

Article

# Gender Inequality: Entrepreneurship Development in the MENA Region

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**Abstract:** Entrepreneurship is increasingly popular among policy makers worldwide to promote and achieve economic development and growth. However, entrepreneurship rates differ from one country to another, and particularly the number of women entrepreneurs is still significantly lower than the number of male entrepreneurs in many contexts. In the present paper, we critically assess how country measures of gender inequality shape men and women’s entrepreneurial intentions, which were shown in literature to be excellent predictors of the establishment of new ventures. We analyze the direct and moderating effects of gender inequality on important individual-level antecedents of entrepreneurial intention. The United Nations Development Program (UNDP) identified gender inequality as a key contributor to the loss of human development and declared “gender equality” as a sustainable development goal (SDG) in the UN 2030 agenda. Our research draws on the gender inequality index and GEM data from nine Middle Eastern and North African (MENA) countries. Our results show that a culture of inequality leads to limited entrepreneurial behavior by both men and women in a population.

**Keywords:** women; men; development; gender inequality; entrepreneurship; intention; sustainability; MENA

## 1. Introduction

Entrepreneurship is recognized as pivotal for the development of regions and nations [1,2] and policy makers worldwide promote it as a means to aid economic growth [3–5] through the development of innovative products and services that create new markets and jobs [6]. Globally, an increase in policy interventions can be observed that promotes new venture creation at state, regional, and local levels [6,7], and contribute to sustainable growth and wealth creation [8]. Aligned with these developments, there is also an increasing number of women starting or owning a business [7]. However, entrepreneurship rates differ significantly from one country to another, with the number of women and men entering freelance activities and continuing business ventures within and across states [7]. Specifically, the number of women entrepreneurs in MENA is still lagging behind compared to men in many states [7]. Moreover, unlike their male counterparts, women tend to be motivated by economic necessity rather than business opportunities [6,9]. The situation of female entrepreneurship worldwide reflects gender inequalities in the external environment that are often more pronounced for women than they are for men [10], and such inequalities lead to unequal access to resources and opportunities [10,11]. Gender inequality is defined as the unequal treatment of men and women that leads to gender-based discrimination embedded in their rights, responsibilities, and opportunities [12]. As a result, countries with high gender inequality fail to recognize the diversity in men’s and women’s interests, needs, and priorities [12]. Gender Inequality has shown declines in a range of human development indicators [13], as a consequence, “gender equality” was adopted as a central goal in the

UN 2030 sustainability agenda. There is agreement among international business specialists from the business, economic, and development fields that improving conditions for female entrepreneurship and increasing the number of female-led ventures plays a central role in achieving a nation's "sustainable development" [14,15]. The achievement of goal 5 is especially important for MENA states, as they have continuously reported the lowest number of women in the labor force than any other region [16]. There is little agreement, however, on the nature of the entrepreneurial policies needed to support women's development.

While scholarly work on gender and entrepreneurship has grown in number, there is still limited research that analyzes socio-cultural and geo-political contexts, and how they may shape entrepreneurship ventures and entrepreneurial behavior [17]. Instead, many studies frame problems as a by-product of the underperformance of women entrepreneurs [18], rather than categorizing them as systemic or structural issues [19]. Research has shown that macro-environmental structures create gender inequalities in the realms of expectations, opportunities, and social status, as well as social and political power that affects men and women in business differently [20,21]. In this context, entrepreneurial intention has been previously shown to be the best predictor of the establishment of new ventures [22]. Yet, the correlation between economic and social development on the one hand and entrepreneurship behavior and intentions on the other is still under studied [23]. Particularly, in the MENA region, there is limited examination of how different institutional mechanisms shape women and men's economic activity differently [24,25].

Thus, in this paper, we seek to understand the effects of gender inequality as an important macro-environmental factor on entrepreneurial intention in the MENA region. To date, research has come to different conclusions as to the impact of gender inequality on entrepreneurial activities. Baughn, Chua, and Neupert [26] argue that the variable does not sufficiently explain the discrepancy in entrepreneurship rates between men and women. Other research shows how economic development and gender equality lead to higher rates of female entrepreneurship [23,27]. Critics have argued for theoretical approaches [9,19,28] that take into consideration the embeddedness of entrepreneurship in environments with gender inequalities that are reflected in economic, local, and institutional contexts [19]. The present study contributes to that research by examining how measures of gender inequality can impact and shape men and women's entrepreneurial intention. We analyze the direct and moderating effects of gender inequality on important individual-level antecedents of entrepreneurial intention. Our multi-level research allows us to identify the complex interaction of variables, and to show how a gendered macro environment moderates individual antecedents to entrepreneurial intention. Our empirical analysis is based on the gender inequality index (GII) and on Global Entrepreneurship Monitor (GEM) data from nine MENA countries and analyzes the impact of country characteristics on men's and women's entrepreneurial intention. Entrepreneurship in the region, albeit driven primarily by an individual founder or a founding team, is facilitated through concerted action on the part of a range of stakeholders including governments, international organizations such as the UN or World Bank, NGOs, womens' associations, investors and financiers, and academia and educational institutions [24,25]. The picture that arises from our research is that the organization of entrepreneurial actions in the region is very complex, as it also reflects the collective and systemic nature of entrepreneurship. We suggest that entrepreneurship in a gender unequal environment such as the MENA region has to be conceptualized as a multi-level process that involves economic actors and institutional and social norms shaping entrepreneurial behavior and processes.

The paper is organized as follows. We begin with a literature review linking together gender inequality and entrepreneurship, as well as entrepreneurial intention. We also illustrate how this knowledge informs our hypothesis, which we test in the following sections. Our results are presented and discussed, and our conclusion illustrates the measures that can be adopted to support the attainment of sustainable goals that can tackle inequality and promote human well-being.

## 2. Gender, Inequality, and Entrepreneurship

### 2.1. Gender Inequality

Entrepreneurship reduces poverty in developing economies [2,29]. However, inequality may erode such efforts since it affects the levels of entrepreneurship in society [30]. The SDGs view entrepreneurship positively, as they can assist in bringing women out of poverty and contribute to the eradication of gender inequality. The authors refer to economic inequality as the uneven distribution of financial resources within societies. Endowment with such resources is critical for subsequent business success [31], since they give access to credit and equity capital, allow the acquisition of other necessary resources like human and physical resources, and help start-ups survive the liabilities of newness [32]. Therefore, different degrees of inequality in nations can lead to various levels of entrepreneurship. Similarly, there exist significant differences in entrepreneurial levels between men and women [33] in terms of the lower number of entrepreneurial activities undertaken by women compared to men, in addition to the lower growth expectations and the smaller size of female-owned businesses [27]. Worldwide, men are also disproportionately more likely to create innovative, growth-oriented organizations [34]. Since inequality is an important antecedent to entrepreneurial activities in general, and in understanding social context, it is necessary to address “gender inequality” as an important explicatory variable when studying the gender dynamics gap in entrepreneurship.

Amartya Sen refers to gender inequality as “the deeply unequal sharing of the burden of adversities between women and men” [35] (p 466). In line with this, we define measures of inequality as providing people different opportunities in society due to perceived differences based solely on gender-related matters. As a construct, it comprises numerous interconnected dimensions and problems of inequality that are impossible to fit under one definition that could hold true across all cultures and societies. Studies addressing gender inequality essentially ask how resources and access to opportunities are distributed between sexes within society, and what social phenomena generate them. Ultimately, gender inequality is reflected the most in how men and women (who are social peers and share similar age, class, race, ethnicity, etc.) experience disproportionate levels of difficulty in accessing resources and opportunities. Different conceptual dimensions for gender inequality are offered in the literature: e.g., barriers to ownership and assets [36], services, education, life sustaining requisites (health, shelter, food), prestige, psychical enrichment, freedom from physical abuse, and behavioral constraints [37].

Various international organizations provide measures and rankings for global gender inequality. Notably, in 2010, the UN introduced the GII, which states the percentage of potential human development lost for gender inequality, and also provides a measure of the cost of gender inequality. The World Economic Forum (WEF) also relates gender equality to health, economic opportunities, and political empowerment in its Global Gender Gap Index. In their latest report, the WEF [38] reveals that gender inequalities have increased since 2008 in MENA and are in the bottom quartile. The two most comparable percentages are those of labor force participation, with a global average of 54% of women actively involved in the workforce (compared to 81% of men). Moreover, women worldwide earn significantly less than men (50% less on average) for working longer hours and doing most of the unpaid work (e.g., childcare). Political empowerment has slightly increased with an average representation of 23% worldwide; however, only two countries have reached gender parity in parliamentary representation, and only four countries have parity in ministerial roles. The WEF [38] expects gender inequality to rise for MENA further in the future because technological change stemming from the fourth industrial revolution is bound to disproportionately disrupt sectors that are dominated by a female workforce [38].

