

## Article

# Does National Gender Equality Matter? Gender Difference in the Relationship between Entrepreneurial Human Capital and Entrepreneurial Intention

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**Abstract:** Gender equality contributes to economic growth and social progress by promoting women's social and economic participation. The national gender equality level can affect women's education and opportunities for economic participation. In this work, we examine whether entrepreneurial human capital (entrepreneurial education and experience) affects entrepreneurial intention and whether these relationships depend on gender and a country's gender equality level. We used Global Entrepreneurship Trend Report (GETR) data provided by the Korean Entrepreneurship Foundation. The global survey was conducted by the Korean National Statistical Office in 2016. The data were collected from 20 countries, including Korea, and contain at least 2000 individual responses from each country. We used HLM analysis with the HLM 6.0 program to examine the hypotheses. Our results show that entrepreneurship education increases entrepreneurial intention, and that the relationship is stronger among women than men. We also found that for women, the positive relationship between entrepreneurial education and entrepreneurial intention is stronger in countries with lower gender equality. As for prior entrepreneurial experience, neither gender nor national gender equality level moderated the relationship between experience and entrepreneurial intention. This study contributes to the extension of entrepreneurship theory, especially in the area of women entrepreneurship. We confirm that entrepreneurial human capital contributes to entrepreneurial intention, and that gender and national gender equality level comprise an important social context that influences the effects of education and experience on the entrepreneurial intention of women.

**Keywords:** gender equality; gender gap; women entrepreneurship; entrepreneurial human capital; entrepreneurship education; entrepreneurial intention



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## 1. Introduction

Women entrepreneurship has drawn attention from many researchers around the world, coupled with economic growth, employment diversity, and gender equality issues [1]. However, not only is the number of woman entrepreneurs still low compared to man entrepreneurs in most countries [2], but women's entrepreneurial intention is also lower than men's [3,4].

Entrepreneurial human capital is crucial in entrepreneurial processes [5,6]. Human capital, such as experience and education, can affect entrepreneurial intention. Martin et al. [7] showed that entrepreneurship education positively affects entrepreneurship intention. Entrepreneurial experience may help entrepreneurs identify business opportunities [8] because it leads to entrepreneurial knowledge and skills that can be applied to entrepreneurial activities [9]. Thus, experience-based knowledge can also affect entrepreneurial intention.

However, empirical studies tend to find that the effect of human capital on entrepreneurial intention is often weak and volatile across countries, suggesting the possibility of other mechanisms or social contexts moderating these relationships. For example,

Schlaegel and Koenig's [10] meta-analysis found that contextual boundary conditions are important in the development of entrepreneurial intention. We propose gender and national gender equality level as a moderator. Empirical studies on cross-nation differences show substantial gender differences in entrepreneurial activities [11]. Dilli and Westerhuis [12] suggest that closing the gender gap in education opportunities at the national level is helpful for women's entrepreneurial activities because it encourages gender equality.

Thus, we investigate the effects of entrepreneurial human capital on the entrepreneurial intention and the effects of gender and national gender equality on these relationships. Two types of human capital are considered: entrepreneurial education during postsecondary education and prior entrepreneurial experience. We examine how gender and national gender equality level affect the relationship between entrepreneurial human capital and entrepreneurial intention. We test hypotheses using data from the Global Entrepreneurship Trend Report (GETR). Hierarchical linear modeling (HLM) is used for the analysis.

## 2. Theoretical Background and Hypotheses

### 2.1. Human Capital and Entrepreneurial Intention

Entrepreneurial intention refers to the "self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future" [13]. Entrepreneurial intention has been studied extensively in the field of entrepreneurship as it is believed to be the most effective predictor of actual entrepreneurship activities [14,15]. Kautonen, Van Gelderen, and Fink [16] emphasized that entrepreneurial intention effectively anticipates entrepreneurial activities. Therefore, identifying factors that predict entrepreneurial intention can help policymakers and practitioners establish policies and practices that promote entrepreneurial activities.

Human capital theory argues that knowledge leads to more productive and efficient activities by providing cognitive enhancement to individuals [17,18]. Researchers interested in human capital theory applied this theory to entrepreneurship concepts [8,19]. Schenkel, Hechavarria, and Matthews [20] mention that human capital theory may assume that individuals' cognitive abilities enhanced by knowledge accumulation can perceive and act more effectively and efficiently when it comes to new entrepreneurial activity [6].

Human capital is regarded as one of the significant factors of the entrepreneurial process [5,6]. Education, experience, skills, and knowledge are regarded as human capital attributes [17,18]. Knowledge is regarded as a source of cognitive abilities to discover and exploit entrepreneurial opportunities [6,21]. For example, Ucbasaran and Westhead [22] reported that experienced entrepreneurs are better at identifying business opportunities than novice entrepreneurs. Education on entrepreneurship is positively related with starting a new entrepreneurial activity [23].

