to the development of women's entrepreneurship persist in Central Asian countries. These include limited access to financial resources, insufficient entrepreneurial education, and the influence of traditional gender norms. Such restrictions are especially noticeable in countries with

less developed financial infrastructure and more traditional social structure, such as Tajikistan (Neumann, 2020; Kandiyoti, 2007).

Thus, the results of the study confirm that the development of women's entrepreneurship in Central Asian countries requires an integrated approach, including institutional reforms, the development of financial infrastructure, support for digital technologies and the expansion of educational programs for women entrepreneurs. Strengthening these areas can contribute not only to the growth of women's entrepreneurial activity but also to the sustainability of the region's economic development as a whole.

6. Conclusion

The present study was aimed at analyzing the current state, the main barriers and factors of the development of women's entrepreneurship in Central Asian countries. A comparative analysis of statistical data, the sectoral structure of entrepreneurial activity and the results of econometric modeling revealed a number of key patterns in the development of women's business in the region.

Firstly, the results of the study show that women's entrepreneurship in Central Asia is demonstrating a steady positive trend. Across the region, the proportion of women among entrepreneurs is gradually increasing, indicating an expansion of women's economic activity and greater participation in entrepreneurship. The highest rates of women's involvement in entrepreneurship are recorded in Kazakhstan and Kyrgyzstan, where a relatively more favorable institutional environment has been formed and programs of state and international support for small and medium-sized businesses are being implemented.

Secondly, the analysis of the sectoral structure of women's entrepreneurship showed that many enterprises headed by women are concentrated in the trade and services sectors. This is due to the relatively low barriers to entry into these types of activities, the lower capital intensity of the business and the possibility of combining entrepreneurial activities with family responsibilities. At the same time, women's participation in the manufacturing, technological and innovative sectors of the economy remains limited, which indicates the need to expand opportunities for women in more high-tech industries.

Thirdly, the results of the econometric analysis confirmed the importance of a number of factors influencing the development of women's entrepreneurship. The most significant impact is exerted by the level of economic activity of women, the degree of digitalization of the economy, access to financial resources and the level of economic development of the country. Increasing Internet penetration and access to financial resources contributes to an increase in the number of enterprises headed by women, as well as expanding opportunities for small business development.

Fourth, the study revealed the presence of a number of institutional and socio-cultural barriers that hinder the development of women's entrepreneurship. The most significant limitations include women's limited access to financial resources, insufficient entrepreneurial education, and the influence of traditional gender norms. These factors are particularly noticeable in countries with less developed financial infrastructure and more traditional social structures.

The results obtained allow us to formulate a number of practical recommendations for the further development of women's entrepreneurship in Central Asian countries. First of all, it is necessary to expand women's access to financial resources, including the development of microfinance, credit programs and guarantee mechanisms to support small businesses. An

important area is the development of entrepreneurial education and training programs for women entrepreneurs aimed at developing managerial and digital competencies.

In addition, further development of digital infrastructure and e-commerce can play a significant role, which create new business opportunities and enable women to overcome geographical and institutional constraints. Strengthening support for entrepreneurial networks and business associations can also contribute to the development of business contacts, the exchange of experience and the expansion of entrepreneurial opportunities for women.

In general, the development of women's entrepreneurship can become an important factor in the economic growth and sustainable development of Central Asian countries. The expansion of women's economic opportunities contributes to an increase in employment, an increase in innovation activity and the formation of a more inclusive economic system. In this regard, the further development of a policy to support women's entrepreneurship should be considered as one of the key elements of the socio-economic strategy of the countries of the region.

A promising area of further research is a deeper analysis of the institutional factors influencing the development of women's entrepreneurship, as well as exploring the role of the digital economy and entrepreneurial ecosystems in expanding opportunities for women entrepreneurs.

