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THE GLOBAL INDEX OF FEMALE ENTREPRENEURSHIP SYSTEMS

Éva Komlósi, Hanga Bilicz, Mónika Tiszberger, Erkkó Autio, Donghyun Park, and Shu Tian

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ABSTRACT

The Female Entrepreneurship Index (FEI) for 2024 aims to pinpoint the elements that facilitate the success of promising high-potential female entrepreneurs—those who manage and possess ventures characterized by innovation, market growth, and a focus on exports. Ambitious female entrepreneurs, through their commercial pursuits, not only enhance their personal financial standing but also make significant contributions to their society's economic and social structure. The FEI's methodical framework allows for international comparisons and evaluations of gender-specific circumstances that typically influence the growth of productive female entrepreneurship. As an analytical tool for comprehensively recognizing and examining the environment that is conducive to the advancement of productive businesses led by women, the FEI goes beyond merely tallying the number of female entrepreneurs. Instead, it concentrates on highlighting an economy's assets and limitations in cultivating an atmosphere or potential that could nurture the development of exceptional female-driven enterprises.

Keywords: female entrepreneurship, innovation-driven enterprises, export-oriented ventures, gender-specific business environment, comparative entrepreneurial analysis

JEL codes: L26, J16, O57

I. BARRIERS AND CATALYSTS: UNDERSTANDING FEMALE ENTREPRENEURSHIP

A. Introduction

Women entrepreneurs play a crucial role in economic growth by creating jobs, fostering innovation, and driving social progress (Minniti and Nardone 2007, Allen et al. 2008, Minniti 2010, Okah-Efogo and Timba 2015, Bullough et al. 2019, Hechevarría et al. 2019, Espinoza Trujano and Welter 2022, Franzke et al. 2022). Binh, Pham, and Nguyen (2024) find that female entrepreneurship boosts economic growth across 47 Asian economies, regardless of development level. Sajjad et al. (2020) similarly highlight its positive impact in both developed and emerging economies. While businesses owned by women perform as well as those owned by men in developed regions, they tend to underperform in developing areas (Crane 2022). However, gender identity does not significantly influence innovation-driven economic growth. Interestingly, the gender identity of the entrepreneur does not seem to affect Schumpeterian innovation-led economic growth. Women entrepreneurs contribute more than a third of global gross domestic product (GDP) (Sahasranamam and Ionescu-Somers 2024), and McKinsey Global Institute estimates that achieving gender parity in the labor market could increase global GDP by up to \$28 trillion (Woetzel et al. 2015).

Díaz-García, González-Moreno, and Sáez-Martínez (2013) find that gender diversity in Spanish research and development (R&D) teams enhances disruptive innovation. Azeem, Sheridan, and Adapa (2022), using World Bank Enterprise Survey data from 16 low- and middle-income economies, revealed that firms with female leadership exhibited higher innovation performance than other gendered leadership combinations (e.g., female owners–male managers or male owners–female managers). Brownell, Kickul, and Hechavarria (2024) find that early-stage female entrepreneurs drive innovation by seeking recognition and independence, challenging gender norms. Machado et al. (2023) link female entrepreneurship to greater innovation, particularly in export-oriented economies with supportive gender policies and favorable institutional environments. Gundry et al. (2014) demonstrated that women’s innovation capabilities enhance firm market value. However, Mari et al. (2024) note that firms owned by women are often less innovative because of their concentration in traditionally female-dominated low-tech industries.

On a societal level, female entrepreneurship helps reduce poverty (Santos and Neumeyer 2021). Aparicio et al. (2022) find that entrepreneurship significantly improves women’s social mobility, enhancing family income and living standards. Lock and Lawton Smith (2016) report that female entrepreneurship in Kenya focuses primarily on poverty alleviation rather than large-scale economic growth. In Ethiopia, women’s participation in microenterprises has boosted household income and reduced poverty (Kobeissi 2010; Ergo, O’Connor, and Leza Mega 2024). Similarly, Nigerian women’s businesses serve as key income sources, supporting education and healthcare (Okolie et al. 2021). Responsible business practices enhance female entrepreneurs’ success and satisfaction significantly, with a greater impact on women than men (Xie and Wu 2022). Colombelli, D’Ambrosio, and Ravetti (2024) find that startups with more female leaders are more likely to pursue social missions.

Despite comprising 49.7% of the global population (World Bank 2023), and their significant economic potential, women remain underrepresented in entrepreneurship. In Organisation for Economic Co-operation and Development (OECD) economies (2022/23), there were 0.71 female entrepreneurs per male entrepreneur, with Poland having the highest ratio (1.07) and Japan the lowest (0.4) (Statista 2024). Globally, women own about one-third of businesses, though ownership rates vary by economic development: 24% in low-income economies versus 39.5% in high-income economies. Notably, both the highest and the lowest female ownership rates are found in developing economies. The lowest rates occur in Iraq (3.8%), India (3.9%), and Pakistan/Saudi Arabia (4.9%), while Ecuador (70.3%), Bolivia (68.6%), and Colombia (66.9%)

have the highest (World Bank, Enterprise Surveys). Among developed economies, Italy has the lowest female ownership rate (24%), while Ireland has the highest (54.9%). The United States has seen significant growth in female entrepreneurship, with businesses owned by women rising from 400,000 in the early 1970s to more than 12 million today, employing more than 10 million people (U.S. Small Business Administration 2023). Globally, there are about eight female entrepreneurs for every 10 male entrepreneurs, and one in six women plans to start a business. Entrepreneurial ambition is particularly strong in low-income economies, where 28% of women aspire to entrepreneurship (GEM 2022). The number of startups led by women achieving “unicorn” status (\$1 billion+ valuation) has also risen, with 21 new unicorns led by women in 2019, up from four in 2013 (Statista 2022).

These points underscore the differences in entrepreneurial aspirations and outcomes between men and women. While increasing numbers of women are pursuing entrepreneurship and leadership roles, much of their potential remains untapped. Existing entrepreneurial support systems often presume equal access for all, yet research indicates persistent gender biases in opportunities. Consequently, women’s entrepreneurial success and economic empowerment vary significantly across different contexts. The following literature review examines how disparities in access to resources, opportunities, and support contribute to gender-based differences in entrepreneurial success.

B. Gender-Based Approach to Female Entrepreneurship Ecosystems

Some locations offer more entrepreneurial opportunities than others, a difference largely explained by variations in entrepreneurial ecosystems, which shape the availability of such opportunities (Content et al. 2020; Cao and Shi 2021; Leendertse, Schrijvers, and Stam 2022; García-Lillo, Seva-Larrosa, and Sánchez-García 2023). As complex adaptive systems, entrepreneurial ecosystems consist of interconnected actors and elements, exhibiting characteristics such as nonlinearity, high diversity, sensitivity to initial conditions, and evolution over time (Mason and Brown 2014; Stam 2015; Roundy, Bradshaw, and Brockman 2018; Stam and van de Ven 2021). Within entrepreneurial ecosystems, productive entrepreneurship (Baumol 1990) serves as an intermediate output that drives economic growth, which is considered the ultimate outcome (Stam 2015, Szerb et al. 2019). Entrepreneurial ecosystems are often described as the collective benefits and resources that are provided by a regional entrepreneurial community to support the creation, survival, and growth of businesses. Vedula and Kim (2019) find that high-quality entrepreneurial ecosystems—characterized by strong support networks, financial resources, and knowledge spillovers—significantly enhance new venture survival rates in the United States. Similarly, Acs et al. (2018) demonstrate a positive correlation between entrepreneurial ecosystem quality and economic growth, suggesting more balanced ecosystems lead to greater economic expansion.

The strength of the entrepreneurial ecosystem concept lies in its emphasis on understanding the components of these ecosystems and the mechanisms linking them to foster entrepreneurship across different regions (Acs, Autio, and Szerb 2014; Acs et al. 2018; Stam and van de Ven 2021; Wurth, Stam, and Spigel 2023). Several conceptual models have been developed to analyze and compare national or regional entrepreneurial ecosystems (e.g., Neck et al. 2004; Acs, Autio, and Szerb 2014; Bell-Masterson and Stangler 2015; Feldman, Siegel, and Wright 2019; Lai and Vonortas 2019; Szerb et al. 2020; Stam and van de Ven 2021; Sternberg 2022). However, existing models have notable limitations, underscoring the undertheorized nature of entrepreneurial ecosystem research (Autio et al. 2018). A key assumption in entrepreneurial ecosystem studies is that all entrepreneurs within an ecosystem have equal access to resources, support, and opportunities.

Recently, scholars have begun to examine whether entrepreneurial ecosystems provide equal support to all entrepreneurs, particularly women. Research suggests gender significantly influences how entrepreneurial systems function at various levels (Malecki 2018, Brush et al. 2019, de Bruin and Swail 2024, Stoker et al. 2021). Ungerer, Rintsch, and Henn (2023) note that, while the literature on female entrepreneurship and entrepreneurial ecosystems is growing, the intersection of these two fields remains underdeveloped. There is still limited knowledge on how to better support female entrepreneurs within entrepreneurial ecosystems. While many studies explore gender differences in specific entrepreneurial ecosystem components, research remains disproportionately focused on either micro-level factors (e.g., personality traits, motivations, or competencies) or macro-level influences (e.g., formal and informal institutions). However, entrepreneurial ecosystem conceptual frameworks that effectively integrate both levels are still scarce.

1. Micro-Level Factors

Many studies have explored the influence of personal factors (e.g., personality traits, and psychological and cognitive factors) on the willingness, performance, and success of women entrepreneurs, and have generally found numerous differences in the entrepreneurial personality traits of men and women. Sexton and Bowman-Upton (1990) concluded that the psychological profiles of entrepreneurs were more similar than different across genders. They found that, while male business founders often exhibited greater dynamism and a willingness to take risks, female entrepreneurs tended to demonstrate stronger inclinations toward self-reliance and adaptability. Interestingly, both groups showed comparable levels of caution, ability to influence others, and social finesse.

Moreover, studies have shown that women are generally less willing to take risks, impacting their business decisions and success. According to Sánchez Cañizares and Fuentes García (2010), female students are less likely to engage in entrepreneurial activities because of a significant fear of failure, whereas male students are more willing to take on new challenges and risks. Men are primarily motivated by achieving a higher income, whereas women prioritize the opportunity to create something of their own and the lack of suitable employment. Female students rate their responsibility and discipline more positively, whereas male students score higher in initiative, creativity, and confidence.

It has been found that women generally have lower self-confidence than men (Cech et al. 2011). Female entrepreneurs' lower self-confidence and self-esteem negatively impact their business decisions and financial activities. Identifying business opportunities is crucial for success, but low self-confidence (low self-efficacy) can limit women's potential, leading to self-imposed barriers. In developing regions such as Africa and Asia, female entrepreneurs often perceive a more antagonistic environment that can hinder them—despite this not being the case (Carranza, Dhakal, and Love 2018). Similarly, Isiwu and Onwuka (2017) find that self-efficacy significantly predicts women's entrepreneurial intention in Nigeria, while goal orientation and job commitment show no significant effect.

Gerke et al. (2023) explore the personality differences between male and female entrepreneurs at different stages of entrepreneurial success: pre-startup, startup, and post-startup. The study focuses on the success of women and finds that critical factors for the success of female entrepreneurs included self-efficacy in all phases; proactivity, especially in the launch phase; the need for autonomy in the pre-launch and launch phases; locus of control in the pre-launch and post-launch phases; and innovativeness and openness in the pre-launch phase. Interestingly, risk taking is not a significant factor among successful female entrepreneurs. For men, self-efficacy is

critical in all phases, while risk-taking and locus of control are vital. Resilience also positively impacts the success of male entrepreneurs. However, resilience hurts women in the post-launch phase.

Mylonas, Kyrgidou, and Petridou (2017) find that young female students tend to show higher levels of creativity, which positively influences their entrepreneurial intentions, particularly in innovation and new product development. Similarly, Papadimitriou, Mylonas, and Frangakis (2022) reveal that creative personality influences women's venture performance in creative industries. Huang et al. (2022) examine the relationship between female entrepreneurs' innovativeness and entrepreneurial performance using a sample of 558 Chinese female entrepreneurs. The authors find that innovativeness, solid opportunity recognition skills, and psychological capital significantly impact entrepreneurial success.

Further, Sabri and Thomas (2019) examine the psycho-attitudinal characteristics of female entrepreneurs in Saudi Arabia, focusing on the Big Five personality model and risk propensity. The study compares the attitudes of female and male entrepreneurs across different stages of the entrepreneurial process. It finds that female entrepreneurs display a higher prevalence of growth-oriented attitudes compared to their male counterparts, especially in the early stages of their entrepreneurial ventures. Notably, women are more open to new experiences and ideas, which is critical in the ideation phase. In the mature stage, female entrepreneurs are more cautious about taking risks, focusing on sustainable and stable growth strategies. In contrast, male entrepreneurs exhibit strong risk propensity and openness in the mature stage. Meanwhile, Elnadi and Gheith (2021) demonstrate that entrepreneurial self-efficacy more substantially influences entrepreneurial intention among Saudi men than women. This suggests that women's lower self-efficacy may limit their entrepreneurial intentions.

Gender roles, stereotypes, and perceptions have a significant impact on women, often creating barriers for women entrepreneurs who do not fit into the conventional male-centered image of entrepreneurship. Women entrepreneurs are often confronted with tensions between traditional female roles and entrepreneurial norms, which are typically associated with masculine attributes such as competitiveness and risk-taking (the "think entrepreneur—think male" paradigm) (Lagúia et al. 2019). Gupta et al. (2009), surveying business students in the United States, Türkiye, and India, find that entrepreneurial traits are perceived as masculine by both men and women. This perception persists across economies, although women recognize a broader range of entrepreneurial attributes, including those considered feminine. The study also finds that individuals who identify with masculine characteristics are more likely to have entrepreneurial aspirations, regardless of their biological sex.

