

Gender in Entrepreneurship

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Introduction



Introduction

- United Nations Women (2019), “[g]ender equality is a right.”
- 17 Sustainable Development Goals (SDGs), including no poverty, zero hunger, and quality education, are universal and intended to benefit women as well.
- SDG #5: Gender Equality and SDG #8: Decent Work and Economic Growth aim to transform the lives of women by 2030, ensuring equal opportunities and economic empowerment.
- Potential to shape the future of women worldwide.
- Disparities persist in the number of women who own and operate businesses, emphasizing the need to support women entrepreneurs in achieving these goals.
- “Strengthening women entrepreneurs is a human right, and an economic and environmental imperative” (United Nations SDG: Learn, 2024),

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Literature Review



Literature Review

Foundation

- SDG #5 Gender Equality: “[a]chieve gender equality and empower all women and girls.”
- SDG #8 Decent Work and Economic Growth: “[p]romote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all” (United Nations, 2024).

Entrepreneurship and Sustainable Livelihoods (SL)

- Learning of business skills and strategies from networking to gaining intellectual capital (Achsanina, 2024).
- Empower women entrepreneurs as they contribute to the economies of their countries and regions (Alsaad, et al., 2023).

Government Initiatives and Policies

- Establish long-term vision of their economies and the achievement of their SDGs (Debnath, et al., 2020; Jayanti, 2017).
- Support the social and economic well-being of women entrepreneurs (Dewi, 2022).
- Recognize the different gender constraints that women and men face (Siba, 2019).

Sustainability

- 17 SDGs which can be categorized into economic, social, and environmental dimensions of what needs to be sustained and developed (Fernández, 2021).

Social Impacts

- Essential in minimizing and overcoming gender gaps and inequalities (Pimpa, 2021).
- Besides the expansion of women’s potential, there is also their creativity and care for their communities (Thomas, 2024).

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Purpose of the Research



Purpose

- Analyze Women, Business, and the Law: Entrepreneurship Indicator Score (0-100)
- Assess conditions for women entrepreneurs across global economies
- Evaluate conditions impact women's entrepreneurship
- Conditions evaluated based on Independent Variables #1-5: borrowing, costs, savings, procedures, and time required to start business
- Align findings in literature review on SDG #5 Gender Equality and SDG #8 Decent Work and Economic Growth
- Entrepreneurship identified as strategy and tool for advancing goals for women

Research Question

- **Research Question #1**
 - *Based on Independent Variables #1 and #3 to Dependent Variable*
 - How do borrowing and saving behaviors for starting, operating, or expanding a business influence the Women, Business, and the Law: Entrepreneurship Indicator Score?
- **Research Question #2**
 - *Based on Independent Variables #2 and #4 to Dependent Variable*
 - How do the cost and number of business start-up procedures to register a business affect the Women, Business, and the Law: Entrepreneurship Indicator Score?
- **Research Question #3**
 - *Based on Independent Variable #5 to Dependent Variable*
 - How does the time required to start a business impact the Women, Business, and the Law: Entrepreneurship Indicator Score?

Hypotheses

- **Hypothesis #1**

- *Based on Independent Variables #1 and #3 to Dependent Variable*
- Higher borrowing and saving behaviors for starting, operating, or expanding a business result in higher Women, Business, and the Law: Entrepreneurship Indicator Score [*Hypothesis with Direction*].

- **Hypothesis #2**

- *Based on Independent Variables #2 and #4 to Dependent Variable*
- Higher costs and a greater number of business start-up procedures result in a lower Women, Business, and the Law: Entrepreneurship Indicator Score [*Hypothesis with Direction*].

- **Hypothesis #3**

- *Based on Independent Variable #5 to Dependent Variable*
- Longer time required to start a business results in a lower Women, Business, and the Law: Entrepreneurship Indicator Score [*Hypothesis with Direction*].

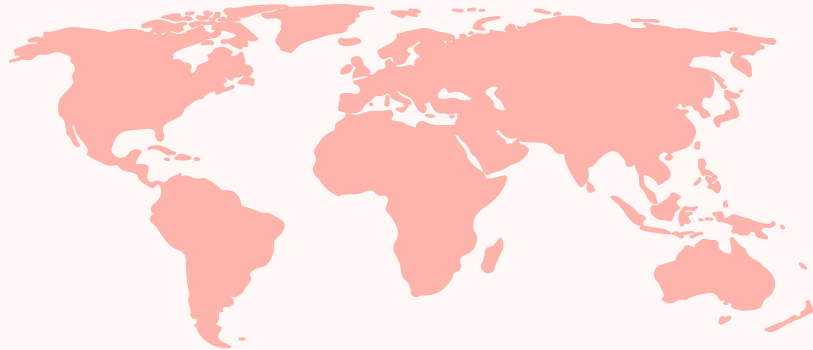
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Data and Methods



Data Acquisition

- **Source:** World Bank Group's Gender Data Portal
- **Topic:** Entrepreneurship
- **Year:** 2017
- **Type:** Secondary Data
- **Geographical Coverage:** Global Economies
- **Indicators:** 16



