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THE ROLE OF ENTREPRENEURSHIP IN ENHANCING ECONOMIC DEVELOPMENT: THE MEDIATING ROLE OF GENDER AND MOTIVATIONS

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Abstract. Starting from the significant role played by entrepreneurship in the economy and also from the pressing problem of gender inequality, in this paper we aim to analyse the link between entrepreneurship and economic development, with emphasis on the mediating role of gender and motivations of entrepreneurs. We apply panel data regression models on a sample of 53 world countries mapped by their development level. Data regarding countries' economic development levels is obtained from the World Bank DataBank and the entrepreneurship rates from the annual reports of the Global Entrepreneurship Monitor. The level of economic development is measured by GDP per capita. Entrepreneurship rates by gender and motivations are used to test the mediating role. The results emphasise that male entrepreneurs motivated by necessity and female entrepreneurs motivated by opportunity would significantly stimulate economic development. The analysis of clusters of countries highlights that entrepreneurship enhances economic development, but the effects broken down by gender and motivations have particularities depending on the country. This study contributes to the literature in several ways, such as the comparative analysis, its large sample size and the emphasis on gender differences and entrepreneurs' motivations.

Keywords: entrepreneurial activity, female entrepreneurship, male entrepreneurship, necessity-driven entrepreneurs, opportunity-driven entrepreneurs, economic development, clusters of countries.

JEL Classification: L26, O12, C33.

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1. Introduction

Entrepreneurship is recognised as a significant pillar of the development of national economies and has become a main objective of government policies in all states of the world. It influences growth and societal well-being, promotes innovation and can stimulate economic growth and social development, as it allows people to start new businesses, create jobs, and add to general prosperity. When the entrepreneurial environment allows the diversity of entrepreneurs while simultaneously promoting their growth, entrepreneurship contributes to the advancement of societies related to regional growth and development (Fritsch & Wyrwich, 2017; Dileo & García Pereiro, 2019).

Several studies have investigated the relationship between entrepreneurship and economic development (Wennekers & Thurik, 1999; Audretsch & Keilbach, 2008; Acs et al., 2012; Urbano et al., 2020; Tahir & Burki, 2023; Munyo & Veiga, 2024) while others analysed only the role of women in entrepreneurship (Hechavarria et al., 2019; Sajjad et al., 2020; Ge et al., 2022) or only the role of motivations (Solesvik et al., 2019; Martínez-Rodriguez et al., 2020; Ali et al., 2023). Our research has an integrative character and combines all these approaches under one unitary vision. Starting from these, we examine how entrepreneurship stimulates national economic growth, focusing on the impact of gender disparities and individual motivations. Thus, we do comprehensive research to demonstrate that, while the number of entrepreneurs in an economy might have a favourable impact on economic development, the structure of these entrepreneurs is very important. It's crucial to remember that we're analysing people, not just statistics, and that they vary in terms of gender and the reasons they choose to be entrepreneurs.

The empirical research focuses on an extensive sample of countries worldwide that are analysed together and also grouped into clusters according to their level of development. The analysed period includes 9 years, respectively the period between 2013 and 2021. The period of data analysis also includes two years in which the COVID-19 pandemic occurred, so the interpretation of the obtained results must be done taking into account these aspects. The methods used aim to apply multiple linear regression models using the panel data technique.

Our empirical results point out that depending on the motivation and gender of entrepreneurs, there are notable variations in the relationship between entrepreneurship and economic development. Male necessity-motivated and female opportunity-motivated entrepreneurs resulted in enhancing economic development. Additionally, the relationships tested exhibit a variety of peculiarities based on the countries under consideration.

Our study brings new elements to the literature through three directions: (1) highlights the role of gender in the relationship between entrepreneurship and the economic development of countries, analysing both indicators that measure female and male entrepreneurship; (2) discusses the impact of entrepreneurs' motivation on the economies, considering indicators that express both the gender of entrepreneurs and the motivation for starting a business; (3) realizes a comparative analysis of the relationships between entrepreneurship and economic development between three clusters of countries, depending on their level of development, taking into account both the gender and the motivation of the entrepreneurs. Such analyses have not been done in the literature so far, at least to our knowledge. The fact that we examine a sample of countries from seven regions of the world (according to the World Bank classification) with varying levels of development is another element of novelty of our paper.

This research contributes to the literature on entrepreneurship by advancing knowledge on the need to reduce the gender gap and also the need to pay more attention to the motivations of individuals to enter entrepreneurship, which, significantly affects their evolution but also the role played in the economy of a country.

We, also emphasize the need for policymakers to consider the unique characteristics of entrepreneurs and the obstacles they face based on their motivations and gender, and to develop adapted policies to sustain and encourage entrepreneurship as it has great potential to add value to the economy.

Our paper is structured as follows: the first part of the paper realizes a brief literature review, identifying the role played by gender and the motivations of individuals in the relationship between entrepreneurship and economic development. The next section describes the econometric methods used, and also the analysed data. The third section presents the results obtained and also discusses them. The paper ends with conclusions, and some policy implications and highlights research limitations.

2. Literature review

2.1. Literature on entrepreneurship

The financial resources are limited, but, an entrepreneur can combine already existing resources in creative ways (Schumpeter, 2000). The entrepreneur is the one who can be considered an agent of change, being seen as a force that stimulates innovation, on which progress, development and economic growth are based (Schumpeter, 1911).

Starting with these, recently, research concerns about entrepreneurship have grown. Nowadays, the entrepreneurial ecosystem has a complex structure with many actors, and the links and linkages between them help new enterprises grow. To shape functional and highly efficient economic and business models, it is required to encourage functional and highly efficient business processes, promote technological breakthroughs and related support elements, and grow key economic sectors (Andrei et al., 2021).