Entrepreneurial education is one of the most critical human capitals that could enhance entrepreneurial intention [23,24]. Education is highly effective for the acquisition of skills and knowledge [25]. Participating in entrepreneurial education may help a person acquire an entrepreneurial spirit. Namely, the experience of entrepreneurial education may increase entrepreneurial intention. Entrepreneurial education may also influence the formation of a positive attitude toward entrepreneurial activities, which could result in entrepreneurial self-efficacy [26]. Zhao et al. [26] examined the effectiveness of entrepreneurial education during an MBA program by measuring entrepreneurial education effectiveness, entrepreneurial self-efficacy, and entrepreneurial intention before and after an entrepreneurial education course. They found that entrepreneurial education did increase entrepreneurial intention and that cognitive factors such as entrepreneurial self-efficacy mediated the relationship between formal entrepreneurial education and entrepreneurial intention. Since entrepreneurial self-efficacy is closely related to perceived behavioral control, entrepreneurial education may be closely associated with entrepreneurial intention. Through a meta-analysis of prior studies, Bae et al. [27] concluded that entrepreneurial education has a positive effect on entrepreneurial intention.

Entrepreneurial experience also contributes to human capital [28]. For example, through such experiences, entrepreneurs can build the knowledge, skills, and networks they need to conduct their business well [29]. Moreover, entrepreneurs with business experience may be better at identifying business opportunities than inexperienced entrepreneurs [29] because they have entrepreneurial skills and knowledge that can be applied to entrepreneurial activities [9]. Prior entrepreneurial experience may also heighten self-efficacy, as potential entrepreneurs accumulate various resources such as information, knowledge, and social networks, which they may use in their entrepreneurial journeys. In a study that examined the effectiveness of entrepreneurial education, Zhao et al. [26] found that students who had prior experience in entrepreneurial activities had higher entrepreneurial intention. They reasoned that through prior entrepreneurial activities, they might be emotionally aroused and gain a sense of achievement as they experience success in persuading others and overcoming various difficulties, which might result in increased self-efficacy. Therefore, human capital acquired through entrepreneurial experience can have an impact on entrepreneurial intention. These observations suggest the following hypotheses.

**Hypothesis 1a.** *Entrepreneurial education will increase entrepreneurial intention.*

**Hypothesis 1b.** *Prior entrepreneurial experience will increase entrepreneurial intention.*

## 2.2. Moderating Effect of Gender as an Individual Factor

Gender may have a differential effect on entrepreneurial intention. Social feminist theorists insist that men and women are different because of their distinct socialization processes [30,31]. According to social role theory, societal values may affect gender stereotypes in terms of the ideal types of jobs for men and women. Moreover, the theory insists that women have a higher tendency to conform to societal roles [32]. In most industrialized countries, entrepreneurship is considered a man's pursuit [33]. As a result, women may shy away from entering the world of entrepreneurship [32,34,35]. The existence of a gender difference in entrepreneurial activities suggests that efforts to promote entrepreneurship for women might be an effective way to boost entrepreneurship.

Since there is already ample evidence, we do not discuss the main effect of gender on entrepreneurial activities but rather examine the moderating role of gender. In other words, we focus on how gender moderates the relationship between human capital and entrepreneurial intention. First, the effect of entrepreneurial education on entrepreneurial intention may be stronger for women than for men. For example, Nowiński et al. [36] found that although entrepreneurial intention is lower for women than for men, the effects of entrepreneurial education on entrepreneurial self-efficacy are higher for women than for men. Wilson et al. [37] found that entrepreneurial education positively affects entrepreneurial self-efficacy and that this effect is stronger for women than for men. In addition, Schøtt, Kew, and Cheraghi [38] confirmed that the likelihood of becoming an entrepreneur after business education increases by 1.5 times for men and 1.8 times for women.

The effect of early entrepreneurial experience on entrepreneurial intention may also be different across genders, although the relationship may follow a different pattern. When women engage in entrepreneurial activities, women may go through negative experiences, which may have a negative impact on entrepreneurial intention for the future. For example, Coleman [39] showed that women-owned firms had a difficult time securing bank loans. Moreover, women were more likely to attribute their failure to gender bias. Thus, women's entrepreneurial experience may strengthen preventive orientation toward entrepreneurial activities instead of providing them with an opportunity to overcome a gender stereotype. Based on these studies, we propose the following hypotheses.

**Hypothesis 2a.** *There will be a gender gap in the impact of entrepreneurial education on entrepreneurial intention, with the positive impact stronger for women than for men.*

**Hypothesis 2b.** *There will be a gender gap in the impact of entrepreneurial experience on entrepreneurial intention, with the positive impact stronger for men than for women.*

### 2.3. National Gender Equality as a Contextual Factor

Beyond individual characteristics such as gender, it is important to investigate contextual factors of a society, such as gender equality. Contextual factors influence individual entrepreneurial intention and behavior [12,40,41]. In a study of female cooperative owners in Spain, Bastida et al. [41] showed that women entrepreneurs find the cooperative business model as better aligned to their values. Cooperatives were viewed by women respondents as providing “real equality” and encouraged them to engage in entrepreneurial activities. Bastian et al. [40] also showed that gender equality level affected entrepreneurial intention of both men and women among eight countries in the Middle East and North Africa (MENA) region. Since social, cultural, and institutional factors may have an impact on women’s entrepreneurial activity [2,12,42–44], it is necessary to understand contextual factors such as gender equality in order to predict entrepreneurial intention.

Countries with high gender equality provide opportunities for both men and women to participate in education, society, and economic activities, while countries with low gender equality provide unequal opportunities for such participation [12,27]. Therefore, gendered differences in the relationship between entrepreneurial education and entrepreneurial intention may vary depending on the level of national gender equality. For example, the effects of education on entrepreneurial intention may be larger for women in countries with low gender equality, because such education may provide significant improvements in the access to opportunities for entrepreneurship activities. The heightened awareness and self-efficacy can have a significant effect on entrepreneurial intention [2,12]. Thus, the positive effects of entrepreneurial socialization experiences on entrepreneurial intention may be higher for women than for men, and these effects are expected to be greater in countries with lower gender equality.