### 2.2. Gender Inequality in the MENA Region

MENA is a large region with about 360 million inhabitants [39]. Often, when referring to the MENA region, authors mean a territory that comprises Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United

Arab Emirates (UAE), West Bank and Gaza, and Yemen [40]. Together with the Palestinian territories, it encompasses 22 countries, 10 of which border the southern and eastern shores of the Mediterranean Sea. Economically, the MENA region has countries that are rich in natural resources, such as Algeria, Libya, and the Persian and Oman Gulf nations, as well as countries with scarce resources, such as Yemen, Tunisia, and others. The overall GDP in the region varies between US\$ 1.582 billion (lowest) and US\$ 777.87 billion (highest) [41]. The UNDP's Human Development Index (HDI) lists countries such as Qatar, Kuwait, and the UAE as very highly developed countries, while nations such as Morocco, Algeria, Egypt, Syria, and Palestine are listed as developing. In order to have a detailed understanding of the MENA, we included states with the highest and lowest levels of gender inequality, and a representative sample between.

Countries in the MENA region exhibit the highest gender inequalities worldwide: even though the region has closed 60% of its gender gap, it still suffers a gap of 40% [38]. Although there have been significant changes in the social and economic context including urbanization, industrialization, the extended education of women, and lower fertility rates, there exist large disparities between men and women regarding their participation and access to opportunities in the economic and political arenas [42]. All countries in the region were signatories to the Millennium Development Goals (MDGs), and are Sustainable Development Goals (SDGs) committed to promoting gender equality and the empowerment of women. In this pursuit, MENA countries have seen increased female literacy to global average levels of 80% [43]. Moreover, MENA countries invested significantly in the education of girls and women and were able to increase female enrolment in secondary education significantly, with the result that women surpassed men in enrolment numbers in higher education [43]. Yet, despite these impressive increases, women in the MENA region still face significant challenges in the labor market.

According to the International Labour Organization (ILO) [44], the Arab and the North African regions display the lowest levels of women's participation in the labor market (with less than 30%) compared to a global average of 49% [44]. Table 1 shows the % labour force participation according to selected countries in the MENA region and reveals great variations between different economies. Female labor force participation in Bahrain (44%) and the UAE (42%) is the highest compared to Syria (15%), which is currently in last position. Access to the labor market, and the possibility for women to find jobs also proves very challenging across the entire region. In the Arab region, women's unemployment averages 21.2% and is nearly three times the rate of male unemployment (8.3%); in North Africa, the situation is similar with an unemployment rate of 20% for women and 9.5% for men. Arab countries in this respect have the highest gender gap amongst all world regions (12.9), followed by North Africa (10.5) (see Table 1). Moreover, the labor markets in the region are among the most gender segregated in the world. For example, in the Arab world, labor market segregation amounts to 49.6% and in North Africa to 35.4% [44]. As to sectorial segregation, where women are over-represented in education, health, and social work, as well as agriculture (in North Africa), it is also reflective of gendered traditions and stereotypical roles in those societies. Besides disparities in economic participation and opportunities, a significant gender gap exists with regards to legal rights. Inequality in front of the law often creates significant obstacles for female entrepreneurs in particular [45].

All MENA countries are signatory to the UN Convention on the elimination of all forms of discrimination against women (CEDAW), which came into force in 1981. It is considered the international bill of rights for women and defines what constitutes discrimination against them. By their signature, states commit to incorporate principles of equality between men and women in their legal system, ensure the enforcement of these principles and the effective protection of women, as well as eliminate all acts that represent discrimination against women. The MENA governments, however, have specific reservations on several articles. For the most part, they have reservations against CEDAW demanding "the realization of gender equality" (Article 2), the right of women to acquire, change, and retain a nationality and pass it on to their children (Article 9), the right of women to conclude contracts, administer property, and be equal in all stages of court and tribunal procedures

(Article 15), and the right of women in marriage, divorce, and child custody (Article 16). The example of specific reservations by governments on some articles, which, nevertheless, represent fundamental women's rights, underlines the pervasiveness of restrictive cultural norms and traditions that place very little importance on female agency and empowerment outside their house, and limit a woman's ability to have direct commercial transactions with people outside of her close, private, and family contexts, as the example of the KSA shows [46,47]. Although the guardian system (KSA) has recently been discarded and women are able to drive if over 30; there is still a commitment to work segregation in many fields, and a concern to show "qiwama" (protection): responsibility.

**Table 1.** Available facts about women and work in the MENA region.

Country	Women (Value %)			Female/Male TEA Ratio	Female/Male Opportunity Driven TEA Ratio
	Labour Force Participation	Employment to Population Ratio	Unemployment Rate		
Egypt	22.5 (2015)	17 (2015)	24.2 (2015)	0.36 (2016)	1.04 (2016)
Turkey	32.3 (2016)	28 (2016)	13.6 (2016)	0.46 (2016)	0.96 (2016)
Pakistan	21.9 (2016)	22.7 (2016)	6.1 (2015)	0.06 (2012)	-
Iran	19.1 (2016)	11.8 (2016)	20.7 (2016)	0.47 (2016)	0.95 (2016)
Algeria	13.5 (2016)	13.5 (2016)	20.7 (2016)	0.51 (2013)	1.08 (2013)
Tunisia	26.7 (2016)	19.7 (2013)	23 (2013)	0.43 (2012)	0.93 (2015)
Saudi Arabia	21.4 (2015)	16.8 (2015)	21.4 (2015)	0.75 (2016)	1.03 (2016)
UAE	42.1 (2009)	37.5 (2009)	10.8 (2009)	0.56 (2016)	0.95 (2016)
Qatar	13.6 (2009)	60.5 (2009)	0.7 (2009)	0.84 (2016)	1.17 (2016)

### 2.3. Gender Inequality and Entrepreneurship

Gender inequality tends to decrease with per capita income [48,49]; however, it is not yet clear whether such improvements in equality are also positively correlated with female entrepreneurship rates [50,51]. For example, Wennekers, Van Wennekers, Thurik, and Reynolds [52] show that nascent entrepreneurship and start-up rates decline with the increase of economic development, and there seems to be no correlation between gender equality and female entrepreneurial activities. In line with this, low rates of female entrepreneurship also exist in developed economies where gender equality is typically relatively high. However, research shows that in those countries, female entrepreneurship rates are low because all citizens have access to high quality healthcare and social services [53] and financial resources, such as bank loans and protected property rights, so women do not feel compelled to undertake freelance activities to gain these benefits [54]. Baughn, et al. [26] base their research on GEM data and show that gender inequality is not a predictor of the proportion of female entrepreneurship. Instead, the authors show that countries with low rates of female entrepreneurship tend to have low overall levels of entrepreneurial activity (independent from gender) because of a lack of general normative support for entrepreneurship to which women tend to be more responsive than men. Some research argues that gender inequality may have positive effects on female entrepreneurship [49], as it breeds dissatisfaction with organizational or macro environmental structural issues such as glass ceiling or labor markets that penalize women and push them to start their own independent businesses [55].

In the MENA region, however, the level of female participation in entrepreneurship is among the lowest across all world regions, with only 4% of entrepreneurial activity involving women [49]. In most MENA countries, men are far more likely to form businesses, which account for two thirds more than women businesses. Women-led businesses are 60% more likely to employ a single person without any other employees. Further, women have shown less ambition regarding the advance and growth of their companies compared to men [49].