A series of studies have defined entrepreneurship by referring to the size of the enterprises. They showed that small enterprises realize the creative destruction seen as the essential entrepreneurial function (Schumpeter, 1911). The enterprise's age is another factor considered when categorising entrepreneurship. It states that startups and new businesses are classified as entrepreneurship (Audretsch & Keilbach, 2007).

2.2. Entrepreneurship and economic development

The relationship between entrepreneurship and economic growth was first covered in a narrative literature analysis by Wennekers and Thurik (1999). The authors established the foundation for the next years of empirical research on the subject with their synopsis of the theoretical understanding and the initial framework of the entrepreneurial impact. Since then, many studies have analysed the relationship between entrepreneurship and economic growth under different aspects. Most of them show that entrepreneurship is closely linked to economic growth and is a key determinant of societal change (Carree & Thurik, 2003; Audretsch, 2007; Audretsch & Keilbach, 2008; Acs et al., 2012; Liñán & Fernandez-Serrano, 2014; Doran et al., 2018; Urbano et al., 2019; Peprah & Adekoya, 2020; Stoica et al., 2020; Urbano et al., 2020).

Entrepreneurship stimulates economic growth if it is based on opportunities and effective governance leads to a significant advance in economic development (Naudé, 2011). The presence of an efficient, dynamic, and resilient entrepreneurial ecosystem directly affects the level of economic development in a country or region. However, entrepreneurship is also significantly impacted by the dynamics of development (Naudé, 2013).

The significance of entrepreneurship and its importance in economic growth is different from country to country depending on the stage and economic structure of the country (Carree et al., 2002; Erken et al., 2009), the financing power of the business (Thurik, 2009), the direction of policies (Acs et al., 2007), the initiative of the actors involved appetite for risk and innovation.

2.3. Gender of entrepreneurs

The existence of gender differences in entrepreneurship is not just a hypothesis but has become a certainty supported by numerous studies. The male and female entrepreneurs' attitudes, motives, obstacles, opportunities, and business practices differ significantly. The psychological characteristics of the entrepreneurs may influence the enterprise's functioning (Staniewski et al., 2016). Men who choose to become entrepreneurs are primarily motivated

by financial concerns and finding opportunities to maintain or increase their income (Jafari-Sadeghi, 2020), whereas women are motivated by a mix of motives and social needs like status, family concerns and the opinions of peers (Allen & Curington, 2014). Also, women are less risk-taking entrepreneurs and usually do not start a business only to take advantage of new market opportunities but are influenced by factors related to the personal and emotional structure of the person (Jafari-Sadeghi, 2020; Boghean & State, 2021).

Men and women have distinct desires and aspirations, that influence their actions. Men desire authority, a solid employment position, popularity, and success in the workplace, and need to be independent (Hitka et al., 2023). According to Rembeza and Radlińska (2021), gender remains a crucial factor in diversifying the labour market, even with the bettering circumstances for women in the workforce.

The gender differences also depend on the specifics of countries. Generally, several obstacles cause gender disparities in entrepreneurship to differ from nation to nation: institutional, educational, cultural or policies favouring men's involvement in business (Mahajan & Bandyopadhyay, 2021). Other reasons for gender differences in entrepreneurship are the perception that women entrepreneurs have weaker negotiating skills and business knowledge than men, and reduced access to finance. Raghuvanshi et al. (2017) discussed various barriers women entrepreneurs face and identified, especially those related to education, family support, mobility, and difficulties related to financing. Jha and Alam (2022) conclude that business environment, motivation, sociocultural elements and funding would positively and substantially impact the performance of female entrepreneurs. Regarding access to financing, some authors (Halabisky, 2018; Bartos et al., 2023) argued that financing constraints would be much more pronounced for female than male entrepreneurs. Female entrepreneurs are 63% less likely than male entrepreneurs to be granted external funding, according to a study by Guzman and Kacperczyk (2019). The gender gap accounts for the majority of this disparity. Morazzoni and Sy (2022) point out that women's less access to credits is an obstacle to entrepreneurship and determines the loss of development opportunities.

Gender inequalities may not always be correlated directly with economic growth but vary from society to society (Jayachandran, 2020). In developing countries, the role of women entrepreneurs is really important. They represent a potential source of economic growth, often under-utilised. However, many businesses built by women are small compared to men's businesses, thus creating fewer jobs and generating less profit (Coleman, 2007). At the same time, it is found that women rarely own large businesses. Cultural norms, stereotypes and lack of female role models in business often discourage women from starting an entrepreneurial activity and erode their confidence in the success of such an initiative (Achim et al., 2019).

Global Entrepreneurship Monitor points out that compared to men, women are much less likely to start new businesses due to the lack of cultural support and some difficulties in terms of access to financing. It is also highlighted that women's entrepreneurial activity varies significantly between states due to the action of some economic, social and cultural factors (Global Entrepreneurship Monitor [GEM], 2023). Furthermore, both cultural and social contexts in developed countries have provided greater opportunities for female entrepreneurs' self-realisation than in emerging countries (Solesvik et al., 2019). Consequently, the motivations of female entrepreneurs vary based on the nation's economic development level.

The perceived economic reality, especially in developed countries, is that reducing or eliminating the gender gap in entrepreneurship would significantly advance economic development (Veckalne &Tambovceva, 2023). Thus, global GDP could increase by up to 2% if women and men participated equally as business initiators and creators and participated

equally as entrepreneurs (Blomquist et al., 2014). The more society promotes and supports equal opportunities between men and women, the more this trend will be reflected in business and entrepreneurial activity. Also, the greater the gender gap in society as a whole, the more this gap is reflected in entrepreneurial activity. This issue suggests that reducing the gender gap contributes significantly to increasing entrepreneurial initiative among women, and the emergence of sustainable businesses based on positive choices (Halabisky, 2018).