Chadwick and Dawson (2024) categorize women entrepreneurs into three groups based on the relationship between their gender and entrepreneurial identities: (i) those with imposter feelings, (ii) those embracing acceptance, and (iii) those embodying authenticity. An authentic female entrepreneur will perceive her gender identity as complementary to her entrepreneurial identity, allowing her to approach entrepreneurial endeavors with real confidence. Authentic women entrepreneurs are characterized by a "growth mindset," which suggests their skills and abilities are seen as adaptable and open to improvement. Women entrepreneurs who embody this growth mindset see challenges and failures as learning opportunities that foster resilience and growth. Similarly, in Wieland et al. (2019), participants reported higher self-confidence, stronger social support as expected, and greater attractiveness of entrepreneurial opportunities aligned with traditional gender roles, with lower perceptions of risk. This research highlights how gendered perspectives influence the evaluation of entrepreneurial ventures, reinforcing gender inequalities in business outcomes. The results show women are more inclined to pursue lower-return ventures in less profitable sectors, perpetuating gender inequality in entrepreneurship.

2. Macro-Level (Institutional) Factors

Institutional frameworks define the boundaries and opportunities for individual behavior and actions related to entrepreneurial activities, shaping the development and outcomes of businesses. These institutions can simultaneously act as supportive and restrictive forces: they may reduce transaction costs and risks. However, they can also increase them, influencing the likelihood of business initiation and success. These institutions, whether regulatory, normative, or cultural-cognitive, often carry hidden gender dimensions that differentially affect the prospects of male and female entrepreneurs.

Access to finance. Financing poses a considerable challenge for women entrepreneurs because of systemic barriers that are either less pronounced or absent for men. Women frequently encounter stricter lending criteria and have reduced access to venture capital compared to their male peers. In 2024, only 2% of venture capital investments in Europe went to companies founded exclusively by women (Hodgson 2024).

Halabisky et al. (2023) identify both supply- and demand-side factors that complicate women entrepreneurs' access to capital. On the supply side, financial services and products are often more tailored to the needs of businesses led by men, making them less suitable for typically smaller, less growth-oriented enterprises owned by women. This mismatch makes it challenging for businesses led by women to meet the usual loan and investment criteria. Additionally, an underlying gender bias among capital providers can disadvantage women entrepreneurs; they are often less likely to secure loan approval and may face more stringent terms. On the demand side, women business owners generally have lower financial literacy, which can limit their ability to identify and obtain the right financing options. They also tend to have smaller professional networks, restricting their access to funding opportunities and business knowledge.

Research by Nigam, Benetti, and Mavoori (2022) found that women entrepreneurs' human capital (such as education and work experience) and social capital (such as professional connections) played a key role in their ability to attract venture capital funding. Their study indicated that well-educated and well-networked women founders were more successful in securing funding.

Brooks et al. (2014) observe that investors tend to favor business plans presented by male entrepreneurs over those presented by female entrepreneurs, even when the pitch content is identical. This research points to the influence of biases based on gender and appearance in investor evaluations, creating significant barriers for women entrepreneurs.

In Nigeria, Metu and Nwogwugwu (2024) note that financing challenges for women's microenterprises often owe not to direct discrimination but to low credit demand (stemming from fears about repayment), lack of necessary collateral or guarantors, and information asymmetry. They recommend enhancing financial literacy and reducing bureaucratic barriers to improve women's access to credit.

Dutta and Mallick (2023) highlight that majority businesses owned by women in India face more significant challenges than businesses owned by men or minority businesses owned by women. However, these challenges can be mitigated through internal funding (like retained earnings) and external support from family, friends, or customers. According to their study, women perceive greater obstacles in accessing financial resources because they typically have less business experience and weaker networks, making it harder to identify funding options and earn lenders' trust. Lenders often hold gender-based and stereotypical biases that negatively impact their views of women entrepreneurs. Additionally, women entrepreneurs are generally more cautious and risk-averse, leading them to rely less on external financing and more on internal sources and support from family and friends. Some theories suggest women have a harder time sending

positive signals to lenders, who may have more trust in male entrepreneurs who align more closely with the traditional entrepreneurial image.

Bannó et al. (2023) stress that gender stereotypes significantly shape the financial structure of businesses led by women. Their research shows that lender stereotypes—women are perceived as less competitive or more risk-averse—influence access to credit. Balachandra et al. (2019) conclude that investors are not so much influenced by the gender of the entrepreneur as by their gender stereotypes. Investors tend to react negatively to entrepreneurs who exhibit traditionally feminine behavior, regardless of the gender of the entrepreneur.

Formal and informal (cultural) institutions. Many obstacles faced by female entrepreneurs are gender-specific, rooted in cultural beliefs, social norms, and traditions. Cultural expectations and gender roles influence women's entrepreneurial motivations, risk perceptions, and business approaches. Female leaders frequently encounter bias and discrimination because societal expectations for women often conflict with the qualities expected in leadership roles. The “think entrepreneur—think male” bias creates barriers for women entrepreneurs because men are more often perceived as naturally suited for leadership. Women are frequently associated with communal, empathetic traits, which contrast with the assertive and competitive qualities commonly linked to leadership, making entrepreneurial success more challenging for them to achieve. Additionally, Bullough et al. (2022) observe that cultures promoting fairness, empathy, and high performance, while maintaining low power disparities, tend to have more female leaders.

Xu, Parboteeah, and Fang (2023) point out that traditional Confucian values create significant challenges for female entrepreneurs in the People's Republic of China, where managerial experience can be instrumental in helping women overcome these cultural barriers. Fang et al. (2022) find that businesses led by women face a productivity disadvantage, which is more pronounced in environments with greater gender discrimination. This disadvantage diminishes in economies with higher gender equality, fewer household responsibilities for women, stronger legal protections, and less individualistic cultures. Davis and Williamson (2019), analyzing data from 97 economies using the World Values Survey, find individualism supports gender equality, reduces patriarchal attitudes, and improves outcomes for women. In a study by Simba et al. (2023) on the influence of community-based financing on female entrepreneurs in developing economies, with a focus on Nigeria, it is noted that social structures like family, friendships, and community networks are crucial for supporting women's entrepreneurial efforts.

Colombelli, D'Ambrosio, and Ravetti (2024) highlight that gender equality and presence of female leaders can significantly influence the sustainability goals of startups, with different impacts depending on whether the focus is social or ecological. For example, non-energy-intensive green startups in Italy are more likely to develop in areas with higher gender equality, whereas socially focused startups are more common where women have fewer job opportunities. Xu, Parboteeah, and Fang (2023) further conclude that positive institutional changes can mitigate negative cultural influences, boosting women's entrepreneurial aspirations. They find that social unrest, along with subsequent institutional shifts, can encourage women's entrepreneurial activity even in traditionally unsupportive cultures. Social unrest—defined as collective dissatisfaction with political or social systems, including protests and demonstrations—can lead to major social and economic reforms that create favorable conditions for women entrepreneurs.

Aparicio et al. (2022) observe that an institutional environment supportive of female entrepreneurs (e.g., with respect for democracy and human rights) can enhance social mobility, especially in developing economies where supporting women's businesses is critical for advancing social mobility. Pathak, Goltz, and Buche (2013) demonstrate that women's economic engagement (such as labor market participation, wage equity, and access to leadership roles) and education positively influence the relationship between self-efficacy and entrepreneurship. Economic

engagement also reduces the effect of fear of failure on entrepreneurial choices. Franczak, Lanivich, and Adomako (2023) find that, in environments with limited institutional support, institutional voids increase the link between entrepreneurial alertness and opportunity recognition, especially for men, indicating that women are at a disadvantage in identifying business opportunities in such contexts. Overall, in economies where women achieve labor market equality with men, attain wage parity, and are equally represented in leadership, technical, and professional roles, they are also equally likely to pursue opportunity-based ventures and successfully manage existing businesses (Brush, de Bruin, and Welter 2019).

Intermediaries. At the intersection of entrepreneurial ecosystem and female entrepreneurship research, a key focus is on evaluating the effectiveness of support programs (such as women-only networks, accelerator programs, and training sessions) to assess female entrepreneurs' engagement in these programs and explore ways to enhance their impact. The entrepreneurial ecosystem includes a range of organizations that provide essential support, training, and incentives for new business creation. Professional service firms, like those in real estate, law, accounting, insurance, and consulting, play a significant role by offering specialized assistance to startups. Additionally, accelerators, incubators, coworking spaces, and similar intermediary organizations that offer resources and facilities are crucial for sustaining a dynamic entrepreneurial ecosystem. Gender dynamics in these organizations can vary, sometimes benefiting or disadvantaging male and female entrepreneurs differently.

Avnimelech and Rechter (2023) conducted a survey of 779 startup founders (132 women and 647 men) to assess how startup accelerator programs supported female entrepreneurs and addressed the unique challenges they encountered. Israeli startups led by women tend to lag those led by male in several ways: (i) they have less entrepreneurial knowledge and experience, which hinders growth; (ii) they struggle to build wide-reaching and beneficial networks, limiting resource access; (iii) lower confidence and self-belief make entrepreneurial success less likely; and (iv) they attract investments less frequently and raise less capital, which restricts their growth potential. The study concludes that accelerators can help female entrepreneurs improve in areas such as entrepreneurial skills, networking, and self-confidence. However, accelerator support is not equally effective across all areas for women, particularly in terms of legitimacy and access to capital.

Following Brush, de Bruin, and Welter (2019), three areas show gender-related impacts within these intermediaries. First, the division of roles and opportunities based on gender can slow women's progress, reducing their chances of gaining experience in certain fields and building leadership skills. Horizontal occupational segregation can make women less likely to enter specific entrepreneurial sectors, limiting their development of relevant skills, expertise, and industry knowledge. Vertical segregation may restrict women's leadership opportunities, affecting their ability to build decision-making skills that are crucial for managing businesses. Gender segregation also often results in income gaps, leaving women with fewer financial resources to start businesses. Second, gender stereotypes and cultural images within organizations and entrepreneurial ecosystems frequently favor men or reinforce gendered images of successful entrepreneurs. Third, social structures and interactions within and between organizations can be gender-influenced. In entrepreneurial ecosystems, norms around behavior and interactions in accelerators, incubators, and coworking spaces may differ by gender. For instance, many accelerators are predominantly male.

3. Entrepreneurial Ecosystem Concept and Female Entrepreneurship

Human behavior is influenced by both individual and environmental factors. Personal influences include cognitive abilities, self-confidence, emotional states, and personality traits, whereas environmental factors encompass social dynamics, physical surroundings, cultural norms, and economic conditions. Bandura's (1991) social cognitive theory highlights the dynamic interplay between these elements, where each continuously impacts and is influenced by the others. Ungerer, Rintsch, and Henn (2023) review 19 studies on entrepreneurial ecosystem and female entrepreneurship, focusing on how entrepreneurial ecosystem structures affect female entrepreneurs and what improvements are needed to support their success.

Hechavarría and Ingram (2019), using Global Entrepreneurship Monitor (GEM) data from 75 economies (2001–2014), analyze entrepreneurial ecosystem's influence on national entrepreneurship. Their findings indicate that entrepreneurial ecosystem conditions affect men and women differently; for example, supportive government policies benefit both genders, while women thrive in environments with low entry barriers and cultural encouragement. However, some government programs harm male entrepreneurship without significantly aiding women. Entrepreneurial ecosystem effects also vary by an economy's economic development stage, with financial environments and government programs negatively impacting female entrepreneurs in innovation-driven economies.

Dinc and Hadzic (2018) studied 202 female entrepreneurs in northern Montenegro, finding that personal traits like innovation, risk taking, and confidence mediate the relationship between environmental factors and entrepreneurial intentions. Ali, Ali, and Badghish (2019) examine entrepreneurial ecosystem components, concluding that entrepreneurial success does not require all ecosystem factors to be optimized; instead, a mix of high and low levels can be effective. Social support, in particular, is crucial for Saudi female university students' entrepreneurial ambitions. Aljarodi, Thatchenkery, and Urbano (2024) emphasize the impact of skills, business support, and structural factors like media visibility and business setup ease on female entrepreneurship. Malmström et al. (2024), through a meta-analysis, find that political ideologies and women's societal empowerment are key in influencing access to bank financing. Cukier and Chavoushi (2020) note that systemic barriers, such as limited financial access and male-dominated industries, restrict female entrepreneurship in Canada.

Berger and Kuckertz (2016) identify two types of entrepreneurial ecosystems: gender-equal ecosystems (e.g., Tel Aviv, Singapore, and London) with a higher proportion of female founders, and ecosystems with abundant funding and management access (e.g., Silicon Valley and Singapore) that also support women entrepreneurs. Zehra, Raza, and Sher (2024) study the Gilgit-Baltistan region, identifying challenges like restrictive social norms, limited resources, and lack of education and family support, all of which hinder women's business opportunities. Brydges and Pugh (2021) examine gender disparities in the creative industries, particularly fashion, revealing overlooked barriers such as funding limitations, lack of support, isolation, and a conservative business environment.

Welsh et al. (2023) emphasize that the entrepreneurial ecosystem significantly impacts women's success, with family and social support playing a more critical role than material resources. Stoker et al. (2021) explore fundamental entrepreneurial ecosystem elements shaping female entrepreneurship, such as gender norms, business culture, stereotypes, and access to resources. Ruiz, Amorós, and Guerrero (2023) find that national factors primarily drive gender inequalities in entrepreneurship, while individual-level factors influence both genders similarly. Aidis and Weeks (2016) argue that gender-neutral policies are insufficient to support female entrepreneurs, advocating for tailored strategies.

Foss et al. (2019) analyze policies on women's entrepreneurship (1983–2015), criticizing approaches that focus on correcting women's perceived skill gaps instead of addressing systemic resource allocation issues. They call for research on resource providers, ecosystem linkages, and institutional structures rather than solely training women entrepreneurs. Brush, de Bruin, and Welter (2009) and Dean et al. (2019) have argued for a departure from traditional theories of entrepreneurship, which often ignore gender differences and measure female entrepreneurs' performance and motivations predominantly by male standards. They call for new avenues of research that recognize the diverse and complex nature of women's entrepreneurial aspirations and for frameworks that better reflect this diversity.

In summary, the literature review highlights how social, cultural, and institutional factors shape the entrepreneurial experiences of men and women. Despite higher education levels among women, particularly in OECD economies, this has not led to a significant rise in female entrepreneurship. This suggests education alone is insufficient because women continue to face barriers to information, capital, networks, and opportunities. Given that women make up half the population and are increasingly well educated, their low entrepreneurial activity raises concerns. The key question is why current ecosystems fail to support female entrepreneurs adequately and how they can be made more inclusive to unlock their full potential.