**Hypothesis 3a.** *The gender gap in the positive impact of entrepreneurial education on entrepreneurial intention will be stronger in countries with low gender equality.*

**Hypothesis 3b.** *The gender gap in the positive impact of prior entrepreneurial experience on entrepreneurial intention will be stronger in countries with low gender equality.*

Our hypotheses are presented in Figure 1 as a research model.

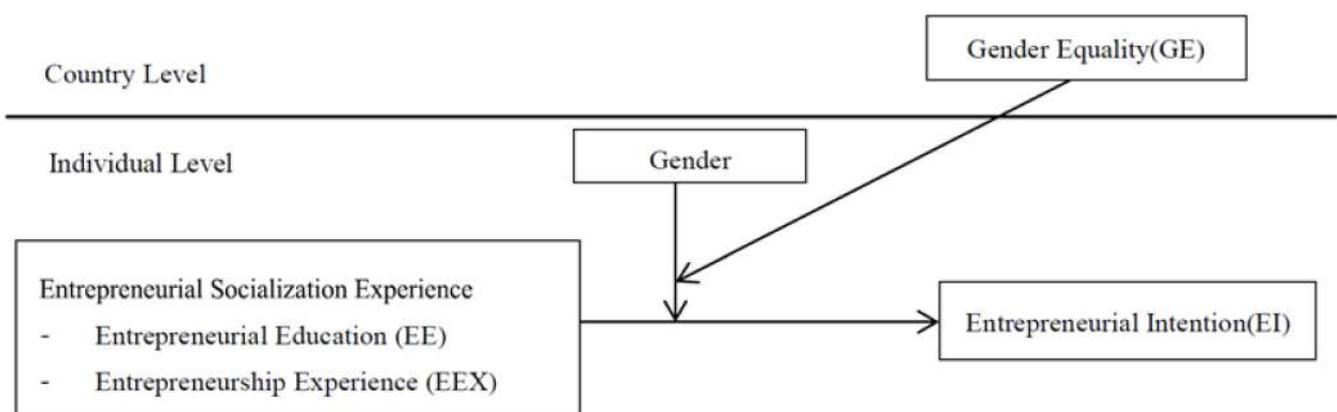


Figure 1. Research model.

The research model presented in Figure 1 recognizes that entrepreneurial socialization experience including entrepreneurial education (EE) and entrepreneurship experience (EEX) may affect entrepreneurial intention (EI), our outcome variable. The research model allows two potential moderating factors, gender at the individual level (level 1) and gender equality (GE) at the national level (level 2). A proper analysis of the overall relationships among the variables calls for an HLM analysis.

### 3. Method

#### 3.1. Data and Sample

In this study, we used Global Entrepreneurship Trend Report (GETR) data provided by the Korean Entrepreneurship Foundation. The global survey was conducted by the National Statistical Office in 2016. The data were collected from 20 countries, including Korea, and contains at least 2000 individual responses from each country. A total of 40,388 respondents responded to the questionnaire. The GETR data were collected with funding from the Korea Ministry of SMEs and Startups. Observations with missing data and problematic data were deleted from the final data analysis so that a total of 25,844 observations were eventually used. As shown in Table 1, the sample consisted of 43% (11,207) women and 57% (14,637) men.

**Table 1.** Descriptive statistics analysis of key variables by nation.

Nation	Frequency and Percentage				EI			EE			EEX			Gender Equality
	N	Women (%)	Men (%)		Total	Women	Men	Total	Women	Men	Total	Women	Men	
Korea	1299	532 (41)	767 (59)		3.86	3.78	3.91	0.55	0.43	0.64	0.27	0.20	0.32	0.65
Japan	1089	460 (42)	629 (58)		2.82	2.63	2.95	0.11	0.07	0.15	0.11	0.07	0.14	0.66
China	1486	670 (45)	816 (55)		4.52	4.44	4.58	1.24	1.12	1.34	0.35	0.30	0.39	0.68
India	861	289 (34)	572 (66)		5.03	4.97	5.06	0.82	1.05	0.70	0.43	0.39	0.45	0.68
Indonesia	1516	609 (40)	907 (60)		5.87	5.75	5.95	1.11	1.05	1.16	0.39	0.38	0.39	0.68
Singapore	1487	684 (46)	803 (54)		4.48	4.36	4.58	0.82	0.76	0.87	0.26	0.25	0.28	0.71
UK	1306	574 (44)	732 (56)		3.64	3.45	3.80	0.50	0.43	0.56	0.23	0.20	0.26	0.75
Germany	1322	645 (49)	677 (51)		2.78	2.50	3.04	0.82	0.66	0.97	0.29	0.25	0.33	0.77
Russia	1398	676 (48)	722 (52)		4.17	4.07	4.27	0.99	1.00	0.98	0.25	0.20	0.30	0.69
Denmark	1179	563 (48)	616 (52)		3.25	3.13	3.36	0.52	0.42	0.62	0.14	0.10	0.18	0.75
Finland	1179	554 (47)	625 (53)		3.13	2.91	3.32	0.88	0.90	0.85	0.26	0.26	0.26	0.85
Turkey	1245	534 (43)	711 (57)		4.97	4.99	4.96	0.95	0.98	0.93	0.29	0.24	0.34	0.62
UAE	1448	403 (28)	1045 (72)		5.27	5.30	5.26	1.33	1.27	1.35	0.36	0.34	0.37	0.64
Israel	1398	692 (49)	706 (51)		3.83	3.72	3.94	0.73	0.73	0.72	0.17	0.16	0.18	0.72
South Africa	1473	684 (46)	789 (54)		5.04	4.77	5.26	0.87	0.82	0.92	0.42	0.39	0.43	0.76
Egypt	998	369 (37)	629 (63)		5.07	4.85	5.20	1.09	1.01	1.14	0.56	0.47	0.61	0.61
USA	1186	458 (39)	728 (61)		4.19	3.84	4.41	0.80	0.52	0.98	0.31	0.26	0.35	0.72
Brazil	1309	636 (49)	673 (51)		5.14	5.06	5.22	1.20	1.16	1.25	0.26	0.26	0.25	0.69
Chile	1432	633 (44)	799 (56)		5.37	5.33	5.39	1.16	1.04	1.25	0.51	0.47	0.53	0.70
Australia	1233	542 (44)	691 (56)		3.77	3.44	4.03	0.57	0.37	0.73	0.26	0.21	0.31	0.72
Total	25,844	11,207 (43)	14,637 (57)		4.34	4.15	4.49	0.87	0.79	0.93	0.31	0.27	0.34	0.70