According to some studies, the human capital of female entrepreneurs and business performance are positively correlated in certain countries (Welsh et al., 2018; Chyne & Syngkon, 2020). This is because female entrepreneurs who have a higher level of human capital identify new business opportunities more easily, are more innovative and show creativity in the line of creating new products and services, which influence the growth potential of their companies (Vadnjal, 2020). From the perspective of the relationship between the presence of women in business management structures and the company's performance, the study conducted by Hedija and Němec (2021) argues that the gender structure of a business's management does not significantly influence the performance and financial health of the company, and a large share of women in leadership would not guarantee higher financial performance.

2.4. Motivation of entrepreneurs according to their gender

The motivation for entering entrepreneurship influences the future of the business because, depending on their motivation, individuals will make the business plan and carry out their activity. The motivation of entrepreneurs depends on a series of elements specific to the country they come from, such as the economic environment, the institutional environment, perceived opportunities and capabilities (Rusu & Roman, 2019; Amorós et al., 2019; Martínez-Rodríguez et al., 2022; Kara et al., 2023).

Some studies have pointed out that entrepreneurial motivations differ between men and women (Laure Humbert & Drew, 2010; Ali et al., 2023, GEM, 2023). Thus, it is discovered that a significantly greater percentage of women than males launch a firm out of necessity, in emerging and developing countries, since they are unable to find another method to enter the labour market (Minniti & Naudé, 2010; Naudé, 2011; Organisation for Economic Co-operation and Development [OECD], 2012; Valdez & Richardson, 2013; Angulo-Guerrero et al., 2017).

Gender inequality and limited inclusion of women in entrepreneurship have long-term negative effects on the structure of the population involved in entrepreneurial activity. In this context, the involvement of women in entrepreneurial activity will start from necessity and not from the opportunity offered by the business career (Almobaireek & Manolova, 2013; Rietveld & Patel, 2022).

More opportunity-motivated entrepreneurs are joining the market in developed nations in tandem with the rise in demand for and availability of entrepreneurial possibilities (Naudé, 2010).

3. Methodology

The main purpose of our analysis is to test the relationship between entrepreneurship and economic development, with accents on the mediating role of gender. For this investigation, we created a sample formed from 53 countries located in seven regions of the world, according to the classification of the World Bank (2022). The countries were chosen based on the data availability. Nine years, from 2013 to 2021 are taken into consideration.

We use panel data regressions, tested in Eviews 10 software, for testing the dependencies between the main variables targeted. To ensure we obtain the most accurate results, we test The Pooled OLS regression, fixed effects regression and random effects regression.

The equation of the panel data regression is:

$$GDP_{it} = \beta_1 Entrepr_{it} + \beta_2 Control_{it} + e_{it}, \quad (1)$$

where: *i* is the country and *t* is time (2013 ... 2021); *GDPit* is the dependent variable measuring economic development; $Entrepr_{it}$ are the indicators measuring entrepreneurship; $Control_{it}$ the control variables; β_1 and β_2 are the coefficients; e_{it} the error term.

We employed GDP per capita growth as a stand-in for economic development to run the models. Both the motivation of entrepreneurs and the total early-stage entrepreneurial activity by gender are measured by the independent variables under consideration. A set of control variables is also incorporated into the analysis. Both the World Bank DataBank and Global Entrepreneurship Monitor provided the data. Table 1 describes the variables.

The motivation for choosing the variables is related to the previous findings of other studies showing that entrepreneurship has an important effect on economic growth. Extending the analysis, some studies (Minniti & Lévesque, 2010; Acs et al., 2012; Aparicio et al., 2016; Stefanović et al., 2018) emphasised that opportunity-motivated entrepreneurs could stimulate economic growth while necessity-motivated entrepreneurs could hamper it (Doran et al., 2018).

Table 1. Variables description (source: elaborated by the authors)

Variable (Abbreviation)	Measurement
Gross Domestic Product per capita growth (GDP)	GDP per capita growth (annual %)
Female total early stage entrepreneurial activity (F_TEA)	as % of adult female population
Female total early stage entrepreneurial activity, motivated by necessity (F_TEA_NEC)	as % of TEA females
Female total early stage entrepreneurial activity, motivated by opportunity (F_TEA_OPO)	as % of TEA females
Male total early stage entrepreneurial activity (M_TEA)	as % of adult male population
Male total early stage entrepreneurial activity, motivated by opportunity (M_TEA_OPO)	as % of TEA males
Male total early stage entrepreneurial activity, motivated by necessity (M_TEA_NEC)	as % of TEA males
Gross capital formation (CAPIT)	annual % growth
Labour force (LABOR)	total
Total government expenditure on education (EDUC)	as % of GDP
Foreign direct investment, net inflows (FDI)	as % of GDP
Total natural resources rents (RES)	as % of GDP

This is because opportunity-motivated entrepreneurs are those individuals who start a business looking for growth, profit and innovation (Cullen et al., 2014) and have the capacity to boost productivity in addition to creating jobs (Stenholm et al., 2013). Entrepreneurs who are driven by necessity are those who launch a new business because they must cover up

for the lack of other sources of money for their daily needs (Naudé, 2011; Valdez & Richardson, 2013; Angulo-Guerrero et al., 2017). Often necessity-motivated entrepreneurship is closely related to informal activities, unemployment, economic recession, and poverty (Acs & Amorós, 2008). Since not all entrepreneurial activities have the same impact on economic growth (Ordeñana et al., 2020) we decided to incorporate entrepreneurial motivations into our investigation considering important to find those that support the economy the most. We also considered to be important to include the gender of the entrepreneur in the analysis.