#### 2.4. Gender Inequality and Entrepreneurial Intention

“Entrepreneurial intention” has been emphasized as a central element [56,57] for individual willingness and perceived ability to engage in venture activities [58,59]. Entrepreneurial intention is an individual’s cognitive representation of future actions that aims to establish new ventures or create new value within existing companies [60]. Intention is derived from the desirability of entrepreneurial action, which relates to norms and personal attitudes involved in a certain entrepreneurial activity, as well as from the feasibility of being entrepreneurial, which refers to an individual’s conviction in their ability to accomplish entrepreneurial activities [60]. Norms affect behavior, and are strongly correlated with intentions and beliefs of others are given important weight in the process of developing positive motivation for entrepreneurial activities [60]. Research has identified various factors on the individual level that are important antecedents for entrepreneurial intention. In the following, we address the role of “individual risk taking” and “entrepreneurial role models” as factors that affect the “desirability” of entrepreneurship. Moreover, we address “perceived capabilities”, “opportunity recognition”, and “experience with business discontinuity” as factors related to the feasibility of entrepreneurship. We discuss their interactions with gender inequality and the effects on entrepreneurial intention.

Empirical evidence for the MENA region suggests that women’s life choices, such as entrepreneurship, are clearly influenced by their “reading” of what is socially acceptable and desirable for different genders [61,62]. Research shows that societies in the MENA region are highly gendered because of an intersection between culture, patriarchy, and religion (Islam) that leads to predominantly conservative (religious) orientations, which in turn significantly constrain female agency and opportunities [63]. In most countries in the region, inequality is institutionalized in norms and women are not considered equal to men; consequently, they find themselves locked in very restricted gender roles [42]. This is reflected in negative attitudes towards women employment and professional development or career success [64] since gendered assumptions in those societies expect men to be decisive and women to be intuitive and focused on personal relationships [65,66]. Inequality originates from traditional, gendered ideas and assumptions that confine women to the role of homemakers and caretakers of children and family [67,68], and that clashes with female entrepreneurial activities. A recent review of the literature on female entrepreneurship in the MENA region [69] reports on additional barriers for women created by the unique social norms we highlighted above. One study found that many women in the region, independent of their social status, need to constantly negotiate their professional roles with their husbands and extended families in the form of assurances they have to give that all family obligations will be met in tandem with their jobs [46,70]. In fact, many women in the region express great concern about balancing family expectations and business engagements, and identify this issue as a greater barrier to their success than even “access to capital” or “societal attitudes” towards entrepreneurship [64]. Moreover, certain religious traditions and understandings endow men with significant authority over women in terms of financial responsibility, inheritance, marriage, and divorce [71]. From this follows:

**Hypothesis 1a (H1a).** *Gender inequality is negatively correlated with men’s and women’s entrepreneurial intention.*

**Hypothesis 1b (H1b).** *Gender inequality is positively correlated with men’s and women’s entrepreneurial intention.*

Risk taking as an individual trait has been identified as having a positive effect on entrepreneurial intention; it refers to the degree to which an individual is willing to take chances while risking loss [72]. In general, the higher the propensity to take risks, the more a person is likely to initiate action on an intention [73]. Empirical research has shown that men and women differ in their risk preference, where women tend to have less appetite for risk taking [74,75]. Some research argues that the role of sectorial context might change individuals’ risk-taking behavior independent of their gender [76].

Yet, Ivanova Yordanova and Alexandrova-Boshnakova [77] show that risk perceptions are similar for men and women. However, both genders differ significantly in their risk preferences and willingness to take risks. This is in line with research that blames these differences on societal beliefs and norms about the role of women and men in society [74]. Therefore, we expect that gender inequality is likely to affect the relationship between risk taking and the entrepreneurial intention of men and women.

**Hypothesis 2a (H2a).** *Risk taking positively affects entrepreneurial intention of men and women.*

**Hypothesis 2b (H2b).** *Gender inequality will negatively moderate the relationship between risk taking and the entrepreneurial intention of men and women.*

Research finds that having entrepreneurial role models in one's social network typically increases individuals' entrepreneurial intention since they provide prospective entrepreneurs with valuable founder knowledge and business relations [78]. Furthermore, seasoned entrepreneurs are also able to give emotional support and encouragement to prospective businesspeople [79,80]. Such contacts serve as role models that positively affect attitudes and beliefs regarding an individual's entrepreneurial abilities [80] independent of the role model's own professional success [81]. However, women's expectations regarding new ventures are likely to be shaped by a masculine image of entrepreneurship, which relies nearly exclusively on the experiences of men and traditionally male-owned businesses [82]. Supportive role models are, therefore, even more important for potential female entrepreneurs in gendered societies in order to instill confidence in female start-up activities as acceptable professional career choices [80]. A gendered context such as the one in the MENA is likely to amplify the importance of positive role models in women's personal networks.

**Hypothesis 3a (H3a).** *Entrepreneurial role models positively affect entrepreneurial intention of men and women.*

**Hypothesis 3b (H3b).** *Gender inequality will positively moderate the relationship between the role model and the entrepreneurial intention of women compared to men.*

The literature has identified various factors at the individual level that are considered important antecedents for entrepreneurial intention.

High gender inequality in developmental contexts often goes along with great disparities in girls' access to education. The Arab region, in particular, has the highest number of girls who do not receive schooling [83]. Previous research has shown that the link between education and the intention to become self-employed is very strong since it affects people's perception of their personal abilities and skills [84] and whether they consider founding a venture a feasible task. Research further shows that perceptions of competency deficiencies affect women's entrepreneurial behavior significantly more than that of men [85]. Women tend to value their skills and capabilities significantly less than men with comparable skill sets, and this skeptical perception regarding their own capabilities often leads women to avoid entrepreneurial activities [86,87]. Disbelief in their own inabilities manifests in early adolescence, where such effects are already significantly greater for girls developing future entrepreneurial intention compared to boys [88]. A low confidence level in their own capabilities remains a constraint for most established women entrepreneurs, which also has significant negative effects on their venture growth [89]. Moreover, in countries with high levels of gender inequality, the vertical and horizontal gender segregation of labor markets is very pronounced, with women often occupying lower hierarchical levels and being active in different sectors than men (e.g., healthcare, education) [90]. Low female labor market participation in low per capita income countries has a negative impact on female entrepreneurial activities [91] since it results in a lack of exposure to professional experiences that can be helpful for entrepreneurial activities like opportunity recognition, market knowledge, and technical know-how.

**Hypothesis 4a (H4a).** *Perceived capabilities are positively correlated with entrepreneurial intention of men and women.*

**Hypothesis 4b (H4b).** *Gender inequality will negatively moderate the relationship between perceived capabilities and the entrepreneurial intention of women compared with men.*

According to Shane [58], the existence of entrepreneurial opportunities within an environment and the ability of individuals to recognize them are prerequisites for the entrepreneurial process to evolve. Following on from the identification of an opportunity is the concrete entrepreneurial intention to exploit it. However, the ability to identify business opportunities increases with human capital, which could be general knowledge based on prior education, as well as more specific knowledge and skills acquired on the job (e.g., firm- or market-specific knowledge) [58,79]. Research shows that the nature of men's and women's human capital differs: men tend to have more founder experience [92], more managerial experience [93], more industry experience [94], and more organizational experience [95] compared to women. Ucbasaran, Wright, and Westhead [96] empirically show that the number of identified opportunities is positively related to human capital. Some researchers argue that limited access to educational resources or, as in the MENA region, access to the labor market, prevent women from developing the necessary background knowledge in order to identify potential growth for business opportunities [97], which negatively impacts the number of successful female entrepreneurs. Others argue that women just apply different opportunity recognition strategies that rely on knowledge stores that don't resemble those which men have, yet are equally innovative [98]. According to the authors, women are more likely to engage in strategies that offer specifically designed products of high quality, whereas men are more driven by pecuniary motivations and will more likely identify business opportunities that generate a quick revenue stream (e.g., spinouts, buyouts, licensing opportunities) as favored by venture capitalists [98]. However, in both cases, women are at a disadvantage since gendered societies tend to either limit access to necessary educational and professional resources, or, as the low rate of venture capital funding of women-run ventures reveals, it seems that gendered societies value male strategies more. In both cases, the consequences are significant for female entrepreneurship.

**Hypothesis 5a (H5a).** *Perceived entrepreneurial opportunities are positively correlated with entrepreneurial intention of men and women.*

**Hypothesis 5b (H5b).** *Gender inequality will negatively moderate the relationship between perceived opportunity and the entrepreneurial intention of women compared with men.*

Discontinuity could be involuntary (for example, bankruptcy) or voluntary (for example, selling off the venture). Most firm exits are voluntary and are motivated by "better business opportunities elsewhere" [99]. Even after exiting a business, research shows that previous business ownership leads to self-reinforcement [100], where former entrepreneurial experience in a certain field further strengthens entrepreneurial determination and persistence [96]. Research on habitual and serial entrepreneurs shows that previous business ownership allows them to increase entrepreneurial and managerial experience [101], gives them access to necessary resources for opportunity identification and exploitation, enhances entrepreneurial reputation, and broadens the business related networks including relationships with financial institutions [102]. Such capabilities and resources can be reallocated to new ventures [102] and even allow entrepreneurs to overcome the liabilities of newness [103].