Data Processing: Part 1

16 Indicators

1. A woman can register a business in the same way as a man (1=yes; 0=no)
2. A woman can sign a contract in the same way as a man (1=yes; 0=no)
3. Borrowed to start, operate, or expand a farm or business (% age 15+)
4. Cost of business start-up procedures (% of GNI per capita)
5. Firms with female participation in ownership (% of firms)
6. Firms with female top manager (% of firms)
7. Number of business owners
8. Number of directors
9. Number of sole proprietors
10. Saved to start, operate, or expand a farm or business (% age 15+)
11. Share of business owners (% of total business owners)
12. Share of directors (% of total directors)
13. Share of sole proprietors (% of sole proprietors)
14. Start-up procedures to register a business (number)
15. Time required to start a business (days)
16. Women, Business and the Law: Entrepreneurship Indicator Score (scale 1-100)

Data Processing: Part 2

| Indicator | Dependent Variable | |
|-----------|----------------------|------------------------------------------------------------------------------|
| #16 | #1 | Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100) |
| | | |
| | Independent Variable | |
| #3 | #1 | Borrowed to start, operate, or expand a farm or business (% age 15+) |
| #4 | #2 | Cost of business startup procedures (% of GNI per capita) |
| #10 | #3 | Saved to Start, Operate, or Expand a Farm or Business (% age 15+) |
| #14 | #4 | Start-up procedures to register a business (number) |
| #15 | #5 | Time required to start a business (days) |

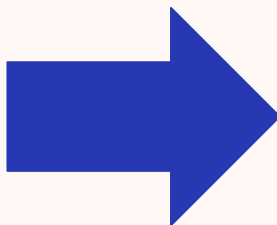
Data Processing: Part 3

- **Original Data:**

- Indicator Name
- Indicator Code
- Country Name
- Country Code
- Year
- Value
- Disaggregation

- **Original Sample (n)**

- $n < 100$
- $n > 100$



- **Processed Data**

- Country Name
- Country Code
- Year = 2017
- Value
- Disaggregation = Female

- **Processed Sample (n)**

- $n \geq 100$

Data Analysis

- **Software**
 - Microsoft Excel
 - PSPP
- **Types of Analysis**
 - Descriptive Statistics
 - Frequency Tables
 - Histograms
 - Bivariate Correlations
 - Ordinary Least Squares (OLS) Regression

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Results



Descriptive Statistics for Dependent and Independent Variables

Table 1: Descriptive statistics for the key variables

| | N Valid | N Missing | Mean | Standard Deviation | Minimum | Maximum |
|------------------------------------------------------------------------------|---------|-----------|-------|--------------------|---------|---------|
| Dependent Variable | | | | | | |
| Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100) | 189 | 3 | 82.94 | 16.61 | 0 | 100 |
| Independent Variables | | | | | | |
| Borrowed to start, operate, or expand a farm or business (% age 15+) | 145 | 47 | 5.82 | 4.78 | 0.1 | 20.7 |
| Cost of business start-up procedures (% of GNI per capita) | 189 | 3 | 26.58 | 46.89 | 0 | 352 |
| Saved to Start, Operate, or Expand a Farm or Business (% age 15+) | 145 | 47 | 11.68 | 6.74 | 0.3 | 33.9 |
| Start-up procedures to register a business (number) | 189 | 3 | 7.21 | 3.09 | 1 | 20 |
| Time required to start a business (days) | 189 | 3 | 21.62 | 26.24 | 1 | 230 |

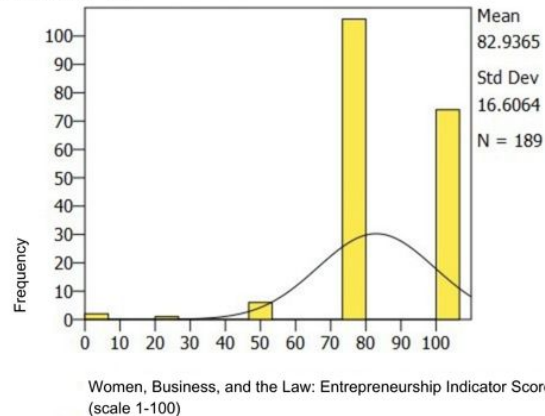
- **Number of Worldwide Economies (across countries and regions)**
 - $n=145$ and $n=189$
- **Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100)**
 - Mean: 82.94; Minimum: 0; Maximum: 100
- **Borrowed to start, operate, or expand a farm or business (% age 15+)**
 - Mean: 5.82%; Minimum: 0.1; Maximum: 20.7
- **Cost of business start-up procedures (% of GNI per capita)**
 - Gross National Income (GNI)
 - Mean: 26.58%; Minimum: 0%; Maximum: 352%
- **Saved to Start, Operate, or Expand a Farm or Business (% age 15+)**
 - Mean: 11.68%; Minimum: 0.3%; Maximum: 33.9%
- **Start-up procedures to register a business (number)**
 - Mean: 7.21; Minimum: 1; Maximum: 20
- **Time required to start a business (days)**
 - Mean: 21.62 days; Minimum: 1 day; Maximum: 230 days