Even though female entrepreneurs account for the category of entrepreneurship that is expanding the fastest globally (Cardella et al., 2020), researches indicates that the percentage of women choosing to opt for an entrepreneurial career is lower than that of men (GEM, 2023), this difference expanding as the country's level of development increases (Coduras & Autio, 2013). However, women's participation in entrepreneurship has a significant role in economic development and for the well-being of society (Hechavarria et al., 2019; Sajjad et al., 2020; Martínez-Rodríguez et al., 2022) because they have a great opportunity to succeed in business due to their ability to multitask (Hendratmi et al., 2022; Setyaningrum et al., 2023). On the other hand, women's entrepreneurship under certain conditions could also harm economic growth (Morched & Jarboui, 2018). We formulate the following hypotheses, based on the majority of researches indicating that, despite the potential for economic benefits, women's entrepreneurship is still underdeveloped and their contribution to the economy is limited, as well as research indicating the necessity of considering the reasons why people choose to become entrepreneurs:

Hypothesis 1: The relationship between entrepreneurship and economic development is (a) negative for the case of female entrepreneurs and (b) positive for male entrepreneurs.

Hypothesis 2: The relationship between entrepreneurship and economic development is (a) positive for opportunity-motivated entrepreneurs and (b) negative for necessity-motivated entrepreneurs.

We also discovered from the literature that the country's level of economic development determines the precise nature of the relationship between entrepreneurship and economic growth (Ferreira et al., 2017; Urbano et al., 2020). Entrepreneurship's impact on economic growth varies between developed and developing nations. However, the results obtained in the literature are not uniform because some studies have demonstrated that entrepreneurship has a greater effect on economic growth in developed countries compared to developing ones (Van Stel et al., 2005; Sternberg & Wennekers, 2005). At the same time, other empirical findings highlighted a direct relationship between entrepreneurship and economic growth only in low-income countries (Stam et al., 2011).

Based on the above, we decided to apply regression models to clusters of countries to compare them and to test the differences observed. Starting from the classification made by the World Bank (2022) according to income, we grouped countries into three clusters (Table 2).

Taking into account the previous considerations, the third hypothesis of our study is:

Hypothesis 3: The relationship between entrepreneurial motivations (mediated by gender) and economic development depends on the country's level of development.

A control variables, we selected a set of indicators that were found to significantly influence economic development (Chandra, 2010; Aslan & Altinoz, 2021; Banday et al., 2021; Ben-Salha et al., 2021; Yasmeen et al., 2021).

Table 2. The clusters of countries based on their income level (source: processed by the authors after World Bank, 2022)

Lower middle income countries	Upper Middle income countries	High income countries	
Egypt	Argentina	Australia	Netherlands
India	Brazil	Canada	Norway
Indonesia	China	Chile	Panama
Iran, Islamic Rep.	Colombia	Croatia	Poland
Korea, Dem. Rep.	Ecuador	Cyprus	Portugal
Morocco	Guatemala	Estonia	Puerto Rico
	Kazakhstan	Finland	Qatar
	Malaysia	France	Saudi Arabia
	Mexico	Germany	Slovak Republic
	Peru	Greece	Slovenia
	Russian Federation	Hungary	Spain
	South Africa	Ireland	Sweden
	Thailand	Israel	Switzerland
		Italy	United Arab Emirates
		Japan	United Kingdom
		Latvia	United States
		Luxembourg	Uruguay

To conduct the empirical analysis of the data and test the hypotheses, we took a series of steps. The first step was to test the stationarity of all variables. The only variable that required modifications was the one measuring the labour force. Because it had a unit root, we logarithmized it before calculating the first difference. The remaining variables did not have a unit root. The next steps were running the descriptive statistics, generating histograms for testing the normality of the variables; and generating the correlation matrix to test the existence of multicollinearity. We also run residual diagnostics heteroscedasticity tests. All these tests show that the assumptions of the panel data models are fulfilled and we can apply the panel data regression models. The next section describes and discusses our findings.

4. Results and discussions

The descriptive statistics of the variables used are compiled in Table 3. According to the findings, economic development, as determined by GDP per capita growth, ranges from a low of –19% (in Panama, 2020) to a maximum of 23% (in Ireland, 2015) for our sample. The movement of pre-existing and intangible assets (software, R&D, etc.) by a few major multinational corporations (MNE) within their Irish legal divisions was the primary cause of Ireland's significant GDP per capita increase in 2015 (OECD, 2016; Khder et al., 2020). The important decrease in GDP per capita in Panama, in 2020, was due to the pandemic (World Bank, 2023b).

Analysing the independent variables that express entrepreneurial motivations and the distribution of entrepreneurs by gender, we find that Female TEA ranges from 0.9% of the adult female population in Italy (in 2020) to 33.6% of the adult female population in Ecuador (in 2016). Male TEA ranges from a low of 2.4% in France (in 2017) to a high of 41.1% in Chile (in 2019).

Analysing the motivation of entrepreneurs according to gender, we notice that in some countries there are not entrepreneurs motivated by necessity. For example, in Norway, there were no female entrepreneurs' necessity-motivated in 2013, and in 2014 there were no male entrepreneurs' necessity-motivated. In this country, entrepreneurs motivated by opportunity predominated, with values above 80% for women and above 90% for men.

Male entrepreneurs driven by opportunity had the greatest values in Norway (2013), followed by female entrepreneurs in Poland (2018). The results obtained from descriptive statistics highlight the major disparities in the forms of entrepreneurship that exist in industrialised and developing countries. This emphasises the importance of doing a comparative study on the relationship between economic development and entrepreneurship, as well as identifying differences between groupings of nations.