II. FEMALE ENTREPRENEURSHIP INDEX FRAMEWORK AND METHODOLOGY

This section summarizes the conceptual framework, methodology behind the Female Entrepreneurship Index (FEI). Appendix 1 contains a detailed description of the data sources.¹

The FEI for 2024 builds upon a conceptual foundation originally developed for the Global Entrepreneurship Index (GEI). This underlying conceptual framework, which forms the backbone of the FEI 2024, was published by Acs, Autio, and Szerb (2014) with the following title: "National Systems of Entrepreneurship: Measurement Issues and Policy Implications."

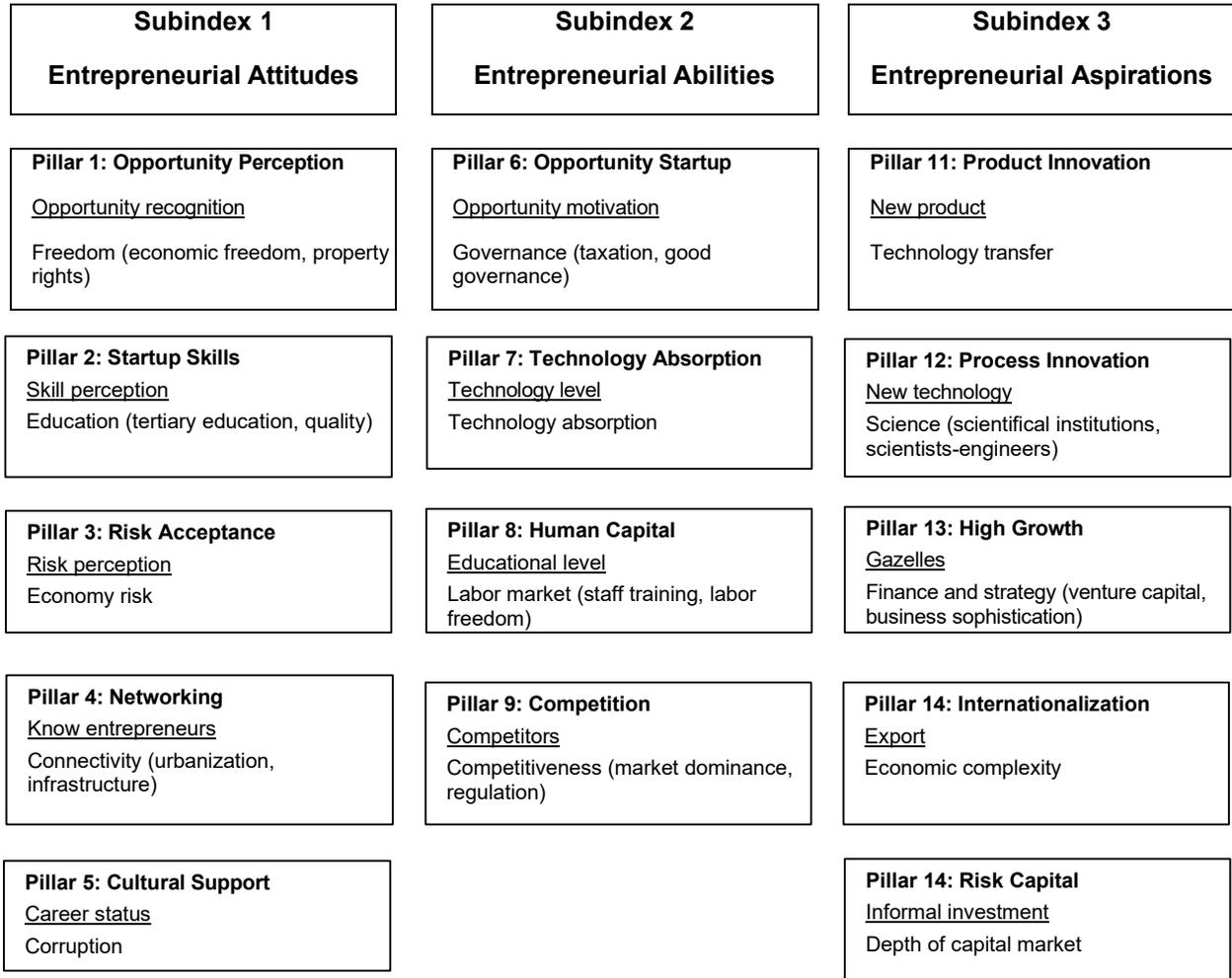
The GEI model marks a major step forward in measuring national entrepreneurship systems, capturing the complex interplay of factors that influence entrepreneurship. By adapting this well-established framework, FEI 2024 builds on decades of research and validation. Its adoption underscores a commitment to rigorous, academically vetted methodologies in assessing female entrepreneurship worldwide.

National-level entrepreneurship has been conceptualized as "the dynamic, institutionally rooted interplay between entrepreneurial mindsets, capabilities, and ambitions of individuals, which steers resource allocation through the establishment and management of new business ventures" (Acs, Autio, and Szerb 2014). Based on this conceptualization, a five-tier index structure is proposed: (i) indicators, (ii) variables, (iii) pillars, (iv) subindices, and, ultimately, (v) the overarching index. Each of the three subindices encompasses multiple pillars, which can be viewed as relatively autonomous components of this entrepreneurship metric. It should be noted that some variables are intrinsically complex, whereas others incorporate only one or two indicators. The pillar level is considered the most crucial element.

Figure 1 presents the FEI framework. To build the FEI, we use the three subindex frameworks of the GEI. Therefore, the FEI is a three-component index that considers the different aspects of the national-level entrepreneurial system.

¹ The Appendix is available at <http://dx.doi.org/10.22617/WPS250427-2>.

Figure 1: The Female Entrepreneurship Index 2024 Framework



Note: Each pillar contains an individual-level indicator (underlined) and an institutional level indicator.
 Source: Authors' illustration based on Acs, Autio, and Szerb (2019).

The three foundational elements of entrepreneurship—entrepreneurial attitudes, entrepreneurial abilities, and entrepreneurial aspirations—are intricately interconnected, each exerting influence on the others. For instance, an individual’s entrepreneurial mindset shapes their skill development and future ambitions in the business world. Conversely, one’s entrepreneurial capabilities and long-term goals can significantly impact overall attitude toward entrepreneurship. This dynamic interplay creates a synergistic effect, whereby improvements in one area can lead to enhancements in the others, fostering a more robust entrepreneurial system.

These three subindices are built upon 14 foundational elements, or pillars (Appendix 2). Each pillar incorporates two distinct variables: one reflecting individual-level factors and another representing institutional-level aspects. This dual approach addresses both the micro and the macro dimensions of entrepreneurship. These carefully crafted pillars aim to encapsulate the multifaceted and dynamic nature of entrepreneurial activity. By analyzing these pillars, policymakers can gain comprehensive insights into their domestic entrepreneurial systems, identifying both their strong points and areas requiring improvement.

A detailed description of the index calculation is in Appendix 3.

A. The Individual Variables, Indicators, and Dataset

As mentioned previously, an entrepreneurship index should incorporate both individual-level and institutional/environmental variables. All individual-level variables are from the GEM Adult Population Survey (APS).² The full list and description of the applied GEM individual variables are in Appendix 2. The analysis includes the GEM indicators filtered specifically for female established firms and female total early-stage entrepreneurial activity (TEA) firms. In most cases, the indicators are also used as variables—with two exceptions: informal investment and career status. Because of changes in the GEM APS after 2019, some indicators have been removed or modified. As a result, several individual indicators used in the GEI have had to be adjusted for the construction of the FEI.

Since our core data come from the GEM, the availability of GEM APS determines the possible list of economies and the sample size (Table 1). Certain economies have participated in the GEM survey only sporadically; for numerous others, participation occurred quite some time ago. Given that the objective of the FEI is to provide policymakers with up-to-date information on which segments of the entrepreneurial system require intervention to support productive female enterprises, excluding economies with significantly outdated data was deemed essential, even if this reduced the number of economies in the analysis.

Table 1: Availability of Global Entrepreneurship Monitor Data

Economy	2017–2019 (pre-COVID-19)	2020–2022 (post-COVID-19)	Latest Available
Angola	2018	2020	2020
Argentina	2018	na	2018
Armenia	2019	na	2019
Australia	2019	na	2019
Austria	2018	2022	2018
Belarus	2019	2021	2021
Bosnia and Herzegovina	2017	na	2017
Brazil	2019	2022	2022
Bulgaria	2018	na	2018
Burkina Faso	na	2020	2020
Canada	2019	2022	2022
Chile	2019	2022	2022
People’s Republic of China	2019	2022	2022
Colombia	2019	2022	2022
Croatia	2019	2022	2022
Cyprus	2019	2022	2022
Dominican Republic	na	2021	2021
Ecuador	2019	na	2019
Egypt, Arab Republic of	2019	2022	2022
Estonia	2017	na	2017
Finland	na	2021	2021
France	2018	2022	2022
Germany	2019	2022	2022
Greece	2019	2022	2022
Guatemala	2019	2022	2022
Hungary	na	2022	2022
India	2019	2022	2022
Indonesia	2018	2022	2022

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² Adult Population Survey (APS): “The APS is a comprehensive questionnaire, administered to a minimum of 2,000 adults in each GEM economy, designed to collect detailed information on the entrepreneurial activity, attitudes and aspirations of respondents.” <https://www.gemconsortium.org/wiki/1154>.

Economy	2017–2019 (pre-COVID-19)	2020–2022 (post-COVID-19)	Latest Available
Iran, Islamic Republic of	2019	2022	2022
Ireland	2019	2021	2021
Israel	2019	2022	2022
Italy	2019	2021	2021
Japan	2019	2022	2022
Jordan	2019	na	2019
Kazakhstan	2017	2021	2021
Republic of Korea	2019	2022	2022
Kuwait	na	2020	2020
Latvia	2019	2022	2022
Lebanon	2018	na	2018
Lithuania	na	2022	2022
Luxembourg	2019	2022	2022
Madagascar	2019	na	2019
Malaysia	2017	na	2017
Mexico	2019	2022	2022
Morocco	2019	2022	2022
Netherlands	2019	2022	2022
North Macedonia	2019	na	2019
Norway	2019	2022	2022
Oman	2019	2022	2022
Pakistan	2019	na	2019
Panama	2019	2022	2022
Peru	2018	na	2018
Poland	2019	2022	2022
Portugal	2019	na	2019
Puerto Rico	2019	2022	2022
Qatar	2019	2022	2022
Romania	na	2022	2022
Russian Federation	2019	2021	2021
Saudi Arabia	2019	2022	2022
Serbia	na	2022	2022
Slovak Republic	2019	2022	2022
Slovenia	2019	2022	2022
South Africa	2019	2022	2022
Spain	2019	2022	2022
Sudan	2018	2021	2021
Sweden	2019	2022	2022
Switzerland	2019	2022	2022
Taipei, China	2019	2022	2022
Thailand	2018	na	2018
Togo	na	2022	2022
Tunisia	na	2022	2022
Türkiye	2018	2021	2021
United Arab Emirates	2019	2022	2022
United Kingdom	2019	2022	2022
United States	2019	2022	2022
Uruguay	2018	2022	2022
Venezuela	na	2022	2022
Viet Nam	2017	na	2017

COVID-19 = coronavirus disease, na = “no data”.
Source: Authors' calculations.

B. The Institutional Indicators, Variables, and Dataset

Since the GEM lacks the necessary institutional indicators, individual indicators and variables are complemented with other widely recognized and accepted data from various reputable international databases, such as those of Transparency International (Corruption Perceptions Index); the United Nations Educational, Scientific and Cultural Organization (UNESCO) (tertiary education enrollment, Gross Domestic Expenditure on R&D [GERD]); World Economic Forum (infrastructure, regulation, scientific institutions, availability of scientists, business sophistication, technology absorption and technology transfer capability, staff training, market dominance, venture capital); the United Nations (urbanization); The Heritage Foundation and the World Bank (economic freedom, property rights, labor freedom); the World Bank (taxation, good governance); the Observatory of Economic Complexity (economic complexity); OECD (economy risk); and the Venture Capital & Private Equity Country Attractiveness Index (depth of capital market).

In the analysis, the most recent institutional indicators and variables available on 20 August 2024 were used. Appendix 2 contains the full description of the institutional indicators and variables and their sources.

III. FEMALE ENTREPRENEURSHIP INDEX RESULTS

A. The Female Entrepreneurship Index 2024 rankings

The top 10 economies with the strongest support for high-potential female entrepreneurs are (i) the United States, (ii) Canada, (iii) the United Arab Emirates, (iv) Ireland, (v) the Netherlands, (vi) Sweden, (vii) Norway, (viii) Switzerland, (ix) the United Kingdom, and (x) Australia. The United States leads with a robust entrepreneurial system, while the other economies also provide strong but uneven support. From 2017 to 2022, FEI scores ranged from 5.09 (Madagascar) to 77.97 (United States), with the highest score being about 15.3 times the lowest, reflecting significant global disparities.

Economies can be categorized into five groups based on their FEI index percentiles: above the 80th, 60th–80th, 40th–60th, 20th–40th, and below the 20th (Table 2). North America, Western Europe, the United Arab Emirates, Australia, and Israel dominate the top 20%, while the bottom 20% mainly includes African and Latin American economies, as well as Iran, Pakistan, Indonesia, Serbia, and Bosnia and Herzegovina.