Note: EI = entrepreneurial intention, EE = entrepreneurial education, EEX = entrepreneurial experience.

#### 3.2. Measurements

##### 3.2.1. Entrepreneurial Socialization Experience

Entrepreneurial socialization experience consists of entrepreneurial experience and educational experience. Entrepreneurial experience was measured on a binary scale (1 = "yes", 2 = "no") using the question "Do you have startup (including self-employment) experience?" The binary variables were converted into dummy variables in the data analysis process.

Entrepreneurial education experience was measured for a total of three educational experiences: (1) "Have you, in elementary/middle/high school, in any course type or name, received any entrepreneurship-related training including entrepreneurship training, creativity training, or training in market economy principles?", (2) "Have you ever received entrepreneurial education in a university course?", and (3) "Have you ever received entrepreneurial education in vocational/lifelong education courses?" Responses to the three component questions were coded as 1 for "yes" and 0 for "no", and the overall entrepreneurial education variable was calculated as the sum of responses in three educational experiences (maximum total: 3 points).

### 3.2.2. National Gender Equality (GE)

To capture gender equality, we used the secondary data on the Gender Gap Indices (GGIs) compiled by the World Economic Forum (WEF). The WEF releases GGIs in four main areas: “economic participation and opportunities”, “attainment of education”, “health and survival”, and “political empowerment”. Each GGI is a ratio, ranging between 0 and 1, with values closer to 1 signifying a greater gender gap in the corresponding area. In this study, we used the average of the four GGIs to measure national gender equality.

### 3.2.3. Entrepreneurial Intention

We measured entrepreneurial intention using a single question on a seven-point Likert scale (1 = “Definitely no” and 7 = “Definitely yes”): “Do you intend or plan to launch a business in the future?”

### 3.2.4. Control Variables

We controlled for gender (1 = men), age, marital status (1 = married), presence of children (1 = yes), education, occupational status (dummies for self-employed, public, professional position, and other), and income. The reference category among occupational status variables is office worker.

## 3.3. Analytic Strategy and Data Structure

The dataset of this study contained multilevel data with individuals nested within nations. Given the suggested relationships between level 1 (individual-level) data and level 2 (national-level) data, we used HLM analysis with the HLM 6.0 program to examine the hypotheses. HLM has been broadly used to analyze multilevel models [45]. Prior to analysis, we grand-mean centered the independent variables of level 2, group-mean centered the independent variables of level 1, and did not center the dummy variables [46].

To test the hypotheses, we posited age, marital status, parental status, occupation, and income as control variables at level 1 and converted categorical variables into dummy variables. In addition, entrepreneurial experience, entrepreneurial education, the interaction term of entrepreneurial experience and gender, and the interaction term of entrepreneurial education and gender were input as independent variables at level 1. Finally, the national gender equality level of each nation was input at level 2.

## 4. Results

### 4.1. Descriptive Statistics and Correlation Analysis

The descriptive statistics for males and females in each country for the main variables are shown in Table 1. In addition, the gender equality index across nations is shown in Figure 2. The nations with high gender equality are, in order, Finland, Germany, South Africa, Denmark, and the UK. Nations with low gender equality include Egypt, Turkey, the UAE, Korea, and Japan.

We conducted a correlation analysis of the major variables by country, and the results are shown in Table 2. One may examine this table to check the validity of the study design and the reliability of the constructs. Except for the high correlation between marriage and having children, which was 0.849, correlation coefficients among variables in the study were all less than 0.40, not threatening the validity of our study design. In addition, the correlation between the main variables showed that there was a positive (+) correlation ( $r = 0.099, p < 0.001$ ) between gender and entrepreneurial intention. Additionally, entrepreneurial intention was significantly correlated with entrepreneurial experience ( $r = 0.213, p < 0.001$ ) and entrepreneurial education ( $r = 0.286, p < 0.001$ ). As for the reliability of our measurements, three main variables in our study (EI, EE, and EEX) were measured by one item each, and reliability cannot be assessed. We will point out the weakness in the discussion of the study’s limitations at the end of the paper.