Descriptive Statistics: Frequency Table and Histogram for Dependent Variable

Table 2: Frequency Table for Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100)

| | | | Frequency | Percent | Valid Percent | Cumulative Percent | |
|--|----------------|-----|-----------|---------|---------------|--------------------|--|
| | Valid | 0 | 2 | 1.0% | 1.1% | 1.1% | |
| | | 25 | 1 | 0.5% | 0.5% | 1.6% | |
| | | 50 | 6 | 3.1% | 3.2% | 4.8% | |
| | | 75 | 106 | 55.2% | 56.1% | 60.8% | |
| | | 100 | 74 | 38.5% | 39.2% | 100.0% | |
| | Missing | . | 3 | 1.6% | | | |
| | Total | | 192 | 100.0% | | | |

Table 8: Histogram for Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100)



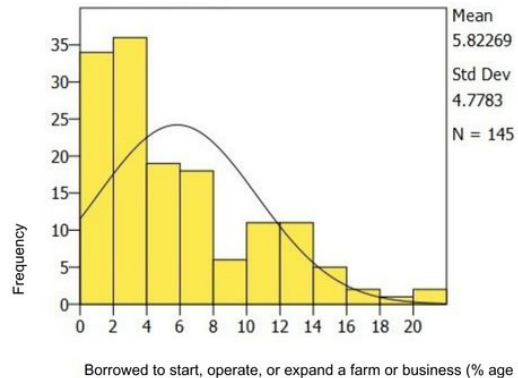
- **1st Highest Frequency:**
 - Scale 75 on Entrepreneurship Indicator Score
 - 106 global economies
- **2nd Highest Frequency:**
 - Scale 100 on Entrepreneurship Indicator Score
 - 74 global economies

Descriptive Statistics: Frequency Table and Histogram for Independent Variable #1

Table 3: Frequency Table for Borrowed to start, operate, or expand a farm or business (% age 15+)

| | | | Frequency | Percent | Valid Percent | Cumulative Percent | |
|------|----------------|------|-----------|---------|---------------|--------------------|--|
| | Valid | 0.1 | 1 | 0.50% | 0.70% | 0.70% | |
| | | 0.6 | 1 | 0.50% | 0.70% | 1.40% | |
| ///V | | | | | | | |
| | | 20.7 | 1 | 0.50% | 0.70% | 99.30% | |
| | | 20.7 | 1 | 0.50% | 0.70% | 100.00% | |
| | Missing | . | 47 | 24.50% | | | |
| | Total | | 192 | 100.00% | | | |

Table 9: Histogram for Borrowed to start, operate, or expand a farm or business (% age 15+)



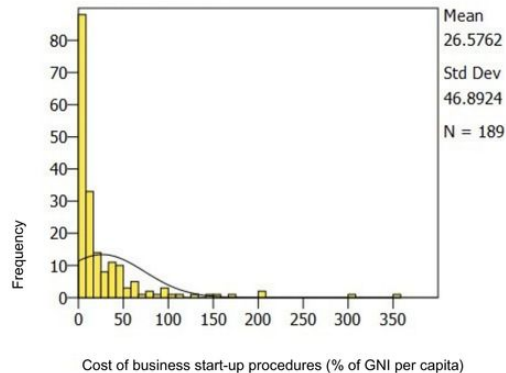
- **1st Highest Frequency:**
 - 2-4% women age 15+ borrowed
- **2nd Highest Frequency:**
 - 0-2% women age 15+ borrowed

Descriptive Statistics: Frequency Table and Histogram for Independent Variable #2

Table 4: Frequency Table for Cost of business start-up procedures (% of GNI per capita)

| | | | Frequency | Percent | Valid Percent | Cumulative Percent | |
|--------|----------------|-----|-----------|---------|---------------|--------------------|--|
| | Valid | 0 | 2 | 1.00% | 1.10% | 1.10% | |
| | | 0 | 3 | 1.60% | 1.60% | 2.60% | |
| /\\V\\ | | | | | | | |
| | | 305 | 1 | 0.50% | 0.50% | 99.50% | |
| | | 352 | 1 | 0.50% | 0.50% | 100.00% | |
| | Missing | . | 3 | 1.60% | | | |
| | Total | | 192 | 100.00% | | | |

Table 10: Histogram for Cost of business start-up procedures (% of GNI per capita)



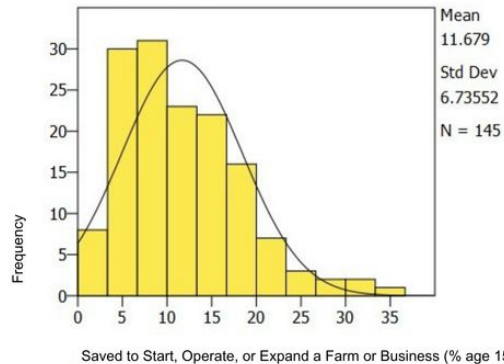
- **Highest Frequency:**
 - 0–10% Gross National Income (GNI) per capita start-up cost
- **Distribution Shape:**
 - Right-Skewed

Descriptive Statistics: Frequency Table and Histogram for Independent Variable #3