Table 3. The variables' descriptive statistics (source: authors' calculations)

Variable	Mean	Maximum	Minimum	Std. deviation	Observations
GDP	1.617926	23.20087	–19.126960	3.686513	391
F_TEA	10.01514	33.60000	0.900000	6.449380	391
F_TEA_NEC	24.80423	56.10000	0.000000	11.89230	272
F_TEA_OPO	70.89985	95.00000	25.10000	11.45245	272
M_TEA	14.20046	41.10000	2.400000	7.024457	391
M_TEA_OPO	75.48691	92.00000	45.00000	8.925091	272
M_TEA_NEC	20.97544	47.30000	0.000000	9.218862	272
CAPIT	2.916240	102.3886	–50.127290	11.31665	373
DLLABOR	0.008586	0.170887	–0.104832	0.022086	338
EDUC	4.687006	8.510460	1.510745	1.174046	342
FDI	4.443020	161.8738	–41.650990	14.75023	384
RES	3.420708	36.04264	0.001200	5.752017	343

As for the control variables, Ireland had the biggest yearly percentage gain in gross capital formation (in 2019), while Panama experienced the worst fall. Saudi Arabia had the largest total government education expenditure in 2016, while the United Arab Emirates had the lowest (in 2018). In 2016, Saudi Arabia allocated the majority of its budget to education, health, and social services (Kingdom of Saudi Arabia, Ministry of Finance, 2015).

Cyprus had the greatest FDI values in 2019, while Luxembourg had the lowest (in 2017). Total natural resource rents were highest in Iran (2018) and lowest in Luxembourg and Switzerland (for all the years).

These results confirm our expectations that entrepreneurial motivations are different according to the gender of the entrepreneurs and also to their home country. Therefore, in the proposed approach, we focus on the mediating role of gender and motivations in analysing the relationship between entrepreneurship and economic development.

Following, we ran the correlation matrix. The results show that there are high correlation coefficients between the variables measuring entrepreneurship: female TEA is highly correlated with male TEA, female/male TEA motivated by opportunity is highly correlated with female/male TEA motivated by necessity. Due to these results, when we run the panel data regression models, we use, in turn, each variable that measures entrepreneurship as the independent variable.

To facilitate the comparison between the three clusters of countries we analyse the average values for all the variables. The results show significant differences between the three clusters of countries (Table 4).

Table 4. The average of the variables, by cluster of countries (source: authors' calculations)

Variable	Lower income countries	Middle income countries	High income countries
F_TEA	8.518	**16.056**	8.293
F_TEA_NEC	**30.889**	30.131	21.633
F_TEA_OPO	65.468	67.096	**73.354**
M_TEA	13.623	**18.958**	12.763
M_TEA_OPO	66.594	73.730	**77.673**
M_TEA_NEC	30.499	23.776	18.234
CAPIT	2.603	1.844	**3.262**
LABOR	**131,254,076.7**	91,957,429.45	16,481,544.85
EDUC	3.905	4.442	**4.934**
FDI	1.521	2.689	**5.578**
RES	**6.936**	5.181	2.232

Note: with bold are marked the highest values.

Female entrepreneurs are the most in middle-income countries, followed by lower and high-income countries with a small difference between them. Similar results were obtained for male entrepreneurs. These findings can be explained by the existence of policies that stimulate entrepreneurial initiatives, the existence of courses and financial education in the educational cycles, or the existence of more viable opportunities for financing new businesses. Because they tend to move into the category of high-income countries, these countries focus on developing the economy and stimulating entrepreneurship. It should also be noted that the gender gap is the largest in lower-income countries.

When we include both gender and motivation, we see that the majority of entrepreneurs, men and women, are motivated by necessity and live in low-income nations. This is because there are fewer jobs in these nations, the unemployment rate is greater, and people decide to enter entrepreneurship to ensure the income necessary for living. If the inequalities between women driven by necessity and men are generally small in lower-income nations, they are greater in the other two clusters of countries, with women motivated by necessity outnumbering men. These results are supported by other studies (Almobaireek & Manolova, 2013) which showed that compared to men, female entrepreneurs are more motivated by necessity reasons.

The entrepreneurs motivated by opportunity, both women and men, are the most in high-income countries. In these more developed countries, unemployment rates are lower, but at the same time there are more opportunities for businesses to develop and be innovative, so individuals who decide to enter entrepreneurship do so for reasons of opportunity.

Focusing on the control variables we observe that the labour force has the highest values in the less developed countries, and decreases as the degree of development of the country increases. Gross capital formation, total expenditure on education and FDI are greater in high-income countries and decrease with the level of development of the country. Total natural resource rents are greater in lower-income countries and fall as the countries are more developed.

When we run the regression models, for all the countries considered, we apply six different models, each of them having as the independent variable one of the variables that measure entrepreneurship, by gender and motivation.

The obtained results are centralised in Table 5 and show that female TEA generate a negative effect on economic development. Hypothesis H1a is accepted. This is in line with the findings of Morched and Jarboui (2018) but at the same time contradicts other studies. Part of these different results might be due to the indicators chosen to measure entrepreneurship, the period analysed and the sample of countries. In our case, the analysed period also includes two years of the manifestation of the COVID-19 pandemic, so this context of insecurity and the economic crisis generated may have influenced the results. Also, compared to previous studies, the sample of countries chosen for the analysis is an extensive one, including countries with different characteristics.