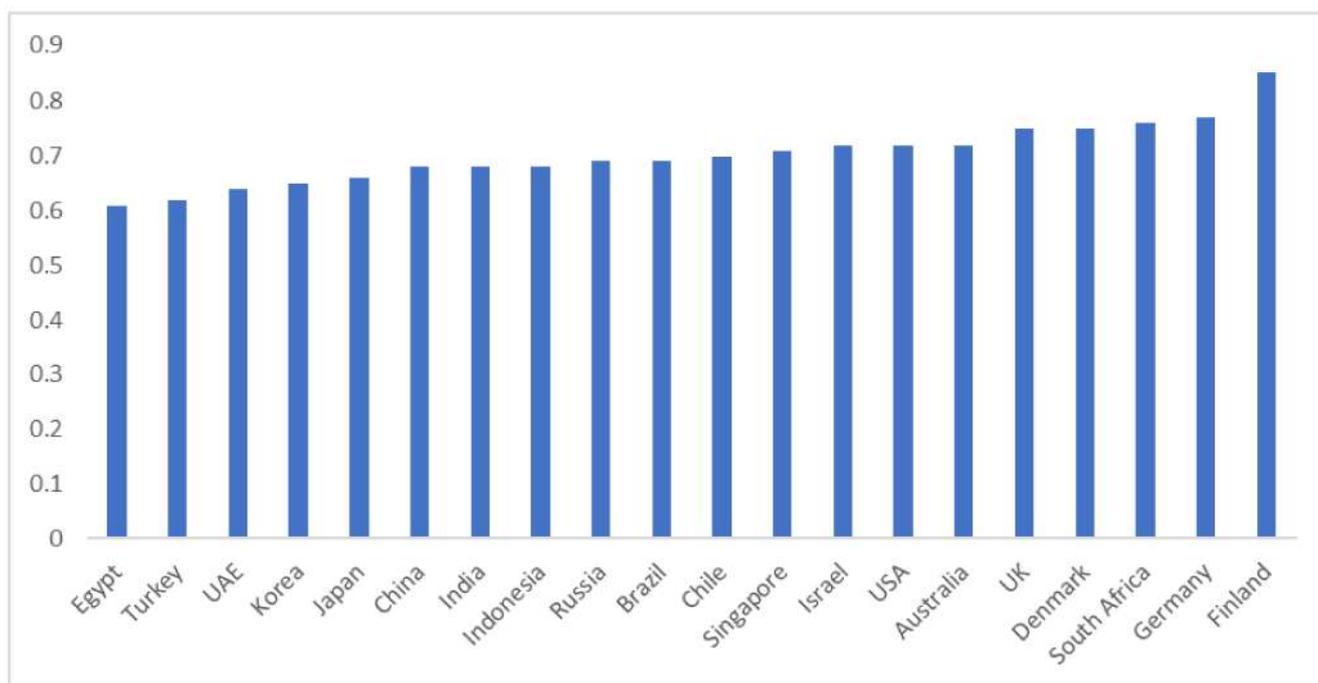


Figure 2. Gender equality index across nations.

Table 2. Correlation analysis between key variables.

Variables	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Gender (1 = men)	0.57	0.5	1											
(2) Age	3.43	1.14	0.037**	1										
(3) Marriage (1 = yes)	0.62	0.49	0.087**	0.242**	1									
(4) Children (1 = yes)	0.54	0.5	0.094**	0.252**	0.849**	1								
(5) Education	4.31	1.03	0.014*	0.016**	0.043**	0.021**	1							
(6) Self-employment (1)	0.26	0.44	-0.005	0.004	-0.027**	-0.016*	-0.137**	1						
(7) Public sector (1)	0.17	0.37	-0.045**	0.047**	0.023**	0.031**	0.076**	-0.267**	1					
(8) Professional (1)	0.09	0.28	-0.025**	-0.029**	0.002	-0.004	0.089**	-0.184**	-0.139**	1				
(9) Other (1)	0.01	0.04	-0.002	0.011	-0.019**	-0.014*	0.001	-0.024**	-0.018**	-0.012*	1			
(10) Income	3.89	1.17	0.099**	-0.009	0.178**	0.179**	0.132**	-0.055**	-0.023**	0.062**	-0.015*	1		
(11) EEX (1 = yes)	0.31	0.46	0.077**	0.001	0.084**	0.092**	0.001	0.239**	-0.099**	-0.016*	-0.008	0.146**	1	
(12) EE	0.87	1.07	0.064**	-0.191**	0.085**	0.101**	0.030**	0.061**	-0.049**	0.030**	-0.003	0.235**	0.347**	1
(13) EI	4.34	1.7	0.099**	-0.249**	0.072**	0.086**	0.001	0.088**	-0.073**	0.029**	-0.032**	0.168**	0.213**	0.283**

Note: (1) N = 25,844, \*\*  $p < 0.01$ , \*  $p < 0.05$ ; (2) occupational status variables reference category = office worker; (3) EEX = entrepreneurial experience, EE = entrepreneurial education, EI = entrepreneurial intention.