Table 5: Frequency Table for Saved to Start, Operate, or Expand a Farm or Business (% age 15+)

| | | | Frequency | Percent | Valid Percent | Cumulative Percent | |
|------|----------------|------|-----------|---------|---------------|--------------------|--|
| | Valid | 0.3 | 1 | 0.50% | 0.70% | 0.70% | |
| | | 1.1 | 1 | 0.50% | 0.70% | 1.40% | |
| /VVV | | | | | | | |
| | | 32.6 | 1 | 0.50% | 0.70% | 99.30% | |
| | | 33.9 | 1 | 0.50% | 0.70% | 100.00% | |
| | Missing | . | 47 | 24.50% | | | |
| | Total | | 192 | 100.00% | | | |

Table 11: Histogram for Saved to Start, Operate, or Expand a Farm or Business (% age 15+)



- **1st Highest Frequency:**
 - 5-10% women age 15+ saved
- **2nd Highest Frequency:**
 - 0-5% women age 15+ saved

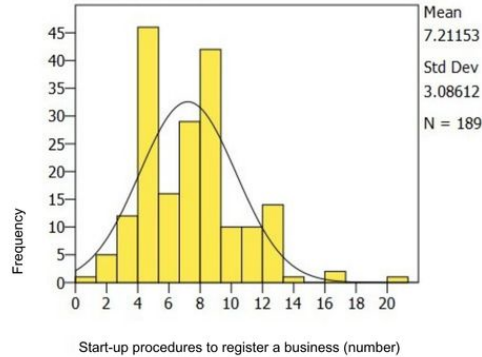
Descriptive Statistics: Frequency Table for Independent Variable #4

Table 6: Frequency Table for Start-up procedures to register a business (number)

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----|-----------|---------|---------------|--------------------|
| Valid | 1 | 1 | 0.50% | 0.50% | 0.50% |
| | 2 | 5 | 2.60% | 2.60% | 3.20% |
| | 3 | 12 | 6.30% | 6.30% | 9.50% |
| | 4 | 19 | 9.90% | 10.10% | 19.60% |
| | 5 | 27 | 14.10% | 14.30% | 33.90% |
| | 6 | 16 | 8.30% | 8.50% | 42.30% |
| | 7 | 28 | 14.60% | 14.80% | 57.10% |
| | 8 | 1 | 0.50% | 0.50% | 57.70% |
| | 8 | 22 | 11.50% | 11.60% | 69.30% |
| | 8 | 1 | 0.50% | 0.50% | 69.80% |
| | 9 | 19 | 9.90% | 10.10% | 79.90% |
| | 10 | 10 | 5.20% | 5.30% | 85.20% |
| | 11 | 10 | 5.20% | 5.30% | 90.50% |
| | 12 | 8 | 4.20% | 4.20% | 94.70% |
| | 12 | 1 | 0.50% | 0.50% | 95.20% |
| | 12 | 1 | 0.50% | 0.50% | 95.80% |
| | 13 | 4 | 2.10% | 2.10% | 97.90% |
| | 14 | 1 | 0.50% | 0.50% | 98.40% |
| | 16 | 1 | 0.50% | 0.50% | 98.90% |
| | 17 | 1 | 0.50% | 0.50% | 99.50% |
| | 20 | 1 | 0.50% | 0.50% | 100.00% |
| Missing | . | 3 | 1.60% | | |
| Total | | 192 | 100.00% | | |

Descriptive Statistics: Frequency Table for Independent Variable #4

Table 12: Histogram for Start-up procedures to register a business (number)



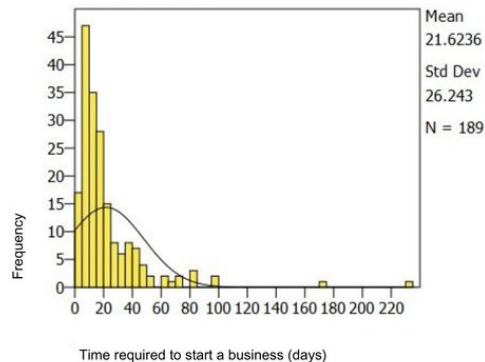
- **1st Highest Frequency:**
 - 7 start-up procedures
- **2nd Highest Frequency:**
 - 5 start-up procedures
- **3rd Highest Frequency:**
 - 8 start-up procedures

Descriptive Statistics: Frequency Table and Histogram for Independent Variable #5

Table 7: Frequency Table for Time required to start a business (days)

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|-----|-----------|---------|---------------|--------------------|
| Valid | 1 | 1 | 0.50% | 0.50% | 0.50% |
| | 2 | 2 | 1.00% | 1.10% | 1.60% |
| /VVV | | | | | |
| | 174 | 1 | 0.50% | 0.50% | 99.50% |
| | 230 | 1 | 0.50% | 0.50% | 100.00% |
| Missing | . | 3 | 1.60% | | |
| Total | | 192 | 100.00% | | |

Table 13: Histogram for Time required to start a business (days)



- **1st Highest Frequency:**
 - 5-10 days time required
- **2nd Highest Frequency:**
 - 10-15 days time required
- **3rd Highest Frequency:**
 - 15-20 days time required