Ucbasarane, et al. [96] show that entrepreneurs who had experience with business discontinuity and voluntarily exited their previous ventures were more likely to have entrepreneurial intention and to start a new business. The authors did not distinguish between female and male entrepreneurs, but we assume that the effect remains the same even in a context with gender inequality, since women



with experience in business discontinuity have already overcome the barriers to start a business at least once.

**Hypothesis 6a (H6a).** *Previous experience with business discontinuity is positively correlated with entrepreneurial intention of men and women.*

**Hypothesis 6b (H6b).** *Gender inequality does not affect the relationship between business discontinuity experience, and the entrepreneurial intention of women and men.*

### 3. Method and Data

#### Sample and Variables

The main goal of the study is to investigate the effects of individual factors (e.g., importance of the role model, perceived opportunity, perceived capability, business discontinuity experience) and the moderating societal factor of gender inequality on the entrepreneurial intention of men and women. The dependent variable “entrepreneurial intention” is a binary variable. We therefore use binary logistic regression for our analysis and to understand the correlation between independent and dependent variable. The model estimates the probability that a factor is present (e.g., probability of having entrepreneurial intention) in respect of different explanatory variables. We use a single categorical variable;  $\pi = \Pr(Y = 1|X = x)$ . If we consider  $X$  as predictor variable, the likelihood of success depends on the measures of the dependent variable. In a logistic regression model,  $Y$  is the binary response variable:

- $Y_i = 1$ , if the trait is present in the observation  $i$  (e.g., person, unit, etc.)
- $Y_i = 0$ , if the trait is not present in observation  $i$
- $X = (X_1, X_2, \dots, X_k)$  is the set of explanatory variables.  $X_i$  is the observed value of the explanatory variable for observation  $i$ . Therefore, the model of the logistic regression can be expressed as follows:

$$\pi_i = \Pr(Y_i = 1|X_i = x_i) = \frac{\exp(\beta_0 + \beta_1 x_i)}{1 + \exp(\beta_0 + \beta_1 x_i)}$$

or

$$\begin{aligned} \text{logit}(\pi_i) &= \log\left(\frac{\pi_i}{1 - \pi_i}\right) \\ &= \beta_0 + \beta_1 x_i \\ &= \beta_0 + \beta_1 x_{i1} + \dots + \beta_k x_{ik} \end{aligned}$$

According to the calculations above,  $\exp(\beta_0)$  represents the odds that a certain factor is present in an observation  $i$  when  $X_i = 0$ , at the baseline in the logistic regression. Moreover,  $\exp(\beta_1)$  measures every increase in  $X_{i1}$ , and the odds that the characteristic is present is multiplied by  $\exp(\beta_1)$ . This reflects a simple linear regression with a multiplicative change in rate. This can be expressed in an estimated odds ratio:

$$\frac{\exp(\beta_0 + \beta_1(x_{i1} + 1))}{\exp(\beta_0 + \beta_1 x_{i1})} = \exp(\beta_1)$$

Typically, the logistic regression model shows that the effect of a covariate on the chance of “success” is linear on the log-odds scale, or multiplicative on the odds scale. If  $\beta_j > 0$ , then  $\exp(\beta_j) > 1$ , and the odds increase. However, if  $\beta_j < 0$ , then  $\exp(\beta_j) < 1$ , and the odds decrease. In this paper, instead of  $\exp(\beta_i)$ , we have used B coefficient as a linear regression model. The statistic  $-2\log L$  represents a badness-of-fit measure. That is, large numbers mean poor fit of the model regarding the data. The statistic chi-square is used to test whether a variable reduces regarding its badness-of-fit measure. A significant chi-square reveals that the independent variable is a very good predictor in this model.

We run the analysis with and without country effects. Concretely, we want to find out about the impact of national differences on the relation between an independent variable, notably gender

inequality, and the independent variable entrepreneurial intention. For this, we have created dummy variables for each country in our sample that were added to the regression. Through this we can detect interaction effects between 'gender inequality' and country. Interaction effects characterize varieties in effects of one independent variable on the dependent variable in a regression, depending on the level of a third, independent variable [104]. Our dummy variables are artificially created variables that take values of 0 and 1, where the values indicate the presence or absence of some factor. Following the approach of Klyver, et al. [104] we select one country in our sample as a reference for the analysis. This country is not supposed to display extreme (negative or positive) values regarding the outcome of the dependent variable (e.g., entrepreneurial intention) in our analysis. We have selected Egypt as reference group since in this country, mean of women and men's entrepreneurial intention (26.5%) is about total mean of entrepreneurial intention  $\{25.5\% = (29\% + 22\%)/2\}$  of the MENA countries.

We use data from the GEM and from the GII of the UNDP Human Development report. GEM data has become increasingly attractive in comparative entrepreneurship research [3,105,106] that explores country-level attributes and various aspects of entrepreneurial processes and seeks to link these to meaningful outcome variables.

GEM data collection is based on standardized methodologies for data processing: all national datasets are processed and harmonized centrally, further reducing difficult-to-control variations resulting from country-specific differences in data processing protocols [107]. This standardization enhances GEM's suitability for comparative entrepreneurship research [108]. GEM data has become a major source for international comparative entrepreneurship research because it is unique and allows the investigation of research questions that could not have been addressed previously [109]. Bergmann et al. [109] have systematically reviewed 109 empirical, peer-reviewed journal articles that are based on the Global Entrepreneurship Monitor's adult population survey data (58 papers published in SSCI-listed journals and 51 in non-SSCI-listed journals). Of these, 55 apply multi-regression models for micro and macro levels. In line with this, the present research, in a regression model that we will describe in next section, uses regression modeling to analyze variables such as perceived opportunity, perceived capability, presence of role model(s), and entrepreneurial intention.

In addition, we draw on GII data. The GII is a composite measure that compares the situation of women and men between countries in three dimensions: reproductive health, empowerment through education and political participation, and the degree of economic status reflecting inequality in achievement in these dimensions, and can be used for international comparisons, as presented in the 2010–2014 Human Development Report (HDR). Two indicators, the maternal mortality ratio and the adolescent fertility rate, evaluate the quality of reproductive health in a country. The HDR model also includes indicators that measure empowerment, which includes the number of parliamentary seats held by men and women, as well as tertiary and university attainment levels. The labor dimension is measured by women's participation rate. The GII refers to unequal treatment or the distorted perception of individuals based on their gender. The GII values range from 0 (equality) to 1 (total inequality), and they express the lack of achievement vis-à-vis gender disparities.

Our empirical uses Global Entrepreneurship Monitor (GEM) survey data for nine MENA countries for the years 2010 through 2014. In every country, an annual GEM adult population survey is distributed to at least 2000 representative respondents who then answer numerous questions regarding entrepreneurial attitudes, engagement, and influencing factors [104]. This data provides an accurate picture of entrepreneurial activity, and represents the current stage of entrepreneurship, although it covers a span from 2010 to 2014. GEM has a clear release policy regarding data collected by different national teams and regarding specific countries. Such data cannot be released for public use before three years following publication of the national GEM reports. However, this practice is completely accepted in international entrepreneurship research.

The present study focuses on analyzing the data records of nine Middle East and North African (MENA) countries: Egypt, Turkey, Pakistan, Iran, Algeria, Tunisia, Saudi Arabia, the United Arab

Emirates, and Qatar. The total sample comprises 46,190 respondents. Descriptive statistics can be found in Table 2.

**Table 2.** Cross tabulation of country, participants' gender, age, entrepreneurial social values, Gender Inequality Index.