Table 2: The Female Entrepreneurship Index 2024 Ranks and Scores

Economy	FEI Score	FEI Rank	Economy	FEI Score	FEI Rank
United States	77.97	1	Oman	35.21	40
Canada	70.47	2	Türkiye	35.20	41
United Arab Emirates	70.14	3	Dominican Republic	32.76	42
Ireland	68.57	4	People's Republic of China	32.73	43
Netherlands	67.87	5	Thailand	31.81	44
Sweden	66.43	6	Belarus	31.53	45
Norway	64.34	7	Poland	31.11	46
Switzerland	62.59	8	North Macedonia	30.57	47
United Kingdom	59.34	9	South Africa	29.99	48
Australia	58.15	10	Tunisia	29.56	49
Germany	57.51	11	Armenia	28.89	50
Estonia	57.37	12	Peru	28.82	51
Luxembourg	55.68	13	Mexico	28.18	52
Israel	54.76	14	Brazil	28.05	53
Austria	54.69	15	Bulgaria	27.67	54

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Economy	FEI Score	FEI Rank	Economy	FEI Score	FEI Rank
France	54.49	16	Russian Federation	27.45	55
Taipei,China	51.65	17	Panama	27.30	56
Qatar	49.89	18	Lebanon	27.15	57
Cyprus	49.04	19	India	26.63	58
Puerto Rico	47.45	20	Jordan	26.11	59
Latvia	46.60	21	Viet Nam	25.75	60
Finland	46.35	22	Kazakhstan	25.60	61
Saudi Arabia	45.78	23	Colombia	25.48	62
Portugal	44.64	24	Serbia	24.69	63
Spain	44.51	25	Iran	24.08	64
Republic of Korea	43.52	26	Argentina	23.19	65
Lithuania	43.48	27	Indonesia	23.15	66
Chile	42.20	28	Morocco	22.42	67
Japan	42.19	29	Egypt, Arab Republic of	21.24	68
Slovenia	41.96	30	Guatemala	19.06	69
Croatia	41.86	31	Ecuador	18.61	70
Kuwait	41.05	32	Bosnia and Herzegovina	17.48	71
Malaysia	40.27	33	Angola	12.31	72
Uruguay	38.53	34	Pakistan	12.23	73
Romania	38.04	35	Togo	12.22	74
Italy	37.87	36	Venezuela	11.93	75
Greece	37.54	37	Sudan	11.31	76
Slovakia	35.62	38	Burkina Faso	11.10	77
Hungary	35.38	39	Madagascar	5.09	78

FEI = Female Entrepreneurship Index.

Notes: Dark green = above 80th percentile, light green = 60th–80th percentiles, yellow = 40th–60th percentiles, orange = 20th–40th percentiles, red = below 20th percentile.

Source: Authors' calculations.

We also built a five-cluster model where the five cutoff points were determined by classifying the economies based on the three subindices: entrepreneurial attitudes, entrepreneurial abilities, and entrepreneurial aspirations. This approach enabled the classification of economies into the following categories:

- (i) tailenders (FEI score below 21.5),
- (ii) laggards (21.5 < FEI score ≤ 36.0),³
- (iii) catchers-up (35.0 < FEI score ≤ 49.1),
- (iv) followers (49.1 < FEI score ≤ 60), and
- (v) leaders (FEI score over 60).

Table 3 presents the overall FEI score along with separate rankings for institutional and individual components across 78 economies. These separate scores highlight potential gaps between institutional support and individual entrepreneurial attitudes. For instance, an economy may have strong institutional backing yet low individual engagement—a contrast not visible in the overall FEI score. The institutional score reflects governmental, legal, and regulatory factors affecting female entrepreneurship, while the individual score captures how female entrepreneurs respond to these conditions. This distinction helps policymakers design targeted strategies to foster female entrepreneurship.

The Spearman rank correlation between the FEI Institutional Rank and the FEI Individual Rank is about 0.31 with a p-value of 0.006. The correlation coefficient of 0.31 indicates a weak positive correlation between the two ranks. This suggests there is some degree of association, but it is not strong. The p-value of 0.006 is statistically significant, meaning the observed

³ The economy groups were determined based on three subindices. This explains why Hungary (with a score of 35.4) and Oman (with a score of 35.2) fall into the catchers-up category, while the Slovak Republic (with a score of 35.6) is classified in the laggards category.

correlation is unlikely to be because of random chance. The Kendall's tau correlation between the FEI Institutional Rank and the FEI Individual Rank is about 0.21, with a p-value of 0.007. Kendall's tau (0.21) is slightly lower than the Spearman's rho (0.31), but both indicate a weak positive correlation between the institutional and the individual rankings. The p-values for both correlations are statistically significant, meaning the observed correlations are unlikely to be because of random chance. Both the Kendall's tau and the Spearman's rho suggest a weak positive correlation between the FEI institutional and individual rankings. Although the correlation coefficients differ slightly, the general conclusion remains the same: there is some alignment between the institutional and individual rankings, but it is not strong.

These significant rank differences highlight potential disconnects between institutional support and actual entrepreneurial perceptions and attitudes. In some economies, strong institutional frameworks are not translating into individual success, possibly because of cultural or societal barriers. In contrast, other economies show strong individual performance despite weaker institutional support, suggesting resilience and alternative support mechanisms among female entrepreneurs.

**Table 3: Female Entrepreneurship Index 2024 Individual and Institutional Pillars
—Ranks and Scores (2017–2022)**

Economy	Year	FEI	FEI Rank	FEI Institutional Score	FEI Institutional Rank	FEI Individual Score	FEI Individual Rank
United States	2022	77,97	1	92,40	2	63,29	6
Canada	2022	70,47	2	86,08	5	63,40	5
United Arab Emirates	2022	70,14	3	73,35	18	75,61	1
Ireland	2021	68,57	4	78,12	14	63,68	4
Netherlands	2022	67,87	5	85,29	7	57,62	13
Sweden	2022	66,43	6	83,35	9	59,02	11
Norway	2022	64,34	7	81,47	12	57,87	12
Switzerland	2022	62,59	8	92,51	1	53,80	23
United Kingdom	2022	59,34	9	83,64	8	50,57	30
Australia	2019	58,15	10	67,15	24	57,06	14
Germany	2022	57,51	11	85,68	6	49,67	35
Estonia	2017	57,37	12	69,56	20	59,68	10
Luxembourg	2022	55,68	13	67,97	22	63,87	3
Israel	2022	54,76	14	80,75	13	50,23	33
Austria	2022	54,69	15	77,24	16	47,64	38
France	2022	54,49	16	77,49	15	54,26	20
Taipei, China	2022	51,65	17	83,25	10	45,36	47
Qatar	2022	49,89	18	55,85	36	63,06	7
Cyprus	2022	49,04	19	65,79	26	51,13	28
Puerto Rico	2022	47,45	20	54,65	37	54,18	21
Latvia	2022	46,60	21	62,13	31	50,30	32
Finland	2021	46,35	22	92,17	3	39,22	65
Saudi Arabia	2022	45,78	23	53,11	40	61,26	8
Portugal	2019	44,64	24	62,20	30	52,56	25
Spain	2022	44,51	25	74,21	17	41,77	57
Republic of Korea	2022	43,52	26	81,95	11	40,64	61
Lithuania	2022	43,48	27	69,23	21	46,43	42
Chile	2022	42,20	28	56,51	34	52,23	27
Japan	2022	42,19	29	89,75	4	37,08	69
Slovenia	2022	41,96	30	66,43	25	44,71	50
Croatia	2022	41,86	31	53,23	39	55,03	18
Kuwait	2020	41,05	32	51,23	42	64,92	2
Malaysia	2017	40,27	33	70,97	19	45,23	48
Uruguay	2022	38,53	34	46,42	50	49,78	34
Romania	2022	38,04	35	53,42	38	54,93	19
Italy	2021	37,87	36	67,17	23	41,41	60

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Economy	Year	FEI	FEI Rank	FEI Institutional Score	FEI Institutional Rank	FEI Individual Score	FEI Individual Rank
Greece	2022	37,54	37	58,21	32	43,33	54
Slovakia	2022	35,62	38	57,12	33	42,15	56
Hungary	2022	35,38	39	64,28	29	40,07	62
Oman	2022	35,21	40	48,18	46	53,80	22
Türkiye	2021	35,20	41	46,00	51	50,44	31
Dominican Republic	2021	32,76	42	35,59	66	60,66	9
People's Republic of China	2022	32,73	43	64,84	28	39,46	64
Thailand	2018	31,81	44	51,91	41	46,02	43
Belarus	2021	31,53	45	40,49	59	46,83	41
Poland	2022	31,11	46	65,70	27	34,54	76
North Macedonia	2019	30,57	47	36,70	65	55,33	16
South Africa	2022	29,99	48	46,57	49	52,32	26
Tunisia	2022	29,56	49	38,78	62	55,09	17
Armenia	2019	28,89	50	37,68	64	49,04	36
Peru	2018	28,82	51	39,66	60	50,97	29
Mexico	2022	28,18	52	51,14	43	47,05	39
Brazil	2022	28,05	53	45,59	53	45,12	49
Bulgaria	2018	27,67	54	55,97	35	36,27	72
Russian Federation	2021	27,45	55	46,96	48	40,02	63
Panama	2022	27,30	56	42,13	57	48,88	37
Lebanon	2018	27,15	57	31,64	67	53,68	24
India	2022	26,63	58	47,83	47	44,21	51
Jordan	2019	26,11	59	44,34	55	41,56	59
Viet Nam	2017	25,75	60	41,57	58	45,95	44
Kazakhstan	2021	25,60	61	42,83	56	38,58	67
Colombia	2022	25,48	62	45,76	52	43,37	53
Serbia	2022	24,69	63	50,94	45	37,64	68
Iran	2022	24,08	64	28,98	69	57,00	15
Argentina	2018	23,19	65	39,05	61	35,90	73
Indonesia	2022	23,15	66	51,00	44	38,83	66
Morocco	2022	22,42	67	45,36	54	36,60	71
Egypt, Arab Republic of	2022	21,24	68	38,12	63	41,69	58
Guatemala	2022	19,06	69	28,90	70	46,91	40
Ecuador	2019	18,61	70	27,45	72	45,43	46
Bosnia and Herzegovina	2017	17,48	71	30,22	68	35,32	75
Angola	2020	12,31	72	19,34	75	42,46	55
Pakistan	2019	12,23	73	27,85	71	31,39	77
Togo	2022	12,22	74	26,53	73	35,48	74
Venezuela	2022	11,93	75	17,34	78	43,43	52
Sudan	2021	11,31	76	17,92	76	45,78	45
Burkina Faso	2020	11,10	77	21,95	74	36,88	70
Madagascar	2019	5,09	78	17,49	77	26,02	78

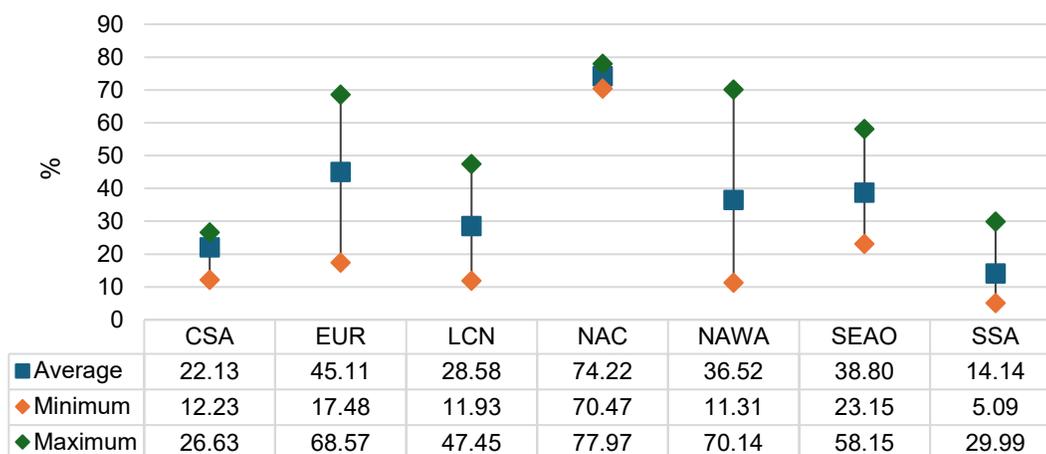
FEI = Female Entrepreneurship Index.
Source: Authors' calculations.

B. Regional Highlights

We examined the macro-regional differences that can be observed in the FEI scores. Based on the World Bank income group classification, the economies can be classified into seven regions. Geographical regions correspond to the United Nations' publication on standard economy or area codes for statistical use (M49), as follows: EUR = Europe; NAC = Northern America; LCN = Latin America and the Caribbean; CSA = Central and Southern Asia; SEAO = Southeast Asia, East Asia, and Oceania; NAWA = Northern Africa and Western Asia; and SSA = Sub-Saharan Africa.

Figure 2 illustrates the average, minimum, and maximum FEI scores for each of the regions listed above. It is evident that the SSA region has the lowest performance, while NAC stands out as the highest performer. However, it is important to note that only two economies are categorized within the NAC region, and only five belong to the SSA region. Additionally, regions with a greater number of economies, such as EUR and NAWA, show considerable diversity in their scores.

Figure 2: Average, Maximum, and Minimum Female Entrepreneurship Index 2024 Scores for Each Macro Region



CSA = Central and South Asia; EUR = Europe; LCN = Latin America and the Caribbean; NAC = Northern America; NAWA = Northern Africa and Western Asia; SEAO = Southeast Asia, East Asia, and Oceania; SSA = Sub-Saharan Africa.

Source: Authors' calculations.

C. The Female Entrepreneurship Index 2024 Subindex and Pillar Level Rankings

Table 4 provides a detailed breakdown of the FEI along with its three subindices: entrepreneurial attitudes, entrepreneurial abilities, and entrepreneurial aspirations. The scores and ranks for each subindex highlight the strengths and weaknesses of various economies in supporting high-potential productive female entrepreneurship. There are 8 economies in the leaders category, 10 in the followers, 21 in the catchers-up, 28 in the laggards, and 11 in the tailenders. The performance across the subindices among the clusters seem to be quite balanced. This is somewhat different if we look at pillar level performances.

Top performers:

- (i) The United States Leads with the highest overall FEI score of 77.97, ranking first in both abilities and aspirations, and second in attitudes.
- (ii) Canada excels in supporting female entrepreneurship, particularly in abilities (third place) and aspirations (fourth place), ranking second overall in the FEI.
- (iii) The United Arab Emirates consistently scores high across all subindices, with notable ranks in aspirations (third place) and abilities (fourth place).