On the other hand, our results emphasise that, usually, businesses owned by women are twice as small as those owned by men, both in terms of sales and assets (Coleman, 2007; Bardasi et al., 2011; Halabisky, 2018) and tend to have a lower growth potential (Halabisky, 2018). These disparities in performance between men and women may result from basic differences in their motivations and business strategies, but they may also be caused by some barriers that women may encounter, including trouble getting credit, building business networks, interacting with government and other officials, and more (Bardasi et al., 2011). Consequently, a rise in the number of female entrepreneurs will not advance the nation's economic growth; on the contrary, it may even hinder it.

Men TEA had no statistically significant effect on economic development, in all of the nations studied. However, when we focus on motivation, we discover that men TEA motivated by necessity have a beneficial influence on economic development. Men TEA driven by opportunity have a negative impact. These findings can be attributed to the fact that people who perceive entrepreneurship as a necessity are more determined, anticipate risks, and have a superior result-to-effort ratio. This explanation also has a psychological connotation because necessity can entail responsibility in obtaining results, achieving performance and implicitly creating (meaningful) added value in the economy. Moreover, even if they enter entrepreneurship for reasons of necessity, the fact that men are more preoccupied with financial concerns and seek to find opportunities to maintain or increase their income (Jafari-Sadeghi, 2020) and also that they face fewer financing constraints compared to women (Halabisky, 2018; Bartos et al., 2023) could determine their businesses to generate added value for the economy.

Economic development is positively impacted by gross capital formation, foreign direct investments, net inflows, and an increase in the labour force. These outcomes are consistent with those of other research papers (Chandra, 2010; Aslan & Altinoz, 2021; Banday et al., 2021; Yasmeen et al., 2021). On the other hand, total government expenditures on education and natural resource rents have a negative relation with economic development. An increase of expenditures on education resulted in reduced economic development. This is because the results of the investments in education will be seen in the long term, after the individuals who benefit from education finish their studies, and, in the relatively short term the costs accumulated in this sector can be seen as negatively influencing economic growth. Other studies obtained similar results (Jeyhoon Tabar et al., 2017). The results obtained for natural resource rents follow the theory talking about "natural resource course" which shows that an abundance of natural resources will negatively affect economic growth (Satti et al., 2014). This effect is also generated by the use of rents of natural resources to support current

consumption instead of reinvesting them in new capital to replace what is being used up (World Bank, 2023a).

Table 5. The relationship between entrepreneurship and economic development, by gender and motivation (source: authors' calculations)

Variables	46 countries					
GDP per capita growth	(1)	(2)	(3)	(4)	(5)	(6)
FEMALE_TEA	–0.057** (0.028)	–	–	–	–	–
FEMALE_TEA_NEC	–	–	–0.003 (0.005)	–	–	–
FEMALE_TEA_OPO	–	–	–	–	0.005 (0.005)	–
MALE_TEA	–	–0.030 (0.023)	–	–	–	–
MALE_TEA_NEC	–	–	–	0.021** (0.010)	–	–
MALE_TEA_OPO	–	–	–	–	–	–0.020* (0.011)
CAPITAL	0.147*** (0.016)	0.150** (0.058)	0.159** (0.032)	0.157*** (0.032)	0.159*** (0.032)	0.157*** (0.032)
DLLABOR	5.206 (0.137)	3.021 (0.881)	6.333*** (0.547)	5.939*** (0.243)	6.547*** (0.453)	5.758*** (0.254)
EDUCATION	–0.614*** (0.151)	–0.595*** (0.154)	–0.435*** (0.052)	–0.388*** (0.032)	–0.435*** (0.048)	–0.402*** (0.038)
FDI	0.018* (0.010)	0.019** (0.009)	0.026** (0.006)	0.028*** (0.007)	0.026*** (0.006)	0.028*** (0.007)
RESOURCES	–0.081** (0.034)	–0.086** (0.033)	–0.051* (0.028)	–0.061** (0.030)	–0.050* (0.028)	–0.059* (0.032)
Intercept	3.995*** (0.815)	3.783*** (0.588)	3.932** (0.363)	3.211*** (0.195)	3.491*** (0.429)	5.320*** (1.057)
Observations	271	271	201	201	201	201
R^2	0.405	0.398	0.445	0.449	0.445	0.448
Adjusted R^2	0.391	0.384	0.427	0.432	0.428	0.431
F-statistic	29.962***	29.156***	25.939***	26.407***	25.970***	25.326***

Note: *, **, *** represent the probability of 90%, 95%, or 99%.

Our models are statistically significant, confirmed by the value and degree of significance of the F-statistic indicator. Also, the values obtained for R^2 adjusted show that between 38% and 43% of the variation in the indicator that measures economic development can be explained by the changes in the indicators that measure entrepreneurship and also the control variables.

Table 6 shows the relationship between entrepreneurship and economic development by gender and by clusters of countries. The findings support hypothesis H3 and demonstrate that, depending on the nation, there are notable variations in the association between economic development and entrepreneurship by gender. Female TEA correlates positively with

economic growth in low-income nations but negatively in the other two clusters. Male TEA, on the other hand, produced a positive connection in low- and middle-income nations, confirming Hypothesis H1b. All types of entrepreneurship benefit the economy in low-income countries. Entrepreneurship is viewed as the motor of an economy, therefore more entrepreneurs, regardless of gender, will benefit the economy and result in faster economic growth in developing countries.

For the negative relationship between female entrepreneurship and economic development in developed countries, the explanation is similar to the one provided above, as an increase in the number of female entrepreneurs will hamper the country's economic development because they run smaller businesses with lower growth potential. For the group of medium-income countries, male entrepreneurs have a favourable effect on economic growth, which may be because they own larger enterprises and can generate increased performance, but also because entrepreneurship is still considered a cultural model of masculinity, in many countries (Achim et al., 2019). So, male entrepreneurs are more supported in business and face fewer obstacles than women.