Country	Participants		% Yes: Entrepreneurial Intention	Age Average	Entrepreneurial Social Values Average	Gender Inequality Index
	Gender	Count (%)				
EGYPT (n = 2633)	Male	1136 (43.1%)	30	39	3.19	0.574
	Female	1497 (56.9%)	23	39	3.17	
TURKEY (n = 22,074)	Male	14,269 (64.6%)	28	40	3.53	0.359
	Female	7805 (35.4%)	20	38	3.59	
PAKISTAN (n = 1386)	Male	608 (43.9%)	40	34	2.9	0.536
	Female	778 (56.1%)	18	33	3.07	
IRAN (n = 7596)	Male	3385 (44.6%)	33	34	2.59	0.515
	Female	4211 (55.4%)	26	34	3.86	
ALGERIA (n = 5233)	Male	2585 (49.4%)	32.5	36	2.99	0.413
	Female	2648 (50.6%)	31	35	3.09	
TUNISIA (n = 1725)	Male	779 (45.2%)	29	36	3.23	0.243
	Female	946 (54.8%)	14	35	3.36	
SAUDI ARABIA (n = 1214)	Male	638 (52.6%)	0.3	36	3.14	0.284
	Female	576 (47.4%)	0.0	34	3.21	
UAE (n = 1797)	Male	1317 (73.3%)	1.5	33	2.73	0.232
	Female	480 (26.7%)	0.8	33	2.79	
QATAR (n = 2532)	Male	1400 (55.3%)	51	37	3.66	0.524
	Female	1132 (44.7%)	46.5	35	3.74	
Total (n = 46,190)	Male	26,117 (56.5%)	29	38	3.3	Ave. = 0.408
	Female	20,073 (43.5%)	22	36	3.3	

The operational definitions of the variables used in this research can be found in Table 3. We use age (respondents cover an age span from 18 to 64 years) and entrepreneurial social values as control variables.

Entrepreneurial intention is the dependent variable and refers to a respondent's expectation of starting a new business in the near future. It is measured on a scale from 0 to 1, where 0 indicates no intention to start a new business and 1 indicates full intention to start a new business in the next three years. Following Liñán [110], Shapero & Sokol [72], Krueger & Brazeal [111], and Krueger [56], entrepreneurial intention is the most important variable to predict entrepreneurial behavior of entrepreneurs. In line with GEM, we defined the construct of entrepreneurial intention in nominal scale (yes = 1/no = 0 form): expecting to start a new business in next three years.

Gender inequality is a direct effect and moderator variable. It is measured based on the Gender Inequality Index. As discussed above, the global GII has three dimensions: reproductive health, empowerment, and labor market participation. Two indicators measure the reproductive health dimension: maternal mortality ratio and adolescent fertility rate. Two further indicators measure the empowerment dimension: the share of parliamentary seats held by each sex, and secondary and higher education attainment levels. The labor dimension is measured by women's labor force participation rate. The global GII reflects gender-based disadvantage on the three dimensions above. The degree of discrimination ranges between 0, where women and men fare equally, and 1, where one gender fares as poorly as possible in all measured dimensions [112]. The GII refers to the unequal treatment or the distorted perception of individuals based on their gender. Gender inequality can be defined as people

receiving different opportunities in society due to perceived differences between them based solely on gender-related matters. The GII reflects differences in the status, power, and prestige accorded to women and men in groups and societies. The GII also states the percentage of potential human development lost to gender inequality and it provides a measure of the cost of gender inequality. This index is a statistical concept that measures the strength of the relationship between two variables. In this context, it is important to measure the effect size. The greater the effect size, the greater the difference between two groups will be. According to our research sample, the mean value of entrepreneurial intention for male ( $n = 26,117$ ) and female ( $n = 20,073$ ) are 0.29 and 0.22, respectively (see Table 2).

In this study, we use five independent variables related to the individual entrepreneur: “perceived entrepreneurial opportunity” is measured on a 0/1 scale, indicating perception of future opportunities (up to six months on). We also examined the impact of a role model, or of having had an entrepreneur in one’s personal social network over the past two years. This variable is also measured on a 0/1 scale. The third independent variable we test is “perceived capability”, which is measured as perceiving to have the required skills and knowledge to start a new business. To test the effect of prior business discontinuity on entrepreneurial intention, we measured “business discontinuity” on a 0/1 scale. This variable shows if the potential entrepreneur has already previously operated and stopped a business activity. Moreover, “risk taking” is measured as a self-perceived variable based on not fearing failure.

**Table 3.** Operational definitions of variables, their description and measurement scale.

Variable	Description	Scale
Age (CV)	Aged 18–64	From 18 to 64 age
Entrepreneurial social values (CV)	Social values toward entrepreneurship include aspects such as the extent to which society values entrepreneurship as a good career choice; whether entrepreneurs have high societal status; whether people prefer to have same living standard to all and the extent to which media attention to entrepreneurship is contributing to the development of a positive entrepreneurial culture.	As a control variable ranges between 0, where entrepreneurial activities not at all is supported by social values view, and 4, where entrepreneurial activities is fully supported by social values.
Gender Inequality Index (MV)	The Gender Inequality Index (GII) reflects gender-based disadvantage in three dimensions: reproductive health, empowerment, and the labor market.	It ranges between 0, where women and men fare equally, and 1, where one gender fares as poorly as possible in all measured dimensions.
Role model (IV)	Knowing someone personally who started a business in the past 2 years.	Nominal scale (yes = 1, no = 0)
Perceived opportunity (IV)	Perceiving good opportunities for starting a business in the area living in the next six months.	Nominal scale (yes = 1, no = 0)
Perceived capability (IV)	Perceived to have the required skills and knowledge to start a new business.	Nominal scale (yes = 1, no = 0)
Business discontinuance experience (IV)	To sold, shut down, discontinue or quit a business from who owned and managed, any form of self-employment, or selling goods or services to anyone in the past 12 months.	Nominal scale (yes = 1, no = 0)
Risk Taking	Not having fear of failure.	Nominal scale (yes = 1, no = 0)
Entrepreneurial intention (DV)	Expecting to start a new business in next three years.	It ranges from 0 (no intentions) to 1 (full intentions) to start a business

Note: CV, MV, IV, and DV are the abbreviation for the terms Control Variable, Moderating Variable, Independent Variable and Dependent variable.

## 4. Results

### 4.1. Descriptive Statistics

The GII compares equality between genders in 159 countries. The higher the GII value, the greater the disparity between women and men. The effect is based on three pivotal dimensions of development: health (measured based on maternal mortality ratio and adolescent birth rates), political empowerment (based on female representation in parliament and access to secondary education), and access to the labor market. The highest scoring and ranking country in the region is the UAE (GII value of 0.232; the country ranks 47 out of 159 nations) (see Table 2). Table 2 also gives descriptive information about entrepreneurial intention in the different countries of our sample, as well as entrepreneurs' age, the value of entrepreneurship in national cultures, and the GII. These results are aligned with the GEM global report [27], where the authors found that factor- and efficiency-driven economies both had significantly higher entrepreneurial rates among women than was the case in innovation-driven economies [27]. Table 4 presents an overview regarding the independent variables with regards to country participants and gender. For example, the lowest value for "perceived opportunity" can be found in Tunisia, where only 25% of female respondents replied positively compared to 41% of male Tunisian respondents. On the highest end of the continuum, 74% of Saudi women claim to have perceived good business opportunities compared to 71% of Saudi men. Turkey displayed the lowest value for men regarding "opportunity recognition" (37%). This is, however, significantly higher than the lowest female value in Tunisia. The highest value for men regarding perceived opportunities) was 71% in Saudi Arabia. The existence of an entrepreneurial role model received an overall low value. The relevance of role models seems highest in Algeria where 60% of the male and 52.5% of the female respondents replied positively, compared to very low levels of 29% for men and 26% for women in the UAE (the lowest value here was 24% of Turkish women who had an entrepreneurial role model in the network). Across all countries, the values for perceived capabilities were higher for men compared to women (highest were men in Saudi Arabia with 77% while the highest value for women was 62.5% in Iran). In some countries, discrepancies regarding perceived capabilities for entrepreneurship are more pronounced, as, for example, in Saudi Arabia, where 27% more men perceive themselves capable of starting a venture, and in Qatar, where 20% fewer women consider their capabilities relevant for entrepreneurship. The variable "experience with business discontinuity" was very low for men and women and spanned from 1% of women in Pakistan and Saudi Arabia to 7% of men in Iran (compared to 2.5% of Iranian women). The variable "risk taking" was highest for male respondents in Tunisia (79.5%). However, the results of some countries were very surprising, where women showed significantly more propensity for risk taking than their male counterparts. In Pakistan and Saudi Arabia, more than 10% of the female respondents reported having higher risk-taking tendencies than men, and in the UAE, 4% of women surveyed reported such tendencies.