#### 4.2. Results of Hypothesis Tests

##### 4.2.1. Result of Null Model Test on Entrepreneurial Intention

We checked the null model to confirm the importance of systematic variance between groups prior to hypothesis testing [45]. As a result of analyzing the intra-class correlation coefficient (ICC) of the null model on entrepreneurial intention, the proportion of variance was 20% ( $\gamma^{00} / (\gamma^{00} + \sigma^2) = 0.57 / (0.57 + 2.28) = 0.2$ ). Thus, the use of HLM was supported.

##### 4.2.2. Effects of Entrepreneurial Human Capital on Entrepreneurial Intention

Hypotheses 1a and 1b predicted the effects of entrepreneurial education and entrepreneurial experience on entrepreneurial intention, respectively. The results showed that entrepreneurial education positively affected entrepreneurial intention ( $\beta = 0.315$ ,  $p < 0.001$ ) (see Table 3). In addition, entrepreneurial experience had a positive effect on entrepreneurial intention ( $\beta = 0.429$ ,  $p < 0.001$ ). Therefore, Hypotheses 1a and 1b were confirmed.

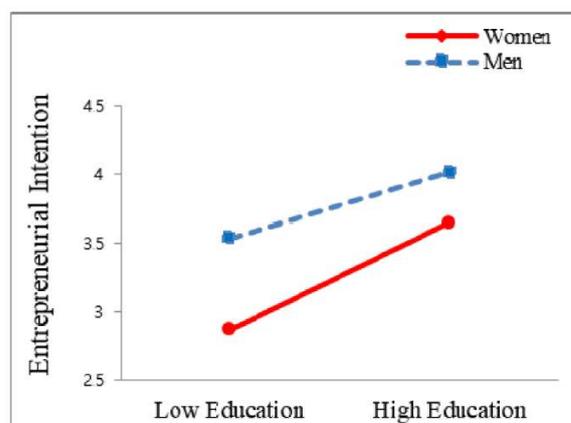
**Table 3.** HLM analysis results on entrepreneurial intention.

Entrepreneurial Intention (EI)			
Variables		$\beta$	s.e.
	Level 1		
Intercept	3.516	***	0.198
Gender (1 = men)	0.258	***	0.032
Age	−0.271	***	0.011
Marital status (1 = marriage)	−0.107	*	0.048
Children (1 = yes)	0.185	***	0.048
Education	0.058	***	0.014
Self-employment (1)	0.104	*	0.032
Occupation_Public (1)	−0.239	***	0.036
Occupation_Expert (1)	−0.055		0.049
Occupation_Other (1)	−0.152		0.221
Income	0.102	***	0.011
Entrepreneurial experience (EEX)	0.429	***	0.05
Entrepreneurial Education (EE)	0.315	***	0.022
Gender (1 = men) * EEX	0.016		0.062
Gender (1 = men) * EE	−0.074	*	0.028
	Level 2		
GE	−5.194		3.717
	Level 1 * Level 2 (cross-level)		
Gender (1 = men) * Gender Equality (GE)	1.264	*	0.617
Entrepreneurial experience * GE	2.234	*	0.913
EE * GE	0.707		0.416
EEX * Gender * GE	−2.238		1.180
EE * Gender * GE	1.138	*	0.539

\*  $p < 0.05$ , \*\*\*  $p < 0.001$ .

#### 4.2.3. Moderating Effect of Gender

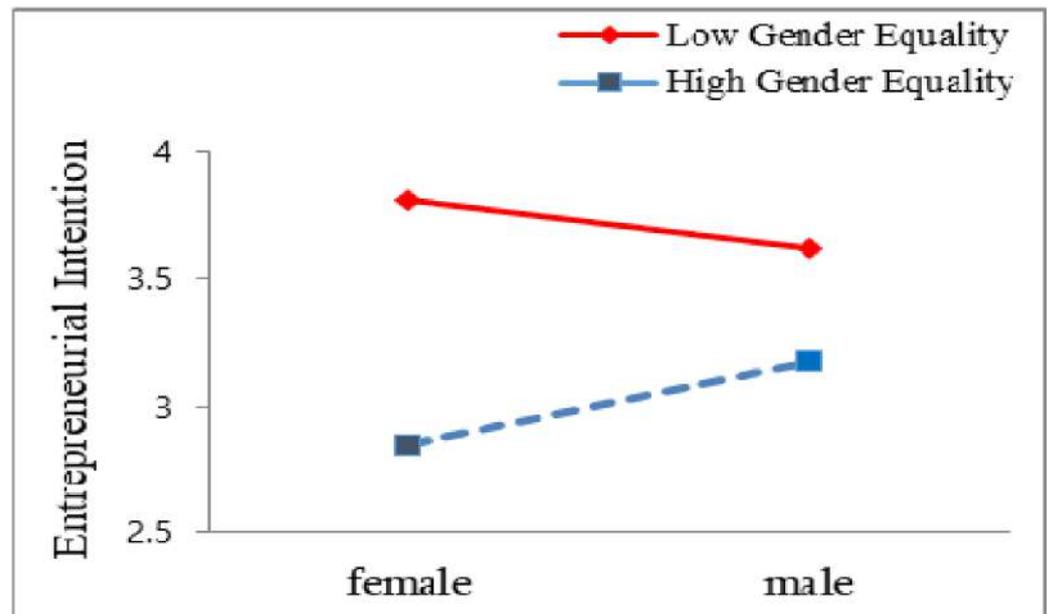
Hypotheses 2a and 2b, regarding the moderating impact of gender on the relationship between entrepreneurial education and entrepreneurial intention and between entrepreneurial experience and entrepreneurial intention, respectively, were examined. As shown in Table 3, Hypothesis 2b was not supported ( $\beta = 0.016$ , n.s.). Meanwhile, Hypothesis 2a was confirmed ( $\beta = -0.074$ ,  $p < 0.05$ ). In order to confirm the moderating effect of gender in more detail, the illustrated relationship results are shown in Figure 3. The results show that the positive effects of entrepreneurial education on entrepreneurial intention were stronger for women than men.