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References

- Aidis, R., Welter, F., Smallbone, D., & Isakova, N. (2008). Female entrepreneurship in transition economies: the case of Lithuania and Ukraine. *Feminist Economics*, 13(2), 157–183. <https://doi.org/10.1080/13545700601184831>
- Ahl, H. (2006). Why research on women entrepreneurs needs new directions. *Entrepreneurship Theory and Practice*, 30(5), 595–621. <https://doi.org/10.1111/j.1540-6520.2006.00138.x>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Alvarez, S. A., & Busenitz, L. W. (2001). The entrepreneurship of resource-based theory. *Journal of Management*, 27(6), 755–775. <https://doi.org/10.1177/014920630102700609>
- Asian Development Bank. (2021). *Women's entrepreneurship in Asia and the Pacific*. Manila: ADB.
- Asian Development Bank. (2022). *Women's entrepreneurship in Central Asia: Opportunities and challenges*. Manila: ADB.
- Brush, C. G., de Bruin, A., & Welter, F. (2009). A gender-aware framework for women's entrepreneurship. *International Journal of Gender and Entrepreneurship*, 1(1), 8–24. <https://doi.org/10.1108/17566260910942318>
- Brush, C. G., Edelman, L. F., Manolova, T., & Welter, F. (2018). A gendered look at entrepreneurship ecosystems. *Small Business Economics*, 53(2), 393–408. <https://doi.org/10.1007/s11187-018-9992-9>
- Bureau of National Statistics of the Republic of Kazakhstan. (2024). *Small and medium enterprises statistics*. Astana.
- Dy, A. M., Marlow, S., & Martin, L. (2017). A web of opportunity or the same old story? Women digital entrepreneurs and intersectionality theory. *Human Relations*, 70(3), 286–311. <https://doi.org/10.1177/0018726716650730>
- European Bank for Reconstruction and Development. (2023). *Strategy for the promotion of gender equality*. London: EBRD.

- Global Entrepreneurship Monitor (GEM). (2023). Global report 2022/2023. London: GEM.
- International Finance Corporation. (2021). Women-owned SMEs in emerging markets. Washington, DC: IFC.
- International Labour Organization. (2021). World employment and social outlook: Trends 2021. Geneva: ILO.
- International Telecommunication Union. (2023). Measuring digital development: Facts and figures 2023. Geneva: ITU.
- Iakovleva, T., Kolvereid, L., & Stephan, U. (2013). Entrepreneurial intentions in developing and developed countries. *Education + Training*, 53(5), 353–370. <https://doi.org/10.1108/00400911111147686>
- Kandiyoti, D. (2007). The politics of gender and the Soviet paradox: neither colonized nor modern? *Central Asian Survey*, 26(4), 601–623. <https://doi.org/10.1080/02634930802018521>
- Minniti, M., & Naudé, W. (2010). What do we know about the patterns and determinants of female entrepreneurship across countries? *European Journal of Development Research*, 22(3), 277–293. <https://doi.org/10.1057/ejdr.2010.17>
- Ministry of National Economy of Kazakhstan. (2023). Report on the implementation of the Bastau Business program for 2022. Astana.
- Neumann, I. (2020). Gender norms and women's economic participation in Central Asia. *Central Asian Survey*, 39(2), 215–234. <https://doi.org/10.1080/02634937.2020.1734985>
- North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge University Press.
- OECD. (2021). *Beyond COVID-19: Prospects for economic recovery in Central Asia*. Paris: OECD Publishing.
- OECD. (2022). *Women's economic empowerment in Central Asia*. Paris: OECD Publishing.
- Sattar, S. (2019). *Opportunities for men and women in emerging Europe and Central Asia*. Washington, DC: World Bank.
- Terjesen, S., & Amorós, J. E. (2010). Female entrepreneurship in Latin America and the Caribbean: Characteristics, drivers and relationship to economic development. *European Journal of Development Research*, 22(3), 313–330. <https://doi.org/10.1057/ejdr.2010.13>
- UNDP. (2022). *Digital entrepreneurship and women's empowerment in Central Asia*. Almaty: UNDP Regional Bureau.
- UN Women. (2022). *Women's entrepreneurship and economic empowerment in Central Asia*. New York: UN Women.
- Welter, F., & Smallbone, D. (2011). Institutional perspectives on entrepreneurial behavior in challenging environments. *Journal of Small Business Management*, 49(1), 107–125. <https://doi.org/10.1111/j.1540-627X.2010.00317.x>
- Welter, F., Smallbone, D., & Pobol, A. (2017). Entrepreneurial activity in the informal economy: a missing piece of the entrepreneurship puzzle. *Entrepreneurship & Regional Development*, 27(5–6), 292–306. <https://doi.org/10.1080/08985626.2015.1041259>
- World Bank. (2023). *World development indicators*. Washington, DC: World Bank.
- World Bank. (2024). *Women, business and the law 2024*. Washington, DC: World Bank.
- World Economic Forum. (2023). *Global gender gap report 2023*. Geneva: WEF.
- Yessengeldin, B., Sitenko, D., & Ramashova, A. (2020). Women's entrepreneurship in Kazakhstan: Challenges and opportunities. *Central Asian Survey*, 39(1), 45–62. <https://doi.org/10.1080/02634937.2019.1697437>

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