**Table 4.** Cross tabulation of country, participants' gender and independent variables of study.

Country	Gender	% Perceived Opportunity		%Role Model		%Perceived Capability		%Business Discontinue Experience		%Risk Taking	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
EGYPT	Male	44	56	44	56	65	35	5	95	67	33
	Female	40	60	31	69	43	57	2	98	57	43
TURKEY	Male	37	63	33	67	53	47	5	95	67	33
	Female	33	67	24	76	40	60	3	97	64	36
PAKISTAN	Male	54	46	51	49	56	44	3	96	62	38
	Female	38	62	39	61	40	60	1	98	72.5	27.5
IRAN	Male	67	33	41	59	63	37	7	93	63	37
	Female	28	72	30	70	62.5	37.5	2.5	97.5	62.5	37.5
ALGERIA	Male	56	44	60	40	61	39	5	95	63	37
	Female	51	49	52.5	47.5	54.5	45.5	2	98	61	39
TUNISIA	Male	41	59	53	47	65	35	5	95	79.5	20.5
	Female	25	75	35.5	65.5	43	57	4	96	68	32
SAUDI ARABIA	Male	71	29	42.5	57.5	77	23	3	97	39	31
	Female	74	26	41	59	50	50	1	99	50	50
UNITED ARAB EMIRATES	Male	40	60	29	71	59	41	4	96	51	49
	Female	48.5	51.5	26	74	46	54	2.5	97.5	55	45
QATAR	Male	40	39	32	68	58	42	3	97	71.5	28.5
	Female	59	41	23.5	76.5	38	62	2	98	68	32

#### 4.2. Results from the Multi Binary Logistic Regression

We first run a multi binary regression without considering country effects. The results can be found in Table 5 and are displayed in three regression models. The first model only integrates the control variables "age" and "entrepreneurial social values", which are not significant. The second model analyzes the direct effects of five independent variables (perceived opportunity, role model, perceived capability, business discontinuity experience, and risk taking) on entrepreneurial intention. All independent variables are significant and positively correlated with men's and women's entrepreneurial intention.

In Model 2, the "perceived capability" received the highest coefficients for women (0.909) and "business discontinuity experience" was highest for men (0.768). However, it is remarkable that coefficients for "perceived capability" are significantly higher for women compared to men. On the other hand, the coefficients in the case of role model are significantly higher for men (0.245) than for women (0.171). This difference is even more pronounced for the risk taking variable, where the direct effects of risk taking on entrepreneurial intention appear double for men (0.185) compared to women (0.90). The variables "perceived opportunities" and "experience with business discontinuity" reveal relatively equal effects for men and women with only slightly higher coefficients for women. In model 3, we integrate 'gender inequality' as a variable and test the direct and moderating effects of gender inequality on women and men's entrepreneurial intention. In this model, the direct effects of the five independent variables become either insignificant, as in the case of perceived opportunities and business discontinuity, or the effects become significantly amplified, as for the rest of the variables.

Table 5. Multi binary logistic regression with B coefficients.

Variables	Model 1		Model 2		Model 3	
	Female	Male	Female	Male	Female	Male
Age	−0.024	−0.021 ***	−0.023 ***	−0.020 ***	−0.022 ***	−0.019 ***
Entrepreneurial (social) values	0.019 **	0.017 **	0.016 **	0.013 *	0.022 **	0.019 ***
Perceived opportunity			0.498 ***	0.457 ***	−0.107	0.233
Role model			0.171 ***	0.245 ***	0.410 *	0.706 ***
Perceived capability			0.909 ***	0.728 ***	1.325 ***	1.180 ***
Business discontinuity experience			0.793 ***	0.768 ***	−0.215	0.245
Risk taking			0.090 ***	0.185 ***	0.409 *	0.600 ***
Gender Inequality					3.182 ***	5.105 ***
Gender Inequality * Perceived opportunity					1.427 ***	0.545
Gender Inequality * role model					−0.521	−1.173 ***
Gender Inequality * Perceived capability					−0.929 **	−1.070 **
Gender Inequality * Business Discontinue					2.550 *	1.316
Gender Inequality * Risk taking					−0.746	−1.035 ***
Cox & Snell R Square	0.014	0.013	0.072	0.069	0.084	0.088
Nagelkerke R Square	0.022	0.019	0.11	0.098	0.13	0.125
R Square changes			0.09	0.079	0.02	0.027

Note: \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

In a second step, we ran a multi-binary regression with consideration of country effects in order to account for differences between countries in our sample that may be due to cultural or economic variations. For this reason, we have created a dummy variable for each country in our sample (see Table 6). Dummy variables are artificial variables that take values of 0 and 1, where the values indicate the presence or absence of some impact factor. Following the method of Klyver et al. [104], we selected a country from our sample as a reference. This requires that the selected country is very similar to the MENA average in terms of values regarding the dependent variable of entrepreneurial intention. For this we selected Egypt since the mean value for women and men's entrepreneurial intention (26.5%) compares to the total mean of entrepreneurial intention  $\{25.5\% = (29\% + 22\%)/2\}$  of the 8 other MENA countries in our sample. We report the results for the last model of logistic regression that integrates country dummy variables in Table 6.

We report the B coefficient, Wald Chi-Square statistic, as well as the  $\exp(B)$ . The Wald Chi-Square statistic tests the unique contribution of each predictor independent variable whilst holding constant the other predictors. Notice that each independent variable should meet the conventional 0.05 standards for statistical significance. The Wald test follows the chi-square distribution in the context of logistic regression model and is used to determine whether the effect of a certain independent variable X on Y is significant or not. The Wald chi-square is more conservative than the drop in the -2 Log Likelihood chi-square. The Wald chi-square test that tests the null hypothesis that the constant equals 0. This hypothesis is rejected when the p-value (Sig) is smaller than the critical p-value of 0.05. Further,  $\exp(B)$  is the exponentiation of the B coefficient, which is an odds ratio.

#### 4.2.1. Direct Effects

First we tested the direct effects of gender inequality (H1a, 1b) on entrepreneurial intention and found that they are significant and positive for male (3.105) and female respondents (3.317). Effects were stronger for women than for men. We originally formulated two hypotheses: H1a proposes that gender inequality negatively affects entrepreneurial intention. This hypothesis was not confirmed. H1b proposes the opposite, and is confirmed. We also find significant direct effects of having an entrepreneurial role model in ones' entourage for men (0.515) and women (0.445). H3a that states that role models positively affect entrepreneurial intention is therefore confirmed. In H 4a we propose that entrepreneurial capabilities are positively correlated with entrepreneurial intention. This hypothesis is confirmed and the variable 'perceived capability' displays the highest coefficients for both genders. However, values are lower for women (1.495) compared to men (1.781). Finally, also H5a that states that perceived opportunity has positive effects on entrepreneurial intention is confirmed for both female (0.820) and male (1.093). The only two variables that would not show significant direct effect were risk taking (H2a) and business discontinuance experience (H6a) and the related hypothesis were therefore rejected. To summarize, direct effects of gender inequality on entrepreneurial intentions are significantly stronger for women than for men. On the other hand, all other significant variables, such as role model, perceived capability, and perceived opportunity had stronger direct effects on male intentions.

#### 4.2.2. Moderating Effects

We also tested the moderating effects of gender inequality in a country effects model. Our results show that gender inequality does not moderate the correlation between risk taking and entrepreneurial intention. Therefore, hypothesis 2b is not confirmed. We could not detect moderating effects between gender inequality and role models either; therefore, H3b that claimed that gender inequality would negatively affect the correlation of role models and intentions of women is rejected too. However, gender inequality moderated the relation between all other independent variables in sometimes counterintuitive ways. H4b proposes gender inequality moderates the relationship between perceived capability and entrepreneurial intention. Our results show significant and negative coefficients for women (−1.187) and men (−2.312); they also reveal that men are significantly more negatively affected, by nearly a factor 2 of the women's value. Hypothesis 4b is confirmed. When this is moderated by gender inequality, the correlation between perceived opportunity and entrepreneurial intention becomes negative and significant for men (−1.449), but the effects remain insignificant for women. In hypothesis 5b, we argued that gender inequality would negatively affect this relation negatively for women only. This hypothesis 5b was not confirmed. Finally, when moderated by gender inequality, the correlation between business discontinuity experience and entrepreneurial intention was positive and significant for women (3.123), as well as for men (2.100). In H6b we argued that there would be no moderating effects. Therefore, H 6b is not supported.