Bivariate Correlations for Independent Variable #1

Table 14: Biovariate Correlations: Borrowed to start, operate, or expand a farm or business (% age 15+)

| | Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100) | Borrowed to start, operate, or expand a farm or business (% age 15+) |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100) | | |
| Pearson Correlation | 1.000 | -0.318* |
| Significance Level (2-tailed) | | 0.000 |
| N | 189 | 144 |
| Borrowed to start, operate, or expand a farm or business (% age 15+) | | |
| Pearson Correlation | -0.318* | 1.000 |
| Significance Level (2-tailed) | 0.000 | |
| N | 144 | 145 |
| Note: Significant at 0.05 level | | |

- **Borrowed to start, operate, or expand a farm or business (% age 15+)**
 - **Pearson Correlation:** -0.318 (negative, very weak)
 - **Significance Level (2-tailed):** 0.000 (significant)
 - **Relationship:** Inverse
- Statistically significant, very weak inverse relationship between borrowing (% age 15+) and Entrepreneurship Indicator Score (Scale 0-100)
- *Borrowing (% age 15+) ↑ Entrepreneurship Indicator Score (Scale 0-100) ↓ slightly*
- *Borrowing (% age 15+) ↓ Entrepreneurship Indicator Score (Scale 0-100) ↑ slightly*

Bivariate Correlations for Independent Variable #2

Table 15: Bivariate Correlations: Cost of business start-up procedures (% of GNI per capita)

| | Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100) | Cost of business start-up procedures (% of GNI per capita) |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------|
| Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100) | | |
| Pearson Correlation | 1.000 | -0.262* |
| Significance Level (2-tailed) | | 0.000 |
| N | 189 | 189 |
| Cost of business start-up procedures (% of GNI per capita) | | |
| Pearson Correlation | -0.262* | 1.000 |
| Significance Level (2-tailed) | 0.000 | |
| N | 189 | 189 |

Note: Significant at 0.05 level

- **Cost of business start-up procedures (% of GNI per capita)**
 - **Pearson Correlation:** -0.262 (negative, very weak)
 - **Significance Level (2-tailed):** 0.000 (significant)
 - **Relationship:** Inverse
- Statistically significant, very weak inverse relationship between cost (% of GNI per capita) and Entrepreneurship Indicator Score (Scale 0-100)
- *Cost (% of GNI per capita) ↑ Entrepreneurship Indicator Score (Scale 0-100) ↓ slightly*
- *Cost (% of GNI per capita) ↓ Entrepreneurship Indicator Score (Scale 0-100) ↑ slightly*

Bivariate Correlations for Independent Variable #3

Table 16: Bivariate Correlations: Saved to Start, Operate, or Expand a Farm or Business (% age 15+)

| | Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100) | Saved to Start, Operate, or Expand a Farm or Business (% age 15+) |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100) | | |
| Pearson Correlation | 1.000 | -0.188* |
| Significance Level (2-tailed) | | 0.024 |
| N | 189 | 144 |
| Saved to Start, Operate, or Expand a Farm or Business (% age 15+) | | |
| Pearson Correlation | -0.188* | 1.000 |
| Significance Level (2-tailed) | 0.024 | |
| N | 144 | 145 |

Note: Significant at 0.05 level

- **Saved to Start, Operate, or Expand a Farm or Business (% age 15+)**
 - **Pearson Correlation:** -0.188 (negative, very weak)
 - **Significance Level (2-tailed):** 0.024 (significant)
 - **Relationship:** Inverse
- Statistically significant, very weak inverse relationship between saving (% age 15+) and Entrepreneurship Indicator Score (Scale 0-100)
- *Saving (% age 15+) ↑ Entrepreneurship Indicator Score (Scale 0-100) ↓ slightly*
- *Saving (% age 15+) ↓ Entrepreneurship Indicator Score (Scale 0-100) ↑ slightly*

Bivariate Correlations for Independent Variable #4

Table 17: Bivariate Correlations: Start-up procedures to register a business (number)

| | Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100) | Start-up procedures to register a business (number) |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------------|
| Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100) | | |
| Pearson Correlation | 1.000 | -0.324* |
| Significance Level (2-tailed) | | 0.000 |
| N | 189 | 189 |
| Start-up procedures to register a business (number) | | |
| Pearson Correlation | -0.324* | 1.000 |
| Significance Level (2-tailed) | 0.000 | |
| N | 189 | 189 |

Note: Significant at 0.05 level

- **Start-up procedures to register a business (number)**
 - **Pearson Correlation:** -0.324 (negative, very weak)
 - **Significance Level (2-tailed):** 0.000 (significant)
 - **Relationship:** Inverse
- Statistically significant, very weak inverse relationship between procedures (number) and Entrepreneurship Indicator Score (Scale 0-100)
- *Procedures (number) ↑ Entrepreneurship Indicator Score (Scale 0-100) ↓ slightly*
- *Procedures (number) ↓ Entrepreneurship Indicator Score (Scale 0-100) ↑ slightly*