The tested models are statistically significant and the R^2 adjusted values emphasize that between 40% and 56% of the economic development variation can be explained by the variation of the independent and control variables.

Table 6. The relationship between entrepreneurship and economic development, by gender and clusters of countries (source: authors' calculations)

Variables	Lower income countries		Middle income countries		Higher income countries	
GDP per capita growth	(1)	(2)	(1)	(2)	(1)	(2)
FEMALE_TEA	0.088* (0.047)	–	–0.061** (0.028)	–	–0.091** (0.034)	–
MALE_TEA	–	0.249* (0.138)	–	0.066*** (0.022)	–	–0.032 (0.031)
CAPITAL	0.172*** (0.023)	0.179*** (0.023)	0.275** (0.043)	0.271*** (0.044)	0.109** (0.052)	0.114** (0.053)
DLLABOR	6.669** (0.488)	1.699** (0.852)	1.132 (0.771)	1.719 (0.398)	8.611* (0.538)	7.985* (0.074)
EDUCATION	–1.087*** (0.382)	–1.030*** (0.256)	–0.626*** (0.148)	–0.711*** (0.161)	–0.525** (0.219)	–0.488** (0.215)
FDI	0.160 (0.372)	0.309 (0.402)	–0.025 (0.125)	–0.034 (0.125)	0.043*** (0.014)	0.043*** (0.014)
RESOURCES	–0.126*** (0.029)	–0.149*** (0.024)	–0.116 (0.077)	–0.134 (0.081)	–0.124** (0.057)	–0.142*** (0.014)
Intercept	5.243*** (0.815)	2.336 (0.967)	5.202** (0.792)	5.926*** (0.195)	3.607*** (0.760)	3.112*** (0.751)
Observations	30	30	61	61	168	168
R^2	0.653	0.702	0.618	0.624	0.431	0.421
Adjusted R^2	0.563	0.624	0.576	0.582	0.410	0.400
F-statistic	7.233***	9.035***	14.589***	14.969***	20.406***	19.579***

Note: *, **, *** represent the probability of 90%, 95%, or 99%.

Table 7 presents the relationship between entrepreneurs motivated by opportunity (grouped by gender) and economic development, by clusters of countries. The results show that opportunity-motivated female entrepreneurs positively affect economic development in medium-income countries (confirming H2a and H3 but denying H1a). These results are sustained by the literature emphasising that more economic growth will result from entrepreneurial activity that arises from exploiting opportunities (Audretsch et al., 2006).

Male opportunity-motivated entrepreneurs negatively affect economic growth in countries with low income. High levels of human capital, which may indicate higher opportunity costs, diminish the beneficial effects of opportunity entrepreneurship.

The significant regression models demonstrate that the fluctuation of the variables included accounts for between 39% and 62% of the variation observed for economic development.

Table 7. The relationship between opportunity-motivated entrepreneurs and economic development, by gender and clusters of countries (source: authors' calculations)

Variables	Lower income countries		Middle income countries		Higher income countries	
GDP per capita growth	(1)	(2)	(1)	(2)	(1)	(2)
FEMALE_TEA_OPO	–0.026 (0.016)	–	0.046** (0.018)	–	–0.002 (0.014)	–
MALE_TEA_OPO	–	–0.055** (0.022)	–	0.026 (0.022)	–	–0.028 (0.018)
CAPITAL	0.137*** (0.006)	0.133*** (0.005)	0.214*** (0.058)	0.233*** (0.050)	0.118** (0.049)	0.115** (0.047)
DLLABOR	4.778*** (0.186)	2.719*** (0.475)	8.087* (0.425)	4.654 (1.132)	5.788 (0.681)	–4.543 (0.289)
EDUCATION	–1.546*** (0.449)	–1.779*** (0.476)	–0.645*** (0.102)	–0.069*** (0.139)	–0.252*** (0.088)	–0.222** (0.087)
FDI	0.024 (0.179)	0.058 (0.180)	–0.223 (0.129)	–0.182 (0.123)	0.057*** (0.018)	0.058*** (0.019)
RESOURCES	–0.136*** (0.025)	–0.161*** (0.026)	–0.077 (0.077)	–0.077 (0.068)	–0.080 (0.067)	–0.083 (0.066)
Intercept	1.138*** (0.580)	5.202** (0.792)	2.640*** (0.613)	3.844*** (1.160)	3.053*** (0.839)	4.933*** (1.432)
Observations	22	22	50	50	121	121
R^2	0.714	0.731	0.613	0.584	0.428	0.434
Adjusted R^2	0.600	0.624	0.559	0.526	0.398	0.404
F-statistic	6.263***	6.811***	11.387***	10.096***	14.257***	15.595***

Note: *, **, *** represent the probability of 90%, 95%, or 99%.

Table 8 shows the association between necessity-motivated entrepreneurs and economic development by gender and country cluster. Female entrepreneurs' necessity-motivated have a detrimental impact on economic growth in middle-income nations (confirming hypotheses H1a, H2b, and H3). The negative effects result from the fact that necessity-motivated females will attempt to earn enough money to live and will be uninterested in growing their enterprises and creating economic value. In developing nations, female entrepreneurs are typically more involved in the informal sector, which does not maintain economic development (World

Bank, 2021; Conroy & Low, 2022). At the same time, necessity-motivated male entrepreneurs have positive effects on economic growth in countries with low income.