Table 4: Female Entrepreneurship Index 2024 Subindex Scores and Ranks

Economy	Attitudes		Abilities		Aspirations		FEI	
	Score	Rank	Score	Rank	Score	Rank	FEI	FEI Rank
United States	74.41	2	81.59	1	77.91	1	77.97	1
Canada	66.85	6	74.29	3	70.27	4	70.47	2
United Arab Emirates	67.78	5	71.20	4	71.43	3	70.14	3
Ireland	61.35	9	76.56	2	67.80	6	68.57	4
Netherlands	75.51	1	59.62	10	68.48	5	67.87	5
Sweden	71.46	3	67.17	6	60.68	8	66.43	6
Norway	68.14	4	65.72	7	59.18	11	64.34	7
Switzerland	56.91	11	69.24	5	61.61	7	62.59	8
United Kingdom	62.02	8	59.90	9	56.09	16	59.34	9
Australia	62.61	7	64.21	8	47.64	22	58.15	10
Germany	51.72	20	48.55	21	72.26	2	57.51	11
Estonia	54.36	15	59.13	11	58.61	13	57.37	12
Luxembourg	49.29	24	59.12	12	58.62	12	55.68	13
Israel	52.90	18	53.98	13	57.40	14	54.76	14
Austria	58.01	10	49.04	19	57.02	15	54.69	15
France	55.73	12	47.52	24	60.21	9	54.49	16
Taipei, China	44.23	28	50.93	15	59.77	10	51.65	17
Qatar	48.57	26	48.00	23	53.11	18	49.89	18
Cyprus	52.92	17	50.44	17	43.75	25	49.04	19
Puerto Rico	51.41	21	50.61	16	40.32	33	47.45	20
Latvia	49.06	25	48.49	22	42.26	30	46.60	21
Finland	55.58	13	46.49	26	36.99	39	46.35	22
Saudi Arabia	55.31	14	40.65	30	41.38	31	45.78	23
Portugal	49.74	23	36.39	35	47.80	21	44.64	24
Spain	41.21	32	47.25	25	45.06	23	44.51	25
Republic of Korea	49.90	22	36.77	34	43.90	24	43.52	26
Lithuania	43.93	29	48.96	20	37.54	38	43.48	27
Chile	52.42	19	37.97	32	36.19	40	42.20	28
Japan	26.22	57	49.27	18	51.07	19	42.19	29
Slovenia	45.48	27	45.43	27	34.98	42	41.96	30
Croatia	42.07	30	43.63	28	39.89	35	41.86	31
Kuwait	39.82	36	39.69	31	43.63	26	41.05	32
Malaysia	34.50	41	37.45	33	48.85	20	40.27	33
Uruguay	52.97	16	33.43	42	29.19	51	38.53	34
Romania	37.11	37	51.31	14	25.71	54	38.04	35
Italy	34.90	39	35.12	38	43.58	27	37.87	36
Greece	40.78	35	33.57	41	38.29	37	37.54	37
Slovakia	32.97	44	31.43	47	42.47	29	35.62	38
Hungary	33.68	43	42.16	29	30.31	48	35.38	39
Oman	41.21	33	34.68	39	29.75	49	35.21	40
Türkiye	29.99	49	20.12	67	55.49	17	35.20	41
Dominican Republic	41.64	31	33.26	44	23.39	58	32.76	42
People's Republic of China	34.32	42	25.16	59	38.72	36	32.73	43
Thailand	20.21	65	31.74	46	43.48	28	31.81	44
Belarus	27.71	54	26.93	54	39.94	34	31.53	45
Poland	41.03	34	32.31	45	20.01	65	31.11	46
North Macedonia	27.31	55	35.13	37	29.28	50	30.57	47
South Africa	24.03	61	33.41	43	32.52	44	29.99	48
Tunisia	31.02	48	21.83	65	35.85	41	29.56	49
Armenia	26.84	56	26.77	55	33.06	43	28.89	50
Peru	34.74	40	27.17	53	24.55	56	28.82	51
Mexico	29.78	50	26.15	57	28.60	52	28.18	52
Brazil	35.54	38	22.33	64	26.30	53	28.05	53
Bulgaria	21.58	64	35.77	36	25.66	55	27.67	54

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Economy	Attitudes		Abilities		Aspirations		FEI	
	Score	Rank	Score	Rank	Score	Rank	FEI	FEI Rank
Russian Federation	24.76	59	26.53	56	31.05	46	27.45	55
Panama	28.27	52	30.10	49	23.53	57	27.30	56
Lebanon	15.44	71	24.82	61	41.19	32	27.15	57
India	25.31	58	34.11	40	20.46	63	26.63	58
Jordan	24.38	60	31.14	48	22.82	59	26.11	59
Viet Nam	17.44	68	27.96	52	31.85	45	25.75	60
Kazakhstan	31.77	46	25.93	58	19.11	68	25.60	61
Colombia	31.65	47	23.24	62	21.56	61	25.48	62
Serbia	28.26	53	25.12	60	20.70	62	24.69	63
Iran	18.25	67	23.04	63	30.94	47	24.08	64
Argentina	22.85	62	29.90	50	16.82	70	23.19	65
Indonesia	31.96	45	18.83	68	18.66	69	23.15	66
Morocco	28.55	51	18.68	69	20.02	64	22.42	67
Egypt, Arab Republic of	16.15	70	28.45	51	19.11	67	21.24	68
Guatemala	19.83	66	18.07	70	19.26	66	19.06	69
Ecuador	22.31	63	17.71	71	15.81	72	18.61	70
Bosnia and Herzegovina	9.40	76	21.10	66	21.93	60	17.48	71
Angola	14.65	73	12.19	73	10.09	76	12.31	72
Pakistan	10.75	75	14.79	72	11.14	74	12.23	73
Togo	15.08	72	9.44	77	12.12	73	12.22	74
Venezuela	17.16	69	9.61	76	9.02	77	11.93	75
Sudan	7.45	77	10.42	74	16.04	71	11.31	76
Burkina Faso	13.07	74	10.04	75	10.17	75	11.10	77
Madagascar	6.60	78	5.39	78	3.29	78	5.09	78
Leaders	67.80		70.67		67.17		68.55	
Followers	53.94		54.04		58.07		55.35	
Catchers-up	44.30		42.37		39.54		42.07	
Laggards	28.13		27.46		29.21		28.27	
Tailenders	13.86		14.29		13.45		13.87	

FEI = Female Entrepreneurship Index.

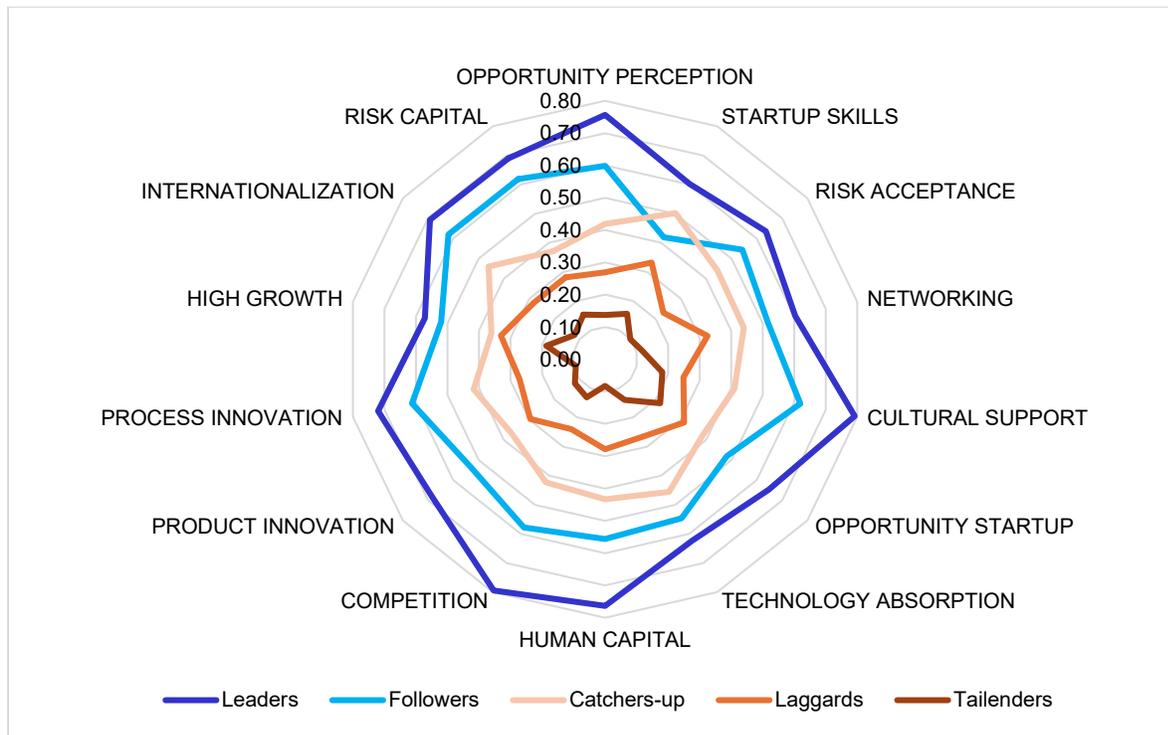
Notes: Dark blue = leaders, light blue = followers, yellow = catchers-up, light orange = laggards, dark orange = tailenders.

Source: Authors' calculations.

Figure 3 shows how each cluster performs across the 14 pillars of the FEI. The diagram shows that:

- (i) Leaders (dark blue line) excel in most dimensions, particularly in the opportunity perception, cultural support, human capital, competition, process innovation, internationalization, and risk capital categories.
- (ii) Followers (light blue line) are relatively strong but weaker in all areas compared to the leaders, especially in startup skills and opportunity startup.
- (iii) Catchers-up (pink line) approach the followers level in certain areas, like startup skills, but fall behind in others, particularly product innovation and high growth.
- (iv) Laggards (light orange line) generally perform more weakly but achieve a similar level in high growth as the catchers-up.
- (v) Tailenders (dark orange line) lag behind significantly in all categories, indicating that these economies have weak national-level entrepreneurial systems across all dimensions.

Figure 3: Average Pillar Scores of the Five Clusters



Source: Authors' calculations.

According to Table 5, the strongest pillars for the leaders seem to be competition and cultural support, while their weakest ones are high growth, startup skills, networking, and technology absorption. Their pillar scores vary between 56.21 and 78.24.

For followers, the strongest pillars are internationalization, cultural support, and risk capital. Their weakest pillar score is achieved in case of the startup skills. The average score of the followers varies between 42 and 62 across the 14 pillars.

Catchers-up seem to have the most balanced scores across the pillars; they vary between 36 and 50. They are the only cluster that performs better in case of a pillar than the cluster above: they have a score of 50 in the case of startup skills, which is their strongest pillar, while it is the weakest one of the followers cluster. The weaknesses of the catchers-up lie in the areas of high growth, product innovation, and risk capital.

The strong suit of laggards seems to be high growth as well as startup skills, while their performance is weakest in the case of risk acceptance and competition. Their pillar scores vary between 23 and 33.

Tailenders seem to perform the best in case of opportunity startups out of their 14 pillar scores. Their weaknesses seem to be in case of human capital and process innovation. Their pillar scores vary between 8 and 22.

Table 5: Average Pillar Scores of the Five Clusters

	Opportunity perception	Start-up skills	Risk acceptance	Networking	Cultural support	Opportunity start-up	Technology absorption	Human capital	Competition	Product innovation	Process innovation	High growth	Internationalization	Risk capital
Leaders	0.76	0.60	0.64	0.60	0.79	0.65	0.62	0.76	0.79	0.68	0.72	0.57	0.69	0.69
Followers	0.60	0.42	0.54	0.52	0.62	0.48	0.55	0.56	0.58	0.53	0.61	0.52	0.62	0.62
Catchers-up	0.42	0.50	0.44	0.44	0.41	0.38	0.46	0.43	0.42	0.37	0.42	0.36	0.46	0.37
Laggards	0.27	0.33	0.23	0.33	0.25	0.31	0.27	0.28	0.24	0.30	0.27	0.33	0.28	0.28
Tailenders	0.14	0.16	0.10	0.12	0.18	0.22	0.14	0.08	0.13	0.12	0.09	0.19	0.12	0.15

Source: Authors' calculations.

Table 6 presents detailed pillar values of the FEI for different economies. Each pillar represents a different aspect of the national-level entrepreneurial system, such as opportunity perception, startup skills, risk acceptance, networking, cultural support, opportunity startup, technology absorption, human capital, competition, product innovation, process innovation, high growth, internationalization, and risk capital.