#### 4.2.3. Country Effects

In Table 6, we also report the country effects. Our results show significant variance regarding the impact of independent variables on entrepreneurial intention in each country. Our results reveal variations in the results between significances of the effect in different countries and the entire sample. Our direct effects show that gender inequality is positively correlated with male (3.105) and female (3.313) intentions to become entrepreneurial. Qatar and Turkey display the same positive correlation, albeit with different coefficients; Algeria has positive correlations for women and insignificant positive correlations for men; in Iran the result is reverse with insignificant positive effects for women and significant positive effects for men; in Pakistan, gender inequality affects women intentions negatively and male intentions positively, and in Saudi Arabia vice versa. In the UAE, both genders' intentions



are negatively affected by gender inequality. Thus, we can say that entrepreneurial intentions are also affected by country effects such as culture or traditions.

Finally, in order to assess robustness of the model, we undertook R-squared statistics. SPSS provides two “R-squared statistics”, that are interpreted similarly to that in multiple regression: Cox and Snell R-squared and Nagelkerke R-squared measures. The main difference between the “Cox and Snell” and the “Nagelkerke” measure is that the former tends to produce more conservative (that is lower) views, rather than Cox and Snell R-squared measure. Generally, the higher the R-squared statistic, the better the model fits our data. In the fourth model, Nagelkerke R Square is 0.186 for female and 0.129 for male, which shows an increase in the validity of the model compared to the previous binary logistic regression model.

**Table 6.** Multi binary logistic regression with country effects.

	Female			Male		
	B	Wald	Exp(B)	B	Wald	Exp(B)
<b>Control Variables</b>						
Age	−0.025 **	364.565	0.976	−0.025 **	238.351	0.975
Ent. social values	0.010	0.831	1.005	0.005	1.664	1.010
<b>Independent variables</b>						
Gender Inequality	3.317 **	35.113	27.578	3.105 **	31.554	22.300
Risk taking	0.172	0.730	1.188	0.066	0.153	1.068
Role model	0.445 *	4.749	1.560	0.515 *	1.675	1.674
Perceived capability	1.495 **	56.842	4.459	1.781 **	114.383	5.938
Perceived opportunity	0.820 **	17.644	2.270	1.093 **	48.981	2.984
Business discontinue experience	−0.487	1.016	0.614	−0.073	0.050	0.929
<b>Moderating effects</b>						
Gender Inequality * Risk taking	−0.328	0.531	0.721	0.085	0.046	1.088
Gender Inequality * role model	−0.597	1.693	0.551	−0.658	3.098	0.518
Gender Inequality * Perceived capability	−1.187 *	7.178	0.305	−2.312 **	34.563	0.099
Gender Inequality * Perceived opportunity	−0.739	2.843	0.478	−1.449**	15.184	0.235
Gender Inequality * Business Discontinue	3.123 *	7.686	22.725	2.100 *	7.126	8.168
Dummy variables-Countries (reference country is Egypt)						
D-Algeria	0.507 **	46.266	1.660	0.072	1.060	1.075
D-Qatar	1.183 **	188.538	3.264	0.947 **	134.751	2.578
D-Pakistan	−0.383 *	10.969	0.682	0.380 **	13.060	1.462
D-Iran	0.021	0.094	1.021	0.134 *	3.758	1.144
D-Turkey	0.380 **	25.667	1.463	0.265 **	16.889	1.303
D-Saudi Arabia	−19.881	0.000	0.000	−5.269 **	54.616	0.005
D-UAE	−3.264 **	40.164	0.038	−3.354 **	187.073	0.035
Constant	−2.842 **	110.587	0.058	−2.322 **	84.367	0.098
Cox & Snell R Square			0.123			0.091
Nagelkerke R Square			0.186			0.129
R Square changes			0.056			0.004

Note: \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ .

## 5. Discussion

Our paper analyses important antecedents to entrepreneurial intention, with an emphasis on the role of gender inequality as both a direct effect variable and a moderating variable. Based on our analysis, we believe that arguing from a purely developmental economic perspective when analyzing entrepreneurship ignores the challenges of a gendered society, and assumes that economic development is disconnected from women's development in an economy. Yet, the SDGs formulated 17 anti-poverty targets, of which one pivotal area of action is the empowerment of women and the eradication of the gender gap. This is a goal in itself, as well as a means to reduce poverty and increase economic development. Thus, there is a fundamental flaw in the logic of research that assumes that female participation in entrepreneurial activities is a result of increased economic development. On the contrary, female professional participation in the economy and the reduction of gender inequality is an important antecedent to overall economic development and societal evolution. The pertinence of this argument becomes even clearer in the light of our results that show how gender inequality affects entrepreneurial both the intentions of women and men. Our direct effects models show that factors such as the presence of business opportunities or perceived personal capabilities that enable individuals to start their own venture; or the presence of encouraging entrepreneurial role models and previous business failure experiences all have a positive influence and encourage individuals' decisions to engage in entrepreneurship. However, our moderating effects show that such initially positive factors switch into discouraging antecedents for entrepreneurship within a gendered environment. In fact, the presence of gender inequality within societies lowers the likelihood of men and women alike to engage in entrepreneurial activities, and subsequently suppresses entrepreneurial endeavors.

MENA societies are patriarchal [113], based on religious belief systems (for the most part predominantly Islamic, but also Christian and Jewish), which have a strong and defining impact on the role and status of men and women in society. Along with this patriarchal society, gender governance models that are based on masculinist attitudes about biological differences that determine the social role of women as homemaker and mother [66]. On the other hand, the patriarchic gender regimes ascribe to men the role as breadwinner since they are being viewed as decisive and rational [66]. Such cultural norms were shown many times by empiric research to have detrimental effects particularly on women on an individual level, organizational level, and within the polity [69,112]. However, our result clearly shows that such gendered norms are detrimental for men in entrepreneurship too, and reveal that gender inequality lowers the trust of individuals in their self-efficacy and seems to convince them of "not having what it takes" to become an entrepreneur. Surprisingly, the negative effects are nearly twice as high for men than for women, and therefore male confidence regarding their own entrepreneurial abilities seem to suffer even more from gender inequality. That is a counterintuitive finding because previous research on the role of self-efficacy in entrepreneurship emphasized that particularly women, worldwide, displayed low confidence levels in their own capabilities compared to men [114], and this self-belief remains a constraint even for most established female business owners with sometimes significant negative effects on firm growth [115]. Women's entrepreneurship in the MENA region is the among the lowest worldwide with a regional average of 8% of women engaging in entrepreneurial activities [116]. Yet, those that are entrepreneurial were shown to have higher self-confidence than even their male counterparts, and self-confidence was identified as one of the biggest motivators for women entrepreneurs, next to independence and achievement [117].

However, as our research shows, detrimental effects of such systems seem less pronounced for women in the region because they benefit from their developed and longstanding resistance through active social movements against repressive laws and practices related to Islamic theocratic regimes, and to patriarchic cultures and traditions [47].

The capacity to recognize interesting business opportunities is equally aligned with an individuals' confidence regarding entrepreneurial skill potential [86,87]. Again, our results show that men are negatively affected, whereas gender inequality does not interfere with the ability of women to perceive opportunities. We think that the gendered context presents many push factors that motivate women to

become entrepreneurs. Push factors are the result of the dissatisfaction of individuals with their current situation, which could be rooted in their socio-economic situation that presents them with unequal access to the labour market. Push factors could also be triggered by discriminatory labour market conditions or other employment issues such as lack of work-time flexibility, lack of career opportunities, gender stereotypes against employed women, and many more [55]. This dissatisfaction might make women more inclined to select self-employment once the opportunity presents itself. These conditions make women more prone to choose entrepreneurship as a professional 'survival strategy' because they had experienced discrimination in their previous workplace, in the labour market, and in the wider environment. Push factors also seem to explain the results of the correlation between 'previous experience' with 'business discontinuity' on the one hand and women's entrepreneurial intention on the other. This also explains that 'previous business discontinuity' has a significant positive effect on female entrepreneurial intention when moderated by gender inequality. In environments that are characterized by high gender inequality, women with previous venture experience tend to be more motivated to start another business. On the other hand, previous experiences with business discontinuity are also positively correlated with male entrepreneurial intentions when moderated by gender inequality. This may be due to a selection bias because men with entrepreneurial experiences in gendered environments are more likely to start another business. However, small business self-employment is low ranking in many countries in the region, especially in the Gulf countries. The most prized jobs are those with social status, which typically include a wide range of public administration roles offering higher salaries and many benefits. Male entrepreneurs often set up a business when they cannot secure a public appointment [118].