Bivariate Correlations for Independent Variable #5

Table 18: Bivariate Correlations: Time required to start a business (days)

| | Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100) | Time required to start a business (days) |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------|
| Women, Business, and the Law: Entrepreneurship Indicator Score (scale 1-100) | | |
| Pearson Correlation | 1.000 | -0.102 |
| Significance Level (2-tailed) | | 0.163 |
| N | 189 | 189 |
| Time required to start a business (days) | | |
| Pearson Correlation | -0.102 | 1.000 |
| Significance Level (2-tailed) | 0.163 | |
| N | 189 | 189 |

- **Time required to start a business (days)**
 - **Pearson Correlation:** -0.102 (negative, very weak)
 - **Significance Level (2-tailed):** 0.163 (not significant)
 - **Relationship:** Inverse
- Not statistically significant, very weak inverse relationship between time (days) and Entrepreneurship Indicator Score (Scale 0-100)
- *Time (days) ↑ Entrepreneurship Indicator Score (Scale 0-100) ↓ slightly*
- *Time (days) ↓ Entrepreneurship Indicator Score (Scale 0-100) ↑ slightly*

Ordinary Least Squares (OLS) Regression for Dependent and Independent Variables

Table 19: OLS Regression Summary - Women, Business, and the Law: Entrepreneurship Indicator Score (Scale 0-100) (n=189)

| | | | Value | | | |
|--|--|--------------------------------|-------|--|--|--|
| | | R | 0.42 | | | |
| | | R Squared | 0.18 | | | |
| | | Adjusted R Square | 0.15 | | | |
| | | Standard Error of the Estimate | 13.00 | | | |

- **Women, Business, and the Law: Entrepreneurship Indicator Score (Scale 0-100)**
 - **R Squared = 0.18**
 - 18% variance in dependent variable explained by independent variables in OLS regression
 - 82% unexplained and may be influenced by other variables not included in research
 - Limited explanatory power
 - Relatively weak relationship between dependent and independent variables

Ordinary Least Squares (OLS) Regression for Dependent and Independent Variables

Table 20: ANOVA of OLS Regression - Differences in Women, Business, and the Law: Entrepreneurship Indicator Score (Scale 1-100) by Country and Region (n=189)

| | | Sum of Squares | df | Mean Square | F | Significance Level | | | |
|--|--|-------------------|----------|-------------|---------|--------------------|-------|--|--|
| | | Regression | 5061.04 | 5 | 1012.21 | 5.99 | 0.000 | | |
| | | Residual | 23138.27 | 137 | 168.89 | | | | |
| | | Total | 28199.30 | 142 | | | | | |

- **Women, Business, and the Law: Entrepreneurship Indicator Score (Scale 0-100)**
 - **F-Statistic:** 5.99
 - **Significance Level:** 0.000
 - Statistically significant
 - Explains variation in Entrepreneurship Indicator Score
 - At least one independent variable has significant impact on Entrepreneurship Indicator Score

Ordinary Least Squares (OLS) Regression for Dependent and Independent Variables

Table 21: OLS Regression Coefficients - Women, Business, and the Law: Entrepreneurship Indicator Score (Scale 1-100) (n=189)

| | Unstandardized Coefficients B | Unstandardized Coefficients Standard Error | Standardized Coefficients Beta | t | Significance Level | 95% Confidence Interval for B Lower Bound | 95% Confidence Interval for B Upper Bound |
|-----------------------------------------------------------------------------|-------------------------------|--------------------------------------------|--------------------------------|-------|--------------------|-------------------------------------------|-------------------------------------------|
| Constant | 96.86 | 3.23 | 0.00 | 29.96 | 0.000 | 90.47 | 103.26 |
| Borrowed to start, operate, or expand a farm or business (% age 15+) | -0.76 | 0.34 | -0.26 | -2.25 | 0.026 | -1.42 | -0.09 |
| Cost of business start-up procedures (% of GNI per capita) | -0.05 | 0.03 | -0.17 | -1.83 | 0.070 | -0.10 | 0.00 |
| Saved to Start, Operate, or Expand a Farm or Business (% age 15+) | 0.08 | 0.23 | 0.04 | 0.34 | 0.732 | -0.37 | 0.53 |
| Start-up procedures to register a business (number) | -1.17 | 0.44 | -0.27 | -2.66 | 0.009 | -2.04 | -0.30 |
| Time required to start a business (days) | 0.10 | 0.05 | 0.20 | 1.92 | 0.057 | 0.00 | 0.20 |

- Entrepreneurship Indicator Score = $a + b_1 \text{ Borrowed} + b_2 \text{ Cost} + b_3 \text{ Saved} + b_4 \text{ Procedures} + B_5 \text{ Time}$
- **Constant - Women, Business, and the Law: Entrepreneurship Indicator Score (Scale 0-100)**
 - **Intercept:** $a = 96.86$
 - Theoretical Entrepreneurship Indicator Score when all independent variables ($b_1 \text{ Borrowed} + b_2 \text{ Cost} + b_3 \text{ Saved} + b_4 \text{ Procedures} + B_5 \text{ Time}$) = 0
 - Overall conditions positive and supportive for Entrepreneurship Indicator Score and entrepreneurship.
 - **Significance Level:** 0.000 (significant)
 - Statistically significant, intercept as reliable predictor for Entrepreneurship Indicator Score