**Figure 3.** Moderating effect of gender on relationship between EE and EI.

Although we did not hypothesize about the moderating effects of gender equality on the relationship between gender and entrepreneurial intention in this study, we illustrated

the relationship between gender and entrepreneurial intention according to gender equality levels. Figure 4 shows that the relationship between gender and entrepreneurial intention varies with gender equality. As shown in the figure, women in countries with low gender equality have higher entrepreneurial intention than women in countries with high gender equality. Thébaud [44] found that more women in countries lacking institutional supports for work-life balance are compelled to pursue entrepreneurial career paths, deprived of suitable alternatives elsewhere in the economy, and that they may be more highly concentrated in sectors of business with little or no growth potential. Our own findings may be accounted for by a similar logic as in Thébaud [44].



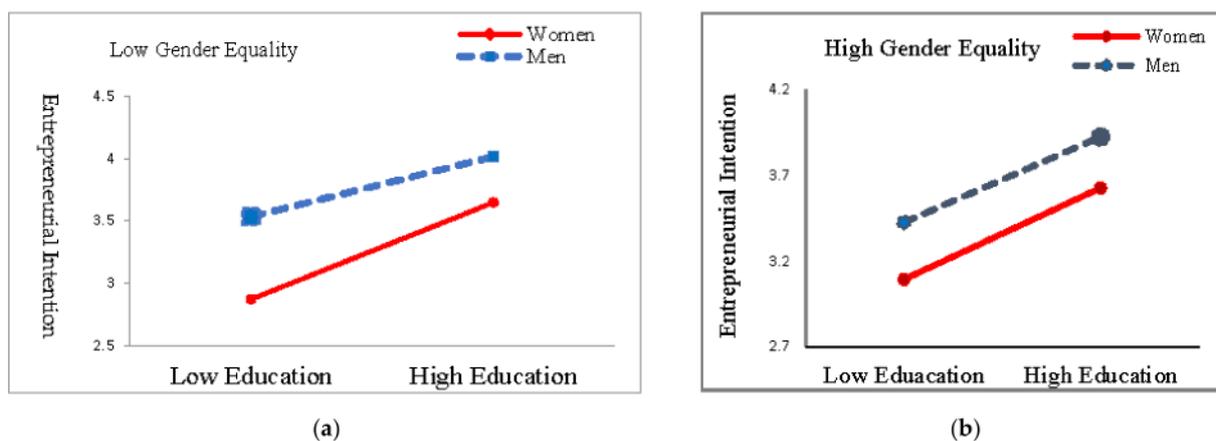
**Figure 4.** Cross-level moderating effect of gender equality on gender.

#### 4.2.4. Cross-Level Moderating Effect of National Gender Equality

Hypothesis 3a predicted that the interaction effect of entrepreneurial education and gender on entrepreneurial intention would vary according to the level of gender equality. Hypothesis 3b predicted that the interaction effect of entrepreneurship experience and gender on entrepreneurial intention would vary according to the level of gender equality.

As shown in Table 3, the cross-level moderating effect of gender equality on the effect of entrepreneurial education and gender on entrepreneurial intention was significant ( $\beta = 1.138, p < 0.05$ ). On the other hand, the cross-level moderating effect of gender equality on the effect of entrepreneurship experience and gender on entrepreneurial intention was not significant ( $\beta = -2.238, n.s.$ ).

The results of the three-way interaction effect of gender equality are shown in Figure 5a,b. In both the low and high gender equality levels, the entrepreneurial intention of women increased as entrepreneurial education level increased. In particular, the positive effects of entrepreneurial education on entrepreneurial intention were found to be higher in countries with low gender equality than in those with high gender equality. Therefore, Hypothesis 3a was supported, and Hypothesis 3b was rejected.



**Figure 5.** (a) Moderating effect of gender on relationship in low gender equality countries. (b) Moderating effect of gender on relationship in high gender equality countries.

## 5. General Discussion and Conclusions

Studies on gender and gender equality are helpful in understanding entrepreneurial activity. In this study, we shed light on the relationship between entrepreneurship-related social experience and entrepreneurial intention from the perspective of gender. The results of the study are summarized as follows. First, entrepreneurial experience and entrepreneurial education increase entrepreneurial intention. Second, the positive relationship between entrepreneurial education and entrepreneurial intention is stronger for women. Finally, we found that the moderating effect of gender on the relationship between entrepreneurial education and entrepreneurial intention varied according to the level of gender equality in each country. Specifically, the positive effect of entrepreneurial education on entrepreneurial intention was higher for women than men, and the moderating effect of gender was stronger in the group of countries with a low level of gender equality. In sum, the positive effects of entrepreneurial education on entrepreneurial intention were confirmed to be highest for women in countries with low gender equality.