Table 6: Pillar Values of the Female Entrepreneurship Index 2024

Economy	1	2	3	4	5	6	7	8	9	10	11	12	13	14
United States	0.76	0.84	0.53	0.76	0.82	0.88	0.57	0.91	0.91	0.82	0.84	0.72	0.61	0.91
Canada	0.74	0.72	0.58	0.50	0.80	0.86	0.42	0.82	0.86	0.83	0.76	0.64	0.56	0.72
United Arab Emirates	0.68	0.51	0.61	0.75	0.84	0.87	0.43	0.86	0.69	0.63	0.54	0.87	0.81	0.72
Ireland	0.79	0.50	0.54	0.43	0.81	0.74	0.69	0.78	0.85	0.70	0.62	0.66	0.87	0.55
Netherlands	0.82	0.48	0.82	0.82	0.82	0.34	0.73	0.55	0.76	0.63	0.75	0.56	0.72	0.78
Sweden	0.82	0.64	0.62	0.67	0.82	0.34	0.82	0.72	0.80	0.61	0.82	0.33	0.70	0.57
Norway	0.82	0.68	0.73	0.34	0.82	0.57	0.56	0.80	0.70	0.60	0.65	0.56	0.54	0.60
Switzerland	0.62	0.44	0.65	0.54	0.60	0.58	0.75	0.67	0.77	0.65	0.77	0.24	0.75	0.67
United Kingdom	0.62	0.57	0.45	0.63	0.83	0.54	0.46	0.60	0.79	0.40	0.70	0.54	0.75	0.42
Australia	0.56	0.75	0.55	0.63	0.64	0.58	0.61	0.77	0.60	0.33	0.64	0.49	0.24	0.68
Germany	0.51	0.36	0.60	0.31	0.81	0.35	0.48	0.45	0.67	0.80	0.78	0.53	0.69	0.81
Estonia	0.67	0.46	0.72	0.30	0.58	0.81	0.40	0.54	0.62	0.66	0.62	0.52	0.67	0.46
Luxembourg	0.66	0.10	0.53	0.53	0.64	0.53	0.60	0.54	0.69	0.63	0.42	0.50	0.69	0.69
Israel	0.54	0.25	0.49	0.77	0.60	0.29	0.78	0.73	0.36	0.35	0.73	0.57	0.63	0.59
Austria	0.67	0.67	0.62	0.37	0.58	0.26	0.70	0.25	0.75	0.52	0.69	0.28	0.77	0.60
France	0.62	0.45	0.53	0.67	0.51	0.14	0.63	0.54	0.60	0.66	0.65	0.53	0.64	0.54
Taipei,China	0.60	0.43	0.54	0.24	0.40	0.60	0.46	0.59	0.38	0.44	0.58	0.51	0.72	0.74
Qatar	0.53	0.15	0.41	0.72	0.61	0.72	0.35	0.54	0.30	0.55	0.31	0.72	0.41	0.66
Cyprus	0.28	0.69	0.48	0.71	0.47	0.52	0.53	0.63	0.34	0.26	0.46	0.45	0.65	0.37
Puerto Rico	0.35	0.66	0.61	0.70	0.25	0.35	0.39	0.70	0.58	0.49	0.17	0.58	0.56	0.21
Latvia	0.48	0.66	0.70	0.24	0.37	0.32	0.50	0.53	0.59	0.27	0.37	0.46	0.74	0.27
Finland	0.65	0.49	0.41	0.65	0.59	0.39	0.45	0.58	0.44	0.43	0.60	0.02	0.37	0.43
Saudi Arabia	0.46	0.70	0.33	0.70	0.57	0.65	0.11	0.35	0.51	0.45	0.32	0.50	0.21	0.59
Portugal	0.54	0.52	0.52	0.36	0.56	0.37	0.41	0.25	0.43	0.37	0.60	0.33	0.64	0.45
Spain	0.27	0.60	0.46	0.47	0.27	0.27	0.74	0.41	0.47	0.36	0.53	0.23	0.55	0.58
Republic of Korea	0.38	0.63	0.65	0.34	0.49	0.03	0.65	0.37	0.42	0.43	0.65	0.42	0.23	0.47
Lithuania	0.52	0.40	0.44	0.38	0.46	0.40	0.39	0.64	0.53	0.14	0.40	0.35	0.66	0.33
Chile	0.44	0.66	0.35	0.65	0.52	0.42	0.24	0.41	0.45	0.60	0.26	0.46	0.04	0.45
Japan	0.12	0.08	0.64	0.16	0.32	0.20	0.64	0.59	0.55	0.68	0.68	0.36	0.40	0.44
Slovenia	0.53	0.55	0.44	0.26	0.48	0.33	0.64	0.46	0.39	0.31	0.51	0.01	0.64	0.27
Croatia	0.53	0.67	0.20	0.41	0.29	0.44	0.69	0.31	0.31	0.35	0.45	0.41	0.66	0.12
Kuwait	0.22	0.47	0.37	0.59	0.34	0.44	0.40	0.46	0.28	0.23	0.11	0.69	0.45	0.70

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Economy	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Malaysia	0.47	0.18	0.37	0.31	0.39	0.66	0.04	0.29	0.51	0.66	0.47	0.46	0.52	0.33
Uruguay	0.59	0.57	0.32	0.62	0.55	0.36	0.36	0.21	0.41	0.31	0.26	0.41	0.29	0.18
Romania	0.60	0.38	0.25	0.20	0.43	0.70	0.41	0.57	0.38	0.21	0.23	0.30	0.38	0.16
Italy	0.31	0.36	0.49	0.26	0.33	0.11	0.70	0.26	0.32	0.56	0.51	0.26	0.45	0.40
Greece	0.30	0.73	0.42	0.17	0.42	0.16	0.53	0.36	0.30	0.26	0.56	0.16	0.46	0.48
Slovakia	0.26	0.24	0.50	0.35	0.30	0.34	0.26	0.30	0.35	0.50	0.47	0.22	0.56	0.36
Hungary	0.23	0.22	0.61	0.39	0.23	0.65	0.43	0.32	0.28	0.18	0.46	0.25	0.43	0.20
Oman	0.54	0.32	0.23	0.67	0.30	0.29	0.32	0.39	0.39	0.18	0.15	0.45	0.32	0.38
Türkiye	0.10	0.69	0.22	0.24	0.25	0.21	0.25	0.13	0.21	0.66	0.47	0.65	0.49	0.50
Dominican Republic	0.42	0.43	0.30	0.66	0.27	0.56	0.12	0.34	0.31	0.42	0.09	0.15	0.34	0.18
People's Republic of China	0.25	0.51	0.23	0.37	0.36	0.08	0.27	0.36	0.30	0.29	0.46	0.42	0.18	0.58
Thailand	0.33	0.20	0.17	0.07	0.26	0.60	0.25	0.25	0.17	0.58	0.35	0.34	0.61	0.30
Belarus	0.05	0.46	0.08	0.59	0.20	0.10	0.52	0.36	0.10	0.23	0.23	0.51	0.60	0.43
Poland	0.63	0.45	0.42	0.31	0.25	0.06	0.52	0.38	0.34	0.07	0.35	0.19	0.17	0.22
North Macedonia	0.43	0.29	0.19	0.25	0.21	0.50	0.40	0.30	0.21	0.28	0.22	0.41	0.36	0.19
South Africa	0.28	0.18	0.23	0.16	0.36	0.43	0.13	0.51	0.26	0.42	0.30	0.43	0.32	0.16
Tunisia	0.35	0.37	0.11	0.39	0.33	0.15	0.29	0.23	0.21	0.19	0.37	0.34	0.29	0.61
Armenia	0.37	0.27	0.08	0.28	0.34	0.11	0.33	0.28	0.35	0.31	0.27	0.58	0.33	0.17
Peru	0.34	0.45	0.44	0.33	0.18	0.52	0.15	0.15	0.26	0.31	0.11	0.26	0.29	0.26
Mexico	0.30	0.31	0.38	0.38	0.12	0.43	0.15	0.13	0.34	0.40	0.22	0.43	0.18	0.20
Brazil	0.33	0.42	0.14	0.64	0.25	0.36	0.16	0.15	0.23	0.18	0.32	0.46	0.08	0.27
Bulgaria	0.09	0.24	0.31	0.18	0.26	0.60	0.31	0.32	0.19	0.17	0.33	0.11	0.44	0.23
Russian Federation	0.10	0.33	0.21	0.47	0.14	0.11	0.41	0.49	0.05	0.23	0.36	0.52	0.24	0.21
Panama	0.32	0.36	0.25	0.29	0.19	0.46	0.18	0.40	0.16	0.27	0.07	0.52	0.14	0.18
Lebanon	0.09	0.14	0.03	0.34	0.17	0.33	0.17	0.17	0.32	0.62	0.39	0.08	0.65	0.32
India	0.36	0.21	0.28	0.08	0.34	0.60	0.04	0.33	0.40	0.30	0.22	0.27	0.09	0.15
Jordan	0.26	0.11	0.11	0.31	0.42	0.21	0.51	0.08	0.45	0.20	0.27	0.18	0.21	0.28
Viet Nam	0.22	0.16	0.14	0.15	0.21	0.54	0.06	0.29	0.23	0.43	0.23	0.17	0.30	0.46
Kazakhstan	0.28	0.45	0.31	0.25	0.29	0.00	0.32	0.52	0.20	0.01	0.12	0.32	0.04	0.47
Colombia	0.27	0.38	0.30	0.46	0.17	0.28	0.18	0.30	0.17	0.25	0.14	0.39	0.20	0.10
Serbia	0.22	0.49	0.18	0.26	0.26	0.15	0.29	0.26	0.30	0.10	0.36	0.17	0.27	0.13
Iran	0.05	0.29	0.04	0.41	0.12	0.20	0.42	0.23	0.07	0.31	0.36	0.29	0.23	0.36
Argentina	0.14	0.42	0.10	0.26	0.22	0.41	0.34	0.20	0.25	0.30	0.17	0.13	0.10	0.14
Indonesia	0.34	0.24	0.41	0.38	0.23	0.39	0.03	0.12	0.21	0.17	0.17	0.24	0.07	0.29
Morocco	0.35	0.22	0.30	0.26	0.30	0.04	0.39	0.23	0.09	0.10	0.21	0.46	0.11	0.13
Egypt, Arab Republic of	0.19	0.20	0.20	0.05	0.17	0.33	0.34	0.21	0.26	0.06	0.22	0.16	0.05	0.47
Guatemala	0.25	0.10	0.27	0.23	0.15	0.40	0.04	0.06	0.22	0.28	0.03	0.39	0.16	0.09
Ecuador	0.14	0.29	0.12	0.33	0.23	0.28	0.17	0.10	0.16	0.16	0.17	0.31	0.02	0.13
Bosnia and Herzegovina	0.02	0.18	0.05	0.06	0.17	0.26	0.28	0.12	0.18	0.11	0.17	0.10	0.65	0.07
Angola	0.15	0.04	0.12	0.21	0.22	0.25	0.10	0.02	0.13	0.14	0.00	0.24	0.04	0.08
Pakistan	0.21	0.02	0.04	0.04	0.22	0.39	0.03	0.09	0.08	0.15	0.13	0.14	0.00	0.14
Togo	0.21	0.11	0.12	0.11	0.21	0.21	0.06	0.02	0.09	0.06	0.05	0.22	0.15	0.12
Venezuela	0.00	0.63	0.05	0.13	0.05	0.08	0.17	0.12	0.02	0.17	0.11	0.08	0.07	0.02
Sudan	0.05	0.08	0.04	0.08	0.13	0.11	0.10	0.16	0.05	0.05	0.03	0.19	0.06	0.47
Burkina Faso	0.21	0.05	0.04	0.04	0.31	0.07	0.14	0.02	0.17	0.11	0.08	0.12	0.11	0.08
Madagascar	0.09	0.01	0.05	0.03	0.15	0.01	0.11	0.02	0.07	0.01	0.02	0.09	0.01	0.03

Notes: 1 = opportunity perception, 2 = startup skills, 3 = risk acceptance, 4 = networking, 5 = cultural support, 6 = opportunity startup, 7 = technology absorption, 8 = human capital, 9 = competition, 10 = product innovation, 11 = process innovation, 12 = high growth, 13 = internationalization, 14 = risk capital. Notes: Dark blue = leaders, light blue = followers, yellow = catchers-up, light orange = laggards, dark orange = tailenders.

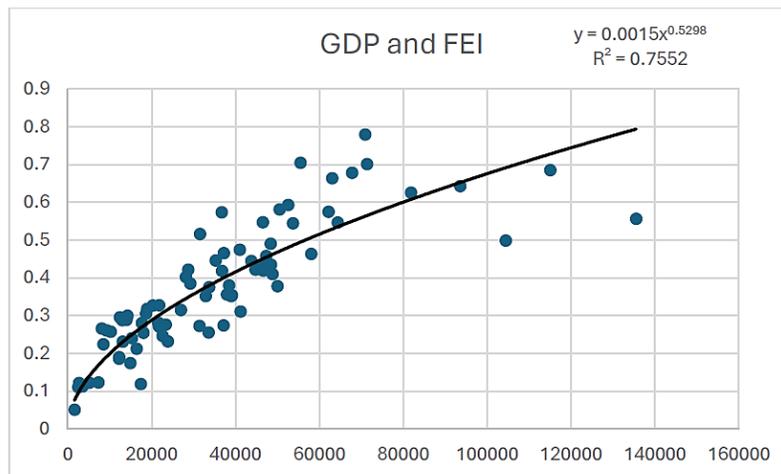
Source: Authors' calculations.

IV. CONCLUSION AND FUTURE RESEARCH AREAS

The Female Entrepreneurship Index (FEI) measures the *systemic conditions* that determine the *potential* for women’s entrepreneurial success. It captures the quality and inclusiveness of the National System of Entrepreneurship (NSE) that supports women—how conducive the environment is, what capabilities women possess, what ambitions they pursue, and how institutions enable or constrain them. Importantly, the FEI integrates both contextual factors—such as education systems, market conditions, governance quality, and access to finance—and perceptual dimensions, reflecting *how women themselves experience and perceive* these conditions. By combining objective institutional indicators with subjective measures of attitudes, confidence, and opportunity recognition, the FEI offers a more comprehensive understanding of the system’s capacity to foster productive female entrepreneurship.

An economy’s economic development and GDP levels seem to be directly connected to its FEI scores, since the Pearson’s correlation coefficient between the FEI 2024 and GDP per capita, purchasing power parity (current international \$) is $r = 0.82$, which suggests a strong, positive relationship. However, if we look more closely at the data in Figure 4, we can see many data points both above and below the trend line; hence, we can conclude that several economies do not fit this pattern. Economies like Switzerland, Norway, Qatar, Ireland, and Luxemburg have lower FEI scores than what their GDP would suggest, while Taipei,China; Estonia; Canada; the United Arab Emirates; and the United States are above the line, meaning their GDP would indicate a lower FEI score. In conclusion, higher GDP per capita does not necessarily mean a higher FEI score.

Figure 4: Correlation Between Female Entrepreneurship Index 2024 Scores and Gross Domestic Product per Capita



FEI = Female Entrepreneurship Index, GDP = gross domestic product.
Source: Authors’ calculations.

While the overall correlation between FEI and GDP per capita is strong, a closer look reveals that the relationship is more complex than a simple linear trend. Economic prosperity may create favorable conditions for entrepreneurship, but *it does not automatically translate into an equally*

supportive environment for women. Differences in institutional quality, gender norms, and access to resources often shape how women can benefit from an economy's economic progress. In some high-income economies, the formal structures for entrepreneurship are well developed, yet women's perceptions of opportunity, confidence, and inclusion may lag behind. This divergence between economic prosperity and FEI performance suggests that even when economies possess advanced economies and seemingly supportive institutional frameworks, *the lived experience and perception of women within these systems may tell a different story.* Thus, differences between GDP per capita and FEI values highlight meaningful variations in how women *experience* and *interpret* their entrepreneurial ecosystems. Understanding this distinction is critical for designing interventions that do not only improve formal frameworks but also address underlying cultural and perceptual barriers.