Ordinary Least Squares (OLS) Regression for Dependent and Independent Variables

- **Borrowed to start, operate, or expand a farm or business (% age 15+)**
 - **Unstandardized Coefficients (B):** -0.76 (negative); **Significance Level:** 0.026 (significant)
 - Significantly negative net effect, borrowing (% 15+) decrease 0.76 Entrepreneurship Indicator Score
- **Cost of business start-up procedures (% of GNI per capita)**
 - **Unstandardized Coefficients (B):** -0.05 (negative); **Significance Level:** 0.070 (not significant)
 - *Insignificantly negative net effect*, cost (% GNI per capita) decrease 0.05 Entrepreneurship Indicator Score
- **Saved to Start, Operate, or Expand a Farm or Business (% age 15+)**
 - **Unstandardized Coefficients (B):** 0.08 (positive); **Significance Level:** 0.732 (not significant)
 - *Insignificantly positive net effect*, savings (% 15+) increase 0.08 Entrepreneurship Indicator Score
- **Start-up procedures to register a business (number)**
 - **Unstandardized Coefficients (B):** -1.17 (negative); **Significance Level:** 0.009 (significant)
 - Significantly negative net effect, procedures (number) decrease 1.17 Entrepreneurship Indicator Score
- **Time required to start a business (days)**
 - **Unstandardized Coefficients (B):** 0.10 (positive); **Significance Level:** 0.057 (not significant)
 - *Insignificantly positive net effect*, time (days) increase 0.10 Entrepreneurship Indicator Score

Ordinary Least Squares (OLS) Regression for Dependent and Independent Variables

- **Most Robust Predictor of Entrepreneurship Indicator Score Using Standardized Coefficients (Beta)**
 - **1st Largest Beta**
 - $|-0.27| = 0.27$
 - Start-up procedures to register a business (number)
 - **2nd Largest Beta**
 - $|-0.26| = 0.26$
 - Borrowed to start, operate, or expand a farm or business (% age 15+)

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Discussion



Results Summary for Research Question and Hypothesis #1

- **Descriptive Statistics:**
 - **Borrowed to start, operate, or expand a farm or business (% age 15+)**
 - **Mean:** 5.82%; **Minimum:** 0.1; **Maximum:** 20.7; **Highest Frequency:** 2-4%
 - **Saved to Start, Operate, or Expand a Farm or Business (% age 15+)**
 - **Mean:** 11.68%; **Minimum:** 0.3%; **Maximum:** 33.9%; **Highest Frequency:** 5-10%
- **Bivariate Correlations:**
 - **Borrowed to start, operate, or expand a farm or business (% age 15+)**
 - **Pearson Correlation:** -0.318 (negative, very weak); **Significance Level (2-tailed):** 0.000 (significant); **Relationship:** Inverse
 - **Saved to Start, Operate, or Expand a Farm or Business (% age 15+)**
 - **Pearson Correlation:** -0.188 (negative, very weak); **Significance Level (2-tailed):** 0.024 (significant); **Relationship:** Inverse
- **Ordinary Least Squares (OLS) Regression:**
 - **Borrowed to start, operate, or expand a farm or business (% age 15+)**
 - **Unstandardized Coefficients (B):** -0.76 (negative); **Significance Level:** 0.026 (significant); **2nd Largest Beta:** $|-0.26| = 0.26$
 - **Saved to Start, Operate, or Expand a Farm or Business (% age 15+)**
 - **Unstandardized Coefficients (B):** 0.08 (positive); **Significance Level:** 0.732 (not significant)

Discussion for Research Question and Hypothesis #1

- **Research Question #1**

- **How do borrowing and saving behaviors for starting, operating, or expanding a business influence the Women, Business, and the Law: Entrepreneurship Indicator Score?**

- Low borrowing behaviors average 5.82% and most women borrowing 2-4%
- Slightly higher saving behaviors average 11.68% and most women saving 5-10%
- Borrowing behaviors increase, Entrepreneurship Indicator Score decreases 0.76
- Saving behaviors no effect on Entrepreneurship Indicator Score

- **Hypothesis #1**

- **Higher borrowing and saving behaviors for starting, operating, or expanding a business result in higher Women, Business, and the Law: Entrepreneurship Indicator Score.**

- Results does not support hypothesis
- Higher borrowing behavior negative impact on Entrepreneurship Indicator Score
- Higher saving behavior no negative or positive impact on Entrepreneurship Indicator Score

Results Summary for Research Question and Hypothesis #2

- **Descriptive Statistics:**
 - **Cost of business start-up procedures (% of GNI per capita)**
 - **Mean:** 26.58%; **Minimum:** 0%; **Maximum:** 352%; **Highest Frequency:** 0–10%
 - **Start-up procedures to register a business (number)**
 - **Mean:** 7.21; **Minimum:** 1; **Maximum:** 20; **Highest Frequency:** 7
- **Bivariate Correlations:**
 - **Cost of business start-up procedures (% of GNI per capita)**
 - **Pearson Correlation:** -0.262 (negative, very weak); **Significance Level (2-tailed):** 0.000 (significant);
Relationship: Inverse
 - **Start-up procedures to register a business (number)**
 - **Pearson Correlation:** -0.324 (negative, very weak); **Significance Level (2-tailed):** 0.000 (significant);
Relationship: Inverse
- **Ordinary Least Squares (OLS) Regression:**
 - **Cost of business start-up procedures (% of GNI per capita)**
 - **Unstandardized Coefficients (B):** -0.05 (negative); **Significance Level:** 0.070 (not significant)
 - **Start-up procedures to register a business (number)**
 - **Unstandardized Coefficients (B):** -1.17 (negative); **Significance Level:** 0.009 (significant); **1st Largest Beta:** $|-0.27| = 0.27$