Our study supports the view that gender stereotypes may vary depending on gender equality [47]. In particular, women in countries with low gender equality may be less likely to be entrepreneurs because they are largely excluded from relevant social activities due to gender stereotypes. However, entrepreneurial socialization, such as women's entrepreneurial education, can more significantly enhance women's entrepreneurial activity in such circumstances. For example, the differentiation of gender roles in countries with low gender equality often limits the role of women to housework and childcare, meaning there are few career choices for women [2]. In other words, entrepreneurial education for women provides additional career choices. Therefore, women in countries with low gender equality are provided job opportunities through entrepreneurial education, which is believed to increase women's entrepreneurial intention.

### 5.1. Implications

First, this study contributes to the extension of entrepreneurship theory, especially women entrepreneurship. Specifically, this study examined the relationship among entrepreneurial socialization experience (entrepreneurial experience and entrepreneurial education), gender, gender equality, and entrepreneurial intention using global data from 20 countries. Previous studies have suggested that studies should be conducted from a contextual perspective to understand women entrepreneurship and entrepreneurial activity [15,40,48,49]. We used the contextual factor of national gender equality to better understand the relationship between entrepreneurial socialization experience and entrepreneurial intention.

Second, this study shows that entrepreneurial education is more important in countries with low gender equality. Therefore, it is important for countries with low gender equality

to provide various entrepreneurial education opportunities and programs to improve women entrepreneurship and to promote women's participation in economic activities. Women living in countries with low gender equality may be deprived of opportunities for economic activities and may find it appealing to seek entrepreneurial opportunity. Yet, cultural norms surrounding women pursuing entrepreneurial activities may be even harsher in these countries. It is very encouraging that entrepreneurial education could be of use to overcome societal burden that limits women's capabilities for functioning in society. It is also encouraging that we found the result even without considering cross-country variations in contents and quality of entrepreneurial education. It is likely that entrepreneurship education programs in low gender equality countries are poorer in contents and quality, and are less likely to exhibit women in leadership positions. Redesigning entrepreneurial education programs in these countries from the gender perspective should enhance their impacts on women entrepreneurship. Considering that women's participation in economic activities can contribute to economic growth and development [50], national efforts are needed to promote women's entrepreneurial activities. Therefore, countries with low gender equality will be able to contribute to national economic growth by promoting women's participation in economic activities through the improvement of gender equality. Finally, contrary to the case with entrepreneurial education, we did not find the effects of entrepreneurial experience to be different across gender and across countries with different gender equality levels. Yet, we recall that the main effect of entrepreneurial experience on entrepreneurial intention is significant. Thus, countries should establish an entrepreneurial ecosystem that encourages both men and women to engage in entrepreneurial activities and to strengthen competencies for entrepreneurial activity.

### *5.2. Limitations and Directions for Future Research*

This study has the following limitations. First, we used entrepreneurial intention as a proxy for actual entrepreneurial activities. However, future studies should extend the study to actual entrepreneurial activities. Afandi and Kermani [51] argued that although men and women do not differ in their preference for starting a new business, they differ significantly in their behaviors toward starting a new business. Further research is needed to clarify the effects of entrepreneurial education on entrepreneurial behavior using a longitudinal study design.

Second, we used a single item to measure entrepreneurial intention in this study. Although single-item measures are often used to measure entrepreneurial intention, multiple items can increase the reliability of measurement tools [52]. Therefore, if future studies are conducted with multiple-item research, they will provide more reliable results. In a similar vein, we also used single items to measure entrepreneurial education and entrepreneurial experience. It would be desirable to strengthen the reliability of these constructs through multiple items in questionnaires.

Third, the effect of entrepreneurial experience on entrepreneurial intention can depend on the positive or negative nature of prior entrepreneurial experiences. However, in the data of this study, it was not possible to confirm the nature of the prior entrepreneurial experience. Therefore, in future research, a study incorporating the information on whether the entrepreneurial experience was positive or not will enable a deeper analysis.

Fourth, there is a possibility that some other social and economic factors, such as income level or degree of globalization, may co-vary with national gender equality and may affect the relationship found in our study. For example, we found that entrepreneurial intention was higher among men than women. Although the result is in line with prior studies in women entrepreneurship [32,34,35], we cannot exclude the possibility that such a gendered effect is the result of other covariates. In fact, a recent study of business students in a Chilean context showed that there was no gender difference in entrepreneurial intention [53]. The finding is understandable in that admission procedures may result in the homogenization of the student population in terms of social, motivational, and familial background through competition to enter university. Thus, failure to control for covariate

variables is a clear limitation of the current study. We note, however, that countries with low gender equality levels include both high-income countries well integrated with the global economy, such as Japan, Korea, and the UAE, and also countries with relatively low income, probably limiting the extent of the bias due to multiple causality.

Finally, it should be noted that our analysis failed to take into account quality and other related aspects of national programs designed to promote women entrepreneurship. For instance, in the region of the European Union, governments may promote women in leadership positions in entrepreneurship training and financing programs, and this pattern may be correlated simultaneously with the gender gap in entrepreneurial intention, access to entrepreneurial education, entrepreneurial experience, and national gender equality. Given the limitations in our dataset, it is not clear how one might overcome the potential bias in test results. It is worth emphasizing, however, that this is a limitation widely shared in the literature, seen, for instance, in a multilevel analysis conducted by Dilli and Westerhuis [12]. It would be interesting indeed if a richer dataset in the future enables more careful disentangling of various factors at play in the determination of women entrepreneurship.

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