Beyond its analytical value, the FEI also provides clear practical guidance for policymakers and development practitioners. Because it decomposes national performance into specific pillars—each reflecting distinct institutional and individual dimensions—it allows for a precise diagnosis of which areas most constrain women's entrepreneurial potential in a given economy. While no single pattern applies universally, the FEI highlights that improving female entrepreneurship requires *context-specific interventions tailored to the economy's own structural and cultural conditions.*

Among the more advanced economies—typically those classified as Leaders, Followers, or Catchers-up in the FEI ranking—economies such as Germany, Norway, Ireland, and Estonia reveal persistent weaknesses in Networking, indicating that women remain less embedded in influential business and innovation networks. Others, including Sweden, Switzerland, Finland, Slovenia, and Slovakia score lowest on High Growth, suggesting that women-led ventures in advanced markets face barriers to scaling, internationalization, or entry into high-value sectors. A second group of economies (Canada, Saudi Arabia, Malaysia, the United Arab Emirates) show deficits in Technology Absorption, pointing to an underrepresentation of women in technology-intensive industries and digital innovation. In several advanced economies (the Netherlands, France, Republic of Korea, Italy, and Greece), the weakest dimension—Opportunity Startup—indicates that women are less likely to engage in entrepreneurship driven by opportunity. Despite favorable economic and institutional conditions, structural advantages do not automatically translate into entrepreneurial motivation or ambition. This gap reflects cultural and perceptual barriers, such as risk aversion, stable employment alternatives, and limited exposure to entrepreneurial role models. Meanwhile, several high-income economies such as Japan, Israel, Luxembourg, and Qatar exhibit low scores in Startup Skills, revealing gaps in entrepreneurial confidence and preparedness despite supportive environments. Finally, the United States stands out with Risk Acceptance as its weakest dimension, underscoring that even in highly developed entrepreneurial systems, women's risk tolerance and growth ambition remain constrained by cultural norms and implicit biases. Taken together, these patterns suggest that *in advanced economies, the remaining barriers to female entrepreneurship lie in the subtler domains of risk behavior, technological inclusion, and network access*—areas that require tailored policy responses to unlock women's full entrepreneurial potential.

In the less developed clusters of the FEI (those classified as Laggards or Tailenders), the most common weaknesses—Risk Acceptance, Process Innovation, Technology Absorption, Human Capital, and Opportunity Perception—highlight foundational gaps in education, technology use, and institutional support. Women in these contexts often lack access to quality education and training, have limited exposure to digital tools and innovation ecosystems, and face strong social and cultural disincentives to take entrepreneurial risks. As a result, female entrepreneurship remains concentrated in small-scale, low-technology activities with limited growth potential and weak international integration. Strengthening these ecosystems therefore requires *long-term investment in women’s skills, technological capacity, and institutional inclusion, alongside cultural change to improve their perceived agency and opportunity space.*

Several promising avenues for future research emerge from these findings. First, further investigation is needed into how institutional factors interact with women’s subjective perceptions in shaping entrepreneurial activity—specifically, how cultural norms, social expectations, and confidence levels influence the quality and growth potential of women-led ventures. Second, research should explore the role of technology adoption, digital competencies, and network access in strengthening women’s entrepreneurial participation, particularly within advanced economies. For less developed economies, future studies could examine the impact of policies aimed at improving education, human capital, and institutional inclusion. Finally, an important direction would be to assess whether development interventions effectively target the constraints women themselves perceive, and to what extent digitalization and emerging technologies can compensate for existing institutional shortcomings.

REFERENCES

- Acs, Zoltan, Erkki Autio, and Lázló Szerb. 2014. "National Systems of Entrepreneurship: Measurement Issues and Policy Implications". *Research Policy* 43(3): 476–494.
- Acs, Zoltan, Saul Estrin, Tomasz Mickiewicz, and Lázló Szerb. 2018. "Entrepreneurship, Institutional Economics, and Economic Growth: An Ecosystem Perspective". *Small Business Economics* 51: 501–514.
- Aguinis, Herman, Isabel Suárez-González, Gustavo Lannelongue, and Harry Joo. 2012. "Scholarly Impact Revisited". *Academy of Management Perspectives* 26(2): 105–132.
- Aidis, Ruta, and Julie Weeks. 2016. "Mapping the Gendered Ecosystem: The Evolution of Measurement Tools for Comparative High-Impact Female Entrepreneur Development". *International Journal of Gender and Entrepreneurship* 8(4): 330–352.
- Ali, Imran, Murad Ali, and Saeed Badghish. 2019. "Symmetric and Asymmetric Modeling of Entrepreneurial Ecosystem in Developing Entrepreneurial Intentions Among Female University Students in Saudi Arabia". *International Journal of Gender and Entrepreneurship* 11(4): 435–458.
- Allen, I. Elaine, Amanda Elam, Nan Langowitz, and Monica Dean. 2008. *GEM Report on Women and Entrepreneurship 2007*.
- Aljarodi, Abdullah, Tojo Thatchenkery, and David Urbano. 2024. "Female Entrepreneurship in the Start-Up Ecosystem of Saudi Arabia". *Journal of Enterprising Communities: People and Places in the Global Economy* 18(5): 964–988.
- Aparicio, Sebastian, David Audretsch, Maria Noguera, and David Urbano. 2022. "Can Female Entrepreneurs Boost Social Mobility in Developing Countries? An Institutional Analysis". *Technological Forecasting and Social Change* 175: 121401.
- Autio, Erkki, Lázló Szerb, Eva Komlósi, and Mónika Tiszberger. 2018. *The European Index of Digital Entrepreneurship Systems*. Luxembourg: Publications Office of the European Union.
- Avnimelech, Gil, and Eyal Rechter. 2023. "How and Why Accelerators Enhance Female Entrepreneurship". *Research Policy* 52(1): 104669.
- Azeem, Muhammad, Alison Sheridan, and Sujana Adapa. 2022. "Women to Women: Enabling Innovation and Firm Performance in Developing Countries". *Emerging Markets Review* 51: 100879.
- Balachandra, Lakshmi, Tony Briggs, Kim Eddleston, and Candida Brush. 2019. "Don't Pitch Like a Girl! How Gender Stereotypes Influence Investor Decisions". *Entrepreneurship Theory and Practice* 43(1): 116–137.
- Bandura, Albert. 1991. "Social Cognitive Theory of Self-Regulation". *Organizational Behavior and Human Decision Processes* 50(2): 248–287.
- Bannò, Mariasole, Giorgia D'Allura, Graziano Collier, and Celeste Varum. 2023. "Men Are from Mars, Women Are from Venus: On Lenders' Stereotypical Views and the Implications for a Firm's Debt". *Journal of Management and Governance* 27(3): 651–687.
- Baumol, William. 1990. "Entrepreneurship: Productive, Unproductive, and Destructive". *Journal of Political Economy* 98(5): 893–921.
- Bell-Masterson, Jordan, and Dane Stangler. 2015. "Measuring an Entrepreneurial Ecosystem". SSRN. <http://dx.doi.org/10.2139/ssrn.2580336>

- Berger, Elisabeth, and Andreas Kuckertz. 2016. "Female Entrepreneurship in Startup Ecosystems Worldwide". *Journal of Business Research* 69(11): 5163–5168.
- Binh, Hoang, Huong-Giang Pham, and Khanh Nguyen. 2024. "Explore the Roles of Female Entrepreneurship in Promoting Economic Growth in Asia: A Panel Data Analysis". *International Journal of Application on Economics and Business* 2(2): 3780–3792.
- Brooks, Alison, Laura Huang, Sarah Kearney, and Fiona Murray. 2014. "Investors Prefer Entrepreneurial Ventures Pitched by Attractive Men". *Proceedings of the National Academy of Sciences* 111(12): 4427–4431.
- Brownell, Katrina, Jill Kickul, and Diana Hechavarria. 2024. "Power to the She: Early-Stage Female Entrepreneurs and Innovation". *International Journal of Gender and Entrepreneurship* 16(4): 425–445.
- Brush, Candida, Anne de Bruin, and Friederike Welter. 2009. "A Gender-Aware Framework for Women's Entrepreneurship". *International Journal of Gender and Entrepreneurship* 1(1): 8–24.
- Brush, Candida, Linda Edelman, Tatiana Manolova, and Friederike Welter. 2019. "A Gendered Look at Entrepreneurship Ecosystems". *Small Business Economics* 53: 393–408.
- Brydges, Taylor, and Rhiannon Pugh. 2021. "Coming into Fashion: Expanding the Entrepreneurial Ecosystem Concept to the Creative Industries Through a Toronto Case Study". *The Canadian Geographer* 65(3): 346–367.
- Bullough, Amanda, Ulrike Guelich, Tatiana Manolova, and Leon Schjoedt. 2022. "Women's Entrepreneurship and Culture: Gender Role Expectations and Identities, Societal Culture, and the Entrepreneurial Environment". *Small Business Economics* 58: 985–996.
- Bullough, Amanda, Diana Hechavarria, Candida Brush, and Linda Edelman, eds. 2019. *High-Growth Women's Entrepreneurship Programs, Policies and Practices*. Cheltenham: Edward Elgar Publishing.
- Carranza, Eliana, Chandra Dhakal, and Inessa Love. 2018. *Female Entrepreneurs: How and Why Are They Different?* Jobs Working Paper 20. Washington, DC: World Bank.
- Cao, Zhe, and Xuanwei Shi. 2021. "A Systematic Literature Review of Entrepreneurial Ecosystems in Advanced and Emerging Economies". *Small Business Economics* 57: 75–110.
- Cech, Erin, Brian Rubineau, Susan Silbey, and Caroll Seron. 2011. "Professional Role Confidence and Gendered Persistence in Engineering". *American Sociological Review* 76(5): 641–666.
- Chadwick, Ingrid, and Alexandra Dawson. 2024. "From Imposter Fears to Authenticity: A Typology of Women Entrepreneurs". *Small Business Economics* 62: 1025–1050.
- Content, Jeroen, Niels Bosma, Jacob Jordaan, and Mark Sanders. 2020. "Entrepreneurial Ecosystems, Entrepreneurial Activity and Economic Growth: New Evidence from European Regions". *Regional Studies* 54(8): 1007–1019.
- Crane, Sarah. 2022. "Entrepreneurship and Economic Growth: Does Gender Matter?" *International Journal of Gender and Entrepreneurship* 14(1): 3–25.
- Colombelli, Alessandra, Anna D'Ambrosio, and Chiara Ravetti. 2024. "Women in Innovative Start-Ups and Regional Inclusiveness: 'Green' and Socially-Responsible Companies". *Regional Studies* 59(1): 2340999.

- Cukier, Wendy, and Zohreh Chavoushi. 2020. "Facilitating Women Entrepreneurship in Canada: The Case of WEKH". *Gender in Management: An International Journal* 35(3): 303–318.
- Davis, Lewis, and Claudia Williamson. 2019. "Does Individualism Promote Gender Equality?" *World Development* 123: 104627.
- Dean, Hannah, Gretchen Larsen, Jackie Ford, and Muhammad Akram. 2019. "Female Entrepreneurship and the Metanarrative of Economic Growth: A Critical Review of Underlying Assumptions". *International Journal of Management Reviews* 21(1): 24–49.
- De Bruin, Anne, and Janine Swail. 2024. "Advancing Gender Inclusivity: Moving Entrepreneurial Ecosystems onto New Paths". *International Journal of Gender and Entrepreneurship* 17(1): 19–36.
- Díaz-García, Cristina, Angela González-Moreno, and Francisco Sáez-Martínez. 2013. "Gender Diversity Within R&D Teams: Its Impact on Radicalness of Innovation". *Innovation* 15(2): 149–160.
- Dinc, Muhammet, and Minela Hadzic. 2018. "The Mediating Impact of Personality Traits on Entrepreneurial Intention of Women in Northern Montenegro". *International Journal of Entrepreneurship and Small Business* 33(3): 400–416.
- Dutta, Nabamita, and Sushanta Mallick. 2023. "Gender and Access to Finance: Perceived Constraints of Majority-Female-Owned Indian Firms". *British Journal of Management* 34(2) 973–996.
- Elnadi, Moustafa, and Mohamed Gheith. 2021. "Entrepreneurial Ecosystem, Entrepreneurial Self-Efficacy, and Entrepreneurial Intention in Higher Education: Evidence from Saudi Arabia". *The International Journal of Management Education* 19: 100458.
- Ergo, Alemayehu, Deirdre O'Connor, and Tekle Leza Mega. 2024. "Women's Microbusiness Participation Decisions and Their Effect on Poverty in the Wolaita Zone, Southern Ethiopia". *Journal of Entrepreneurship in Emerging Economies* 16(5): 1235–1257.
- Espinoza Trujano, Jessica, and Friederike Welter. 2022. "Female Entrepreneurship". In Klaus Zimmermann, ed. *Handbook of Labor, Human Resources and Population Economics*. Cham: Springer International Publishing AG.
- Fang, Sheng, Chorching Goh, Mark Roberts, Lixin Xu, and Albert Zeufack. 2022. "Female Entrepreneurs and Productivity Around the World: Rule of Law, Network, Culture, and Gender Equality". *World Development* 154: 105846.
- Feldman, Maryann, Donald Siegel, and Mike Wright. 2019. "New Developments in Innovation and Entrepreneurial Ecosystems". *Industrial and Corporate Change* 28(4): 817–826.
- Franczak, Jennifer, Stephen Lanivich, and Samuel Adomako. 2023. "Filling Institutional Voids: Combinative Effects of Institutional Shortcomings and Gender on the Alertness – Opportunity Recognition Relationship". *Journal of Business Research* 155: 113444.
- Franzke, Sonja, Jie Wu, Fabien Froese, and Zi Xuan Chan. 2022. "Female Entrepreneurship in Asia: A Critical Review and Future Directions". *Asian Business & Management* 21: 343–372.
- Foss, Lene, Colette Henry, Helene Ahl, and Geir Mikalsen. 2019. "Women's Entrepreneurship Policy Research: A 30-Year Review of the Evidence". *Small Business Economics* 53(2): 409–429.