Table 8. The relationship between necessity-motivated entrepreneurs and economic development, by gender and clusters of countries (source: authors' calculations)

	Lower income countries		Medium income countries		Higher income countries	
GDP per capita growth	(1)	(2)	(1)	(2)	(1)	(2)
FEMALE_TEA_NEC	0.037 (0.032)	–	–0.040** (0.018)	–	0.007 (0.008)	–
MALE_TEA_NEC	–	0.084** (0.038)	–	–0.021 (0.026)	–	0.032 (0.018)
CAPITAL	0.138*** (0.005)	0.129*** (0.005)	0.222*** (0.057)	0.233*** (0.051)	0.118** (0.049)	0.115** (0.047)
DLLABOR	1.321*** (0.240)	4.389*** (0.734)	6.141* (0.201)	4.154 (1.386)	6.709 (0.490)	–3.200 (0.395)
EDUCATION	–1.520*** (0.467)	–1.892*** (0.544)	–0.617*** (0.088)	–0.669*** (0.132)	–0.239** (0.095)	–0.190** (0.089)
FDI	0.003 (0.188)	0.087 (0.168)	–0.209 (0.128)	–0.178 (0.133)	0.057*** (0.019)	0.057*** (0.019)
RESOURCES	–0.141*** (0.024)	–0.180*** (0.030)	–0.092 (0.082)	–0.081 (0.071)	–0.083 (0.069)	–0.086 (0.068)
Intercept	8.923*** (1.847)	9.276*** (1.710)	6.866*** (1.432)	6.191*** (1.637)	2.607*** (0.479)	1.962*** (0.539)
Observations	22	22	50	50	121	121
R2	0.711	0.732	0.606	0.583	0.429	0.436
Adjusted R^2	0.595	0.625	0.551	0.525	0.399	0.406
F-statistic	6.152***	6.846***	11.037***	10.029***	14.304***	14.722***

Note: *, **, *** represent the probability of 90%, 95%, or 99%.

The regression models are significant, indicating that between 39% and 62% of the variation observed in economic development may be explained by variations in the variables considered.

Male entrepreneurship has a strong association with economic development in low-income countries, whereas female entrepreneurship does in middle-income countries. When it comes to motivations, differences emerge; for example, in low-income nations, male opportunity-motivated entrepreneurs have a negative link with economic development, but male necessity-motivated entrepreneurs have a positive relationship. In middle-income nations, the associations are inverse, thus female opportunity-motivated entrepreneurs have a positive relationship with economic development, whereas female necessity-motivated entrepreneurs have a negative relationship.

Summarising the findings of the empirical analysis, we can affirm that gender differences must be considered when examining the relationship between entrepreneurship and economic development, because, as demonstrated by the results presented and discussed above, the gender gap in entrepreneurship exists, and the effects it has on the overall economy differ. Furthermore, it is critical to consider entrepreneurs' motivations because simply

having more of them on the market will not be enough to boost the economy; they must be motivated to grow their businesses, use innovation, and create the added value required to support the nation's economic growth.

These findings are in line with the findings of other studies showing the significant relationship between entrepreneurship and economic development (Carree & Thurik, 2003; Audretsch & Keilbach, 2008; Acs et al., 2012; Liñán & Fernandez-Serrano, 2014; Doran et al., 2018; Urbano et al., 2019; Peprah & Adekoya, 2020; Stoica et al., 2020; Urbano et al., 2020) but also the fact that the gender and motivations of entrepreneurs are important factors that could influence this relationship. The gender analysed in the literature (Guzman & Kacperczyk, 2019; Mahajan & Bandyopadhyay, 2021; Morazzoni & Sy, 2022) is also confirmed by our results which show that male entrepreneurs are considered more important for the economy compared to women.

5. Conclusions

Our paper's primary goal is to examine the relationship between entrepreneurship and national economic development, emphasising the role that gender plays as a mediator and the reasons behind the actions of entrepreneurs. Therefore, this study tested and examined how entrepreneurial activity in 53 countries could influence economic development. Special attention is given to two characteristics of the entrepreneurs, such as gender and their motivations. We also compared the relationships tested for each cluster of countries, grouped according to their level of economic development.

To examine the relationship between entrepreneurship and economic development, mediated by gender and motivations, we used panel data regression models. The results have emphasised that the gender and motivations of the entrepreneurs are factors that could significantly influence the economic development of the country where they operate.

Our main findings show that female entrepreneurs do not influence the economic development of the 53 countries analysed. At the same time, male necessity-motivated entrepreneurs have a positive effect on economic development, and male opportunity motivated a negative one.

The results by country clusters demonstrated that both male and female entrepreneurs contribute to economic growth in lower-income nations. As countries' development levels rise, women entrepreneurs are no longer viewed as economic drivers, whereas male entrepreneurs are. Female entrepreneurs motivated by opportunity promote economic development in middle-income countries, but those motivated by necessity have the opposite effect. As a result, female entrepreneurs boost economic growth in low-income nations regardless of motive, whereas women only do so in prosperous nations if they are driven by opportunity. Male entrepreneurs have a more important role in the economy, compared to women. Even if they are motivated by necessity, they will still sustain the economic development of the country.

Our assumptions are validated and also supported by the results obtained in the analysis. The results could have an important role for decision-makers concerned with designing and implementing policies and effective instruments to support and encourage innovative entrepreneurship that seeks opportunities, but also to help entrepreneurs motivated by the necessity to have a more extensive vision and to reorient towards innovation. Also, our findings emphasize the need to reduce the gender gap in entrepreneurship, and to support female entrepreneurs by reducing the barriers they face, because they can generate beneficial effects on economies.

The limitations of our study consist of limited access to data for a larger number of countries and a longer period. In the following studies, we intend to continue the analysis of gender differences in entrepreneurship, by adding a larger number of variables to the analysis and applying also other methods of analysis.

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