The presence of an entrepreneurial role model within the woman's network proved highly valuable to increase entrepreneurial intent. However, when moderated by gender inequality, that relationship became insignificant. This might be related to the composition of women's networks in the region that, research shows, primarily consist of private connections amongst family and very close friends [46,119,120]. Previous research points to cultural restrictions on women's mobility and societal in-acceptance regarding their interaction with males outside their families; this forces women to rely on private social contacts [46]. It might be that role models of this close circle of friends and family may not contribute sufficient diversity in terms of new knowledge that could increase female skills and capabilities to run a venture. Moreover, role models in such contexts seem to stick to the confines of gendered rules rather than to function as an important social boundary spanner for women, which in theory should introduce them to vital connections in the wider social space, opening doors for them to be potential collaborators, customers, and suppliers. Equally for men, role models when moderated by gender inequality have no significant impact. Again, we explain this finding with the fact that men in most countries are still encouraged to seek for secure income positions preferably in public administration or in secure employee contracts in order to reliably cater to their family needs as breadwinner. This has led to an increase in men's involvement in networking in the MENA via professional associations, or even networks supported by the government. Men's professional networks have traditionally been aligned with specific industries and public sector roles, although this is now changing with many male-led ventures organizing professional networks. Risk taking is the only variable that was not significant, neither in direct nor in moderated effects models. We think that this is related to the general low tolerance for uncertainty and risk in MENA societies [113].

## 6. Conclusions

In response to the need for further investigation of the correlation between economic and social development and entrepreneurship, the present paper focuses on the impact of gender inequality on entrepreneurial intentions of men and women in the MENA region.

The MENA region represents a highly gendered context that greatly affects men's and women's entrepreneurial intention in many different ways. To date, most studies have focused on particular countries in the region. However, it is important to also consider other dimensions of inequality

in the region. There are gendered hierarchies, racial hierarchies, and religious hierarchies in social institutions. Entrepreneurship ventures have increased in Oman, Jordan, and the UAE, many of which are managed by Indian, Bangladeshi, and Pakistani migrants, primarily in the service and tourism sectors. These populations do not qualify for any government start-up finance schemes. There is a general concern that Gulf citizens and the business culture overall are averse to risk, have limited desire to venture, and would prefer a government job with extensive benefits. There are also inequalities spurred by sectarian and religious affiliation which impact men and women alike. Indeed, further research in these directions and that address complexities of social hierarchies is important to increase our understanding of the situation of female and male entrepreneurs in the region and equally for the advancement of gender equality. Moreover, while assessing broad cultural schemas and their gendered effects, it is also important to consider the potential benefits for women. Research on women's education and leadership development has reported Arab women's participation in feminist transnational organizations. Arab women are active in women's networking and professional organizations, for example, the Arab Women's League, the Bahrain Businesswoman Society, and the General Women's Union in the UAE. These institutions have, in many cases, governmental support and are also supported at the regional level through agencies such as the GCC. Women's organizations have been pivotal in enhancing entrepreneurship skills through formal training and educational development. They have also garnered support and funding from international organizations. Women's organizations have also lobbied Gulf governments and attained funding for development projects, and in many cases have also been allocated real estate in prime locations, as in the cities of Manama, Dubai, Abu Dhabi, Jeddah, and Amman. It is fair to argue that women's organizations are leading social change in the MENA region, and are carving out space for women's inclusion in the economy and polity.

As our own conclusion shows that there is a great emphasis on female empowerment in regards to gender inequality, we mentioned in the beginning of our discussion section that we consider female participation in the economy and female entrepreneurial empowerment to be an important antecedent to social and economic development. However, our paper highlights how gender inequality seems an important obstacle for men as well. It seems that entrepreneurial careers in the MENA region deviate from pre-existing masculine norms and stereotypes of traditional breadwinners in the family. In consequence, men considering an entrepreneurial path may experience significant social or economic backlash. It is certainly a limitation of this research that our research design lacks the tools to further analyse and understand the correlation of male entrepreneurial careers and gender inequalities. Indeed, the concept of entrepreneurship has been criticized for as representing a masculine stereotype that leads to an understanding of entrepreneurial activities as predominantly male behavior [82]. That however seems to be a pre-conception of prevailing US- and European centric research. The apparent difficulties of men in the Mena region definitely call for further research in this direction.

The picture that emerges from this research is a very complex entrepreneurial climate. As a consequence, we would argue that, in the MENA region, further scholarly research needs to conceptualize the development of entrepreneurship as a multi-level process, incorporating actors at the global, regional, state, organizational, and individual levels. Taken together with the mix of ethnicities' and religious sects, the ME terrain is complex to navigate. Women's organizations and trans-nationalist lobbying are enabling women's engagement in a wide range of democratic and economic ventures. There are thus many social and work-organizing structures that are enabling women's inclusion. This organizing, however, has privileged class and religious memberships for both men and women. This highlights the need to stress that gender modes of analysis are premised on the socially constructed nature of gender and the gendered and gendering processes of entrepreneurship as a concept itself. In line with previous researchers, we also stress the need to develop theoretical frames that are socially inclusive and founded on feminist epistemologies. Our paper captures some of the dynamics of gender across scales and reflects the field's concern to bring in gender as a mode of inquiry. However, there is still a need to further consider the gender perceptions of financial institutions and institutional systems across the MENA, primarily due to the fact that entrepreneurship in the

region creates jobs, raises people out of poverty, and is a cornerstone of many economic liberalization policies. We hope that our analysis will act as a stimulus to other entrepreneurship scholars to delve into the myriad social and organizational cultural practices that affect entrepreneurship. Our analysis is limited to a high aggregation level. However, more needs to be written about the everyday experiences of doing entrepreneurship and the context that is involved. We suggest that additional intersectionality theorizing would provide a possible way to incorporate multi-level and multi-sector voices for entrepreneurship growth strategies and development.

Before extending these results to other emerging market contexts, we suggest further cross-country research in the region in order to address issues related to the socio-cultural complexities that lead to the largest gender gap worldwide. This will unveil more nuanced insights of the challenges that face female entrepreneurs. Further, in light of ongoing political upheaval, social unrest, and economic change, we will have a more detailed assessment of economic and social transitions and how this may impact entrepreneurial behavior.

Inequality between men and women in the region provides myriad ways in which identity signifiers come into play. Alongside family and tribe, one can find religious affiliation, as well as educational background, which all provide complex regimes for men and women to navigate. Such gender inequalities, as exposed in the paper, demand the intervention of policy makers in order to address women's needs in particular. Our results prove that it is wrong to assume that economic progress and development are the most important antecedents to female empowerment and higher rates of entrepreneurship, since gender inequalities still dominate the macro context. We therefore recognize that gender equality is an important precursor to economic and entrepreneurial development. The responsibility for the development of thriving entrepreneurship in the region must base on an iterative approach that considers the multi-level relationship between states, legal institutions, international institutions, women associations and others in order to provide a more favorable for business and investment in the region, and the empowerment specifically of women to overcome discrimination.

Our results support the argument that we need to pay more attention to gender inequality within economies and the gendered, racial, and religious contexts that create immensely higher challenges for both men and women entrepreneurs. Our study contributes to previous research by addressing a global region with large gender inequalities, and allows for more representative and a less biased picture of gender in entrepreneurship research worldwide.

**Author Contributions:** For research articles with several authors, a short paragraph specifying their individual contributions must be provided. The following statements should be used “conceptualization, B.L.B. and B.D.M.; methodology, B.L.B. M.R.Z. software, M.R.Z. validation, M.R.Z.; formal analysis, B.L.B. M.R.Z.; investigation, n.a. resources, n.a.; data curation, M.R.Z.; writing—original draft preparation, B.L.B. B.D.M. writing—review and editing, B.L.B., B.D.M.; visualization, n.a.; supervision, n.a. project administration, B.L.B.; funding acquisition, n.a.”, please turn to the CRediT taxonomy for the term explanation. Authorship must be limited to those who have contributed substantially to the work reported.

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