- García-Lillo, Francisco, Pedro Seva-Larrosa, and Eduardo Sánchez-García. 2023. "What Is Going on in Entrepreneurship Research? A Bibliometric and SNA Analysis". *Journal of Business Research* 158: 113624.
- GEM (Global Entrepreneurship Monitor). 2022. *GEM 2022/2023 Women's Entrepreneurship: Challenging Bias and Stereotypes*. www.gemconsortium.org/report/gem-20222023-womens-entrepreneurship-challenging-bias-and-stereotypes-2
- Gerke, Alina, Patrizia Ianiro-Dahm, Peter Muck, Nale Lehmann-Willenbrock, and Benedikt Hell. 2023. "How Do Female Entrepreneurs Differ from Male Entrepreneurs? Distinguishing Personality Traits Throughout the Entrepreneurial Journey". *The Journal of Entrepreneurship* 32(3): 525–552.
- Gundry, Lisa, Jill Kickul, Tatiana Iakovleva, and Alan Carsrud. 2014. "Women-Owned Family Businesses in Transitional Economies: Key Influences on Firm Innovativeness and Sustainability". *Journal of Innovation and Entrepreneurship* 3: 1–17.
- Gupta, Vishal, Daniel Turban, Arzu Wasti, and Arijit Sikdar. 2009. "The Role of Gender Stereotypes in Perceptions of Entrepreneurs and Intentions to Become an Entrepreneur". *Entrepreneurship Theory and Practice* 33(2): 397–417.
- Halabisky, M., F. Lang, S. Poelhekke, and P. Van der Zwan. 2023. *Financing for SMEs and Entrepreneurs 2023: An OECD Scoreboard*. Paris: OECD Publishing.
- Hechavarría, Diana, and Amy Ingram. 2019. "Entrepreneurial Ecosystem Conditions and Gendered National-Level Entrepreneurial Activity: A 14-Year Panel Study of GEM". *Small Business Economics* 53: 431–458.
- Hechevarría, Diana, Amanda Bullough, Candida Brush, and Linda Edelman. 2019. "High-Growth Women's Entrepreneurship: Fueling Social and Economic Development". *Journal of Small Business Management* 57: 5–13.
- Hodgson, Leah. 2024. "European VC Activity Declines as Investors Pull Back". PitchBook, 12 June.
- Huang, Yangjie, Ping Li, Jing Wang, and Kexin Li. 2022. "Innovativeness and Entrepreneurial Performance of Female Entrepreneurs". *Journal of Innovation & Knowledge* 7(3): 100257.
- Isiwu, Prisca, and Ifeanyi Onwuka. 2017. "Psychological Factors That Influence Entrepreneurial Intention Among Women in Nigeria: A Study Based in South East Nigeria". *The Journal of Entrepreneurship* 26(2): 176–195.
- Kobeissi, Nada. 2010. "Gender Factors and Female Entrepreneurship: International Evidence and Policy Implications". *Journal of International Entrepreneurship* 8(1): 1–35.
- Laguía, Ana, Cristina García-Ael, Dominika Wach, and Juan Moriano. 2019. "'Think Entrepreneur—Think Male': A Task and Relationship Scale to Measure Gender Stereotypes in Entrepreneurship". *International Entrepreneurship and Management Journal* 15(3): 749–772.
- Lai, Yanzhao, and Nicholas Vonortas. 2019. "Regional Entrepreneurial Ecosystems in China". *Industrial and Corporate Change* 28(4): 875–897.
- Leendertse, Jip, Mirella Schrijvers, and Erik Stam. 2022. "Measure Twice, Cut Once: Entrepreneurial Ecosystem Metrics". *Research Policy* 51(9): 104336.
- Lock, Rachel, and Helen Lawton Smith. 2016. "The Impact of Female Entrepreneurship on Economic Growth in Kenya". *International Journal of Gender and Entrepreneurship* 8(1): 90–96.

- Machado, Diana, Vítor Braga, Alvina Correia, Alexandra Braga, and Carina Silva. 2023. "How Female Entrepreneurship May Boost Business Innovation and Internationalization". *Global Business and Organizational Excellence* 42(5): 91–110.
- Malecki, Edward. 2018. "Entrepreneurship and Entrepreneurial Ecosystems". *Geography Compass* 12(3): e12359.
- Malmström, Malin, Barbara Burkhard, Charlotta Sirén, Dean Shepherd, and Joakim Wincent. 2024. "A Meta-Analysis of the Impact of Entrepreneurs' Gender on Their Access to Bank Finance". *Journal of Business Ethics* 192: 803–820.
- Mari, Michela, Sara Poggesi, Gianpaolo Abatecola, and Caroline Essers. 2024. "Women Entrepreneurs and Innovation: Retrospect and Prospect". *Journal of Innovation & Knowledge* 9: 100519.
- Mason, Colin, and Ross Brown. 2014. "Entrepreneurial Ecosystems and Growth-Oriented Entrepreneurship". Final Report to Organisation for Economic Co-operation and Development.
- Metu, Amaka, and Uche Nwogwugwu. 2024 "Challenging Factors Affecting Access to Finance by Female Micro Entrepreneurs in Anambra State, Nigeria". *Journal of African Business* 25(1): 142–154.
- Minniti, Maria. 2010. "Female Entrepreneurship and Economic Activity". *European Journal of Development Research* 22(3): 294–312.
- Minniti, Maria, and Carlo Nardone. 2007. "Being in Someone Else's Shoes: The Role of Gender in Nascent Entrepreneurship". *Small Business Economics* 28(2–3): 223–238.
- Munda, Giuseppe. 2008. *Social Multi-Criteria Evaluation for a Sustainable Economy*. Berlin Heidelberg: Springer-Verlag.
- Mylonas, Naoum, Lida Kyrgidou, and Eugenia Petridou. 2017. "Examining the Impact of Creativity on Entrepreneurship Intentions: The Case of Potential Female Entrepreneurs". *World Review of Entrepreneurship Management and Sustainable Development* 13(1): 84–105.
- Neck, Heidi, Gail Meyer, Boyd Cohen, and Andrew Corbett. 2004. "An Entrepreneurial System View of New Venture Creation". *Journal of Small Business Management* 42(2): 190–208.
- Nigam, Nirjhar, Cristiane Benetti, and Hareesh Mavoori. 2022. "Access to Venture Capital: Does Gender (Still) Really Matter?" *Strategic Change* 31(2): 239–248.
- Okah-Efogo, Françoise, and Gaëlle Timba. 2015. "Female Entrepreneurship and Growth in Cameroon". *African Journal of Economic and Management Studies* 6(1): 107–119.
- Okolie, Ugochukwu, Christian Ehiobuche, Paul Igwe, Michael Agha-Okoro, and Chukwuemeka Onwe. 2021. "Women Entrepreneurship and Poverty Alleviation: Understanding the Economic and Socio-cultural Context of the Igbo Women's Basket Weaving Enterprise in Nigeria". *Journal of African Business* 22(2): 1–20.
- Papadimitriou, Antigoni, Naoum Mylonas, and Constantine Frangakis. 2022. "Investigating Women Entrepreneurs in Creative Industries: Critical Determinants for Venture Performance". *Creative Industries Journal* 17(1): 3–27.
- Pathak, Saurav, Sonia Goltz, and Mari Buche. 2013. "Influences of Gendered Institutions on Women's Entry into Entrepreneurship". *International Journal of Entrepreneurial Behaviour & Research* 19(5): 478–502.

- Roundy, Philip, Mike Bradshaw, and Beverly Brockman. 2018. "The Emergence of Entrepreneurial Ecosystems: A Complex Adaptive Systems Approach". *Journal of Business Research* 86(1): 1–10.
- Ruiz, Linda, José Ernesto Amorós, and Maribel Guerrero 2023. "Does Gender Matter for Corporate Entrepreneurship? A Cross-Countries Study". *Small Business Economics*.
- Sabri, Maram, and Keith Thomas. 2019. "Psycho-Attitudinal Features: A Study of Female Entrepreneurs in Saudi Arabia". *International Journal of Gender and Entrepreneurship* 11(4): 459–480.
- Sahasranamam, Sreevas, and Aileen Ionescu-Somers. 2024. "Six Global Trends in Female Entrepreneurship". World Economic Forum Stories, 8 January.
- Sajjad, Muhammad, Nishat Kaleem, Muhammad Chani, and Munir Ahmed. 2020. „Worldwide Role of Women Entrepreneurs in Economic Development". *Asia Pacific Journal of Innovation and Entrepreneurship* 14(2): 151–160.
- Sánchez Cañizares, Sandra, and Fernando Fuentes García. 2010. "Gender Differences in Entrepreneurial Attitudes". *Equality, Diversity and Inclusion* 29(8): 766–786.
- Santos, Susana, and Xaver Neumeyer. 2021. "Gender, Poverty and Entrepreneurship: A Systematic Literature Review and Future Research Agenda". *Journal of Developmental Entrepreneurship* 26(3): 2150018.
- Sexton, Donald, and Nancy Bowman-Upton. 1990. "Female and Male Entrepreneurs: Psychological Characteristics and Their Role in Gender-Related Discrimination". *Journal of Business Venturing* 5: 29–36.
- Simba, Amon, Oyedele Ogundana, Eric Braune, and Léo-Paul Dana. 2023. "Community Financing in Entrepreneurship: A Focus on Women Entrepreneurs in the Developing World". *Journal of Business Research* 163: 113962.
- Stam, Erik. 2015. "Entrepreneurial Ecosystem and Regional Policy: A Sympathetic Critique: *European Planning Studies* 23(9): 1759–1769.
- Stam, Erik, and Andrew van de Ven. 2021. "Entrepreneurial Ecosystem Elements". *Small Business Economics* 56: 809–832.
- Statista. 2022. "Number of New Female-Led Unicorns Globally 2013–2019". www.statista.com/statistics/1221250/number-female-led-startups-to-unicorns/
- Statista. 2024. "Average Number of Female Entrepreneurs per Male Entrepreneur in OECD Countries in 2022/23, by Country". www.statista.com/statistics/1368499/female-male-entrepreneur-ratio-oecd/
- Sternberg, Rolf. 2022. "Entrepreneurship and Geography—Some Thoughts About a Complex Relationship". *The Annals of Regional Science* 69: 559–584.
- Stoker, Sasia, Iulia Rossano-Rivero, Sue Rossano, Sarah Davis, and Ingrid Wakkee. 2021. "Towards an Understanding of Inclusive Ecosystems". Paper presented at RENT XXXV, Turku, 17–19 November.
- Szerb, Lázló, Esteban Lafuente, Krisztina Horváth, and Balázs Páger. 2019. "The Relevance of Quantity and Quality Entrepreneurship for Regional Performance: The Moderating Role of the Entrepreneurial Ecosystem". *Regional Studies* 53(9): 1308–1320.

- Szerb, Lázló, Raquel Ortega-Argilés, Zoltan Acs, and Eva Komlósi. 2020. "Optimizing Entrepreneurial Development Processes for Smart Specialization in the European Union". *Papers in Regional Science* 99: 1413–1457.
- Ungerer, C., H. Rintsch, and R. Henn. 2023. "An Outline of the Interplay Between Female Entrepreneurship and Entrepreneurial Ecosystems". Proceedings of the 2023 IEEE 29th ICE/ITMC Conference, Karlsruhe, 19 June. [5](#)
- U.S. Small Business Administration, Office of Advocacy. 2023. "Facts About Small Business: Women Ownership Statistics". <https://advocacy.sba.gov/2023/03/21/facts-about-small-business-women-ownership-statistics/>
- Vedula, Siddharth, and Phillip Kim. 2019. "Gimme Shelter or Fade Away: The Impact of Regional Entrepreneurial Ecosystem Quality on Venture Survival". *Industrial and Corporate Change* 28(4): 827–854.
- Welsh, Dianne, Eugene Kaciak, Muriel Fadairo, Vijayta Doshi, and Cintya Lanchimba. 2023. "How to Erase Gender Differences in Entrepreneurial Success? Look at the Ecosystem". *Journal of Business Research* 154: 113320.
- Wieland, Alice, Markus Kemmelmeier, Vishal Gupta, and William McKelvey. 2019. "Gendered Cognitions: A Socio-Cognitive Model of How Gender Affects Entrepreneurial Preferences". *Entrepreneurship and Regional Development* 31: 178–197.
- Woetzel, Lola, Anu Madgavkar, Kweilin Ellingrud, Eric Labaye, Sandrine Devillard, Eric Kutcher, James Manyika, Richard Dobbs, and Mekala Krishnan. 2015. "The Power of Parity: How Advancing Women's Equality Can Add \$12 Trillion to Global Growth". McKinsey Report, 1 September.
- World Bank. Various years. Enterprise Surveys. www.enterprisesurveys.org/
- World Bank. 2023. "Population, Female (% of total population)". <https://data.worldbank.org/indicator/SP.POP.TOTL.FE.ZS>
- Wurth, Bernd, Erik Stam, and Ben Spigel. 2023 "Entrepreneurial Ecosystem Mechanisms". *Foundations and Trends in Entrepreneurship* 19(3): 224–339.
- Xie, Xuemei, and Yonghui Wu. 2022. "Doing Well and Doing Good: How Responsible Entrepreneurship Shapes Female Entrepreneurial Success". *Journal of Business Ethics* 178: 803–828.
- Xu, Lei, Praveen Parboteeah, and Hangqing Fang. 2023. "Gender, Institutional Change, and Pre-Entrant Entrepreneurial Attempt". *New England Journal of Entrepreneurship* 26(2): 107–129.
- Yager, Ronald. 1996. "Quantifier Guided Aggregating Using OWA Operators". *International Journal of Intelligent Systems* (11): 49–73.
- Zehra, Dua, Shahzaib Raza, and Falak Sher. 2024. "Cultivating an Entrepreneurial Ecosystem for Women in Rural Gilgit: Policy Recommendations and Strategies". *Contemporary Issues in Social Sciences and Management Practices* 3(2): 136–150.

The Global Index of Female Entrepreneurship Systems

This paper introduces the 2024 Female Entrepreneurship Index (FEI), a framework designed to identify the conditions that promote high-potential female entrepreneurs characterized by innovative, growth-oriented, and export-focused ventures. By evaluating gender-specific factors across economies, the FEI highlights how successful female entrepreneurs contribute to economic and social development. The index also assesses domestic strengths and weaknesses in cultivating environments that support exceptional female-led businesses, offering a comprehensive tool for global comparison and policy reforms.

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