Discussion for Research Question and Hypothesis #2

- **Research Question #2**

- **How do the cost and number of business start-up procedures to register a business affect the Women, Business, and the Law: Entrepreneurship Indicator Score?**
 - Moderate cost average 26.58% and most cost 0-10% (% of GNI per capita)
 - Cost range 0% (no cost) - 352% (very high cost)
 - Number of business start-up procedures average 7.21 and most 7
 - Procedures range 0-20
 - Cost no effect on Entrepreneurship Indicator Score
 - Number of business start-up procedures increases, Entrepreneurship Indicator Score decreases 1.17

- **Hypothesis #2**

- **Higher costs and a greater number of business start-up procedures result in a lower Women, Business, and the Law: Entrepreneurship Indicator Score.**
 - Result partially support hypothesis
 - Higher costs negative impact on Entrepreneurship Indicator Score, but relationship lacks statistical significance
 - Greater number of business start-up procedures negative impact on Entrepreneurship Indicator Score

Results Summary for Research Question and Hypothesis #3

- **Descriptive Statistics:**
 - **Time required to start a business (days)**
 - **Mean:** 21.62 days; **Minimum:** 1 day; **Maximum:** 230 days; **Highest Frequency:** 5-10 days
- **Bivariate Correlations:**
 - **Time required to start a business (days)**
 - **Pearson Correlation:** -0.102 (negative, very weak); **Significance Level (2-tailed):** 0.163 (not significant);
Relationship: Inverse
- **Ordinary Least Squares (OLS) Regression:**
 - **Time required to start a business (days)**
 - **Unstandardized Coefficients (B):** 0.10 (positive); **Significance Level:** 0.057 (not significant)

Discussion for Research Question and Hypothesis #3

- **Research Question #3**

- **How does the time required to start a business impact the Women, Business, and the Law: Entrepreneurship Indicator Score?**

- Time required to start a business average 21.62 days with most 5-10 days
- Range 1-230 days
- Statistically insignificant from Bivariate Correlations and OLS Regression

- **Hypothesis #3**

- **Longer time required to start a business results in a lower Women, Business, and the Law: Entrepreneurship Indicator Score.**

- Results does not support hypothesis
- No clear evidence time required to start a business impact Entrepreneurship Indicator Score

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Limitations and Future Research



Limitations and Future Research

- **Limitations**

- Not all 16 Indicators $n \geq 100$
- Limited indicators as dependent and independent variables
- 2 Independent variables only available 2014 and 2017
 - Borrowed to start, operate, or expand a farm or business (% age 15+)
 - Saved to start, operate, or expand a farm or business (% age 15+)
- Most recent year available for dependent and independent variables vary 2017-2023
- Different economic, social, and cultural conditions for global economies
- Research not connected with other topics in World Bank Group Gender Data Portal
 - Assets, Education, Employment and time use, Environment, Health, Leadership, Norms and Decision-making, Population, Technology, Violence, Children 0-14, Youth 15-24, and Sustainable Development Goals (SDGs)

- **Future Research**

- In addition to entrepreneurship, what other strategies could advance the Sustainable Development Goals (SDGs)?
- How can the work of women in the informal economy be better addressed to support the SDGs?
- Comparison of variables and results (if available) when disaggregation = male, disaggregation = total
- What do the variables and results show for men entrepreneurs?
- Pre-COVID and Post-COVID entrepreneurship

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Conclusion



Conclusion

- **Question and Hypothesis #1:**
 - Borrowing and saving behaviors do not have expected positive impact on Entrepreneurship Indicator Score
 - Borrowing behaviors linked decline in Entrepreneurship Indicator Score, suggest barriers to access and use of business loans for women's entrepreneurship
 - Structural and systemic financial factors
- **Question and Hypothesis #2:**
 - Some economies cost of starting a business relatively low
 - Other economies cost of starting a business significant financial barrier
 - Number of start-up procedures to register a business has greater negative impact than start-up costs
 - Highlight impact of government initiatives and policies on women's entrepreneurship
 - Simplify procedures for women's entrepreneurship
- **Question and Hypothesis #3:**
 - Other variables best time required substantial role impact Entrepreneurship Indicator Score
- **Impact on on Entrepreneurship Indicator Score**
 - Borrowed to start, operate, or expand a farm or business (% age 15+)
 - Start-up procedures to register a business (number)
- Other variables and strategies positively impact Entrepreneurship Indicator Score
- Other strategies advance SDG #5: Gender Equality and SDG #8: Decent Work and Economic Growth

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