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Bachelor Thesis

**CULTURE AND ENTREPRENEURIAL DYNAMICS IN
MIDDLE-INCOME COUNTRIES: UNLOCKING
OPPORTUNITIES IN THE STARTUP SCENE**

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Abstract:

Startups drive economic growth, job creation, and technological advancement. They disrupt industries, introduce new products, and boost productivity. Understanding startup dynamics, culture, and entrepreneurship is crucial for researchers, policymakers, and business leaders. People's different beliefs and views of entrepreneurial opportunities are deeply rooted in cultural factors because culture plays a significant role in shaping individuals' beliefs and cognitive frameworks. The main objective of this study is to investigate how the cultural value placed on individual success, self-sufficiency, and individual responsibility, influence the startup rate across middle-income countries. We found a positive relationship between these values and startup rates. Despite the challenges and limitations often associated with middle-income status, our results suggest these countries exhibit certain special characteristics that can be conducive to foster entrepreneurial activity in the startup scene.

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Chapter 1: Introduction

Startups have become focus of research due to their impact on economies, innovation, and societal development. Understanding startup dynamics, culture, and entrepreneurship is crucial for researchers, policymakers, and business leaders. Startups drive economic growth, job creation, and technological advancement. They disrupt industries, introduce new products, and boost productivity. Startups also shape entrepreneurial ecosystems by fostering risk-taking, creativity, and collaboration (Audretsch & Thurik, 2001). Studying startups has policy implications, as policymakers need evidence-based insights for effective measures supporting entrepreneurship. Startups can address social challenges, promote sustainability, and meet unmet needs. Investigating startups and their interaction with culture and contextual factors is critical to understand their role in driving economic growth, innovation, and vibrant entrepreneurial ecosystems that benefit society.

In today's economy, studying startups and entrepreneurship is even more important. Entrepreneurial innovation is the catalyst for change in capitalist societies (Shane & Venkataraman 2000; Baumol, 1990; Audretsch & Thurik, 2001). While established industries may have matured, it is the infusion of fresh ideas, disruptive technologies, and innovative business models that push economies forward (Chesbrough, 2003; Teece, 2007). Entrepreneurship research provides insight into the power of emerging ideas, identification of factors that foster innovation, and an understanding of how entrepreneurial efforts revitalize industries. By studying entrepreneurship, insights are gained about the mechanisms behind conceptualizing, developing, and translating new ideas into tangible business contributions, shaping the future of industries and economies (Davidsson & Honing, 2003; Gartner 1988; Shane & Venkataraman, 2000).

Focusing on startups is important as they represent early-stage entrepreneurial activity, they capture inflection moments when entrepreneurs take risks and venture into new endeavors. Startups offer a lens to examine the concept of emergence in entrepreneurship. According to Shane and Venkataraman (2000), entrepreneurship involves discovering and exploiting entrepreneurial opportunities. Studying startups provides insights into how entrepreneurs identify and seize opportunities, leading to the emergence of new organizations. Unlike established businesses, startups offer a unique point of view to understand entrepreneurs' initial steps and the factors influencing their decision-making process.

Contemporary definitions of entrepreneurship and research frameworks highlight the concept of emergence, emphasizing early-stage phenomena like opportunity detection, action, and new organization formation (Gartner, 1988; Shane & Venkataraman, 2000). Analyzing factors influencing the emergent phases of entrepreneurship provides researchers with empirical insights into the role of human and social capital in shaping startup dynamics (Davidsson & Honig, 2003).

Entrepreneurship addresses temporal and spatial inefficiencies in an economy (Kirzner, 1997). Through entrepreneurship, individuals identify and mitigate these inefficiencies by introducing new goods, services, raw materials, and organizational methods. Kirzner (1997) differentiates entrepreneurial opportunities from other profit opportunities, highlighting their focus on discovering new means-ends relationships rather than optimizing existing ones.

Entrepreneurial opportunities exist because individuals possess different beliefs about the value of resources and their potential to transform them into a different state (Kirzner, 1997). These varying beliefs lead people to make different decisions about market dynamics or the creation of new markets in the future. People's different beliefs and views of entrepreneurial opportunities are deeply rooted in cultural factors because culture plays a significant role in shaping individuals' beliefs and cognitive frameworks. It becomes essential to consider cultural dimensions when examining the factors influencing startup rates.

Entrepreneurship is observable at various levels, including the individual, firm, region, industry, and nation (Wennekers and Thurik, 1999); reason why entrepreneurship research employs insights from disciplines such as economics, sociology, and psychology (Wennekers et al. 2002 as cited in Freytag & Thurik, 2007). Nascent entrepreneurship (startups) exhibits considerable diversity across nations and regions (Freytag and Thurik, 2007). This relative stability of differences in entrepreneurial activity across countries suggests that factors beyond purely economic considerations are at play (Grilo and Thurik, 2005 as cited in Freytag & Thurik, 2007). This further highlights the significance of cultural factors in shaping entrepreneurial behavior and the need to analyze culture when studying the startup rates.

For middle-income countries, this turns out to be of greater importance because they face unique challenges and opportunities in their pursuit of economic development. For these countries, startups represent a crucial avenue for fostering innovation, job creation, and economic diversification. As argued by Acs and Szerb (2009), middle-income countries often possess

higher growth potential compared to high-income countries, as they have the opportunity to leverage their resource endowments, human capital, and entrepreneurial activities to drive sustainable economic growth. Cultural factors shape the norms, values, and attitudes towards risk-taking, entrepreneurship, and innovation within a society; influencing the propensity for individuals to engage in entrepreneurial activities (Hofstede, 2001). Therefore, by analyzing the cultural dimensions that underpin startup formation and growth, policymakers and researchers can tailor strategies and policies that align with the cultural fabric of middle-income countries, unleashing their entrepreneurial potential and fostering inclusive economic development.

The main objective of this study is to investigate the relationship between the cultural value placed on individual success, self-sufficiency, and individual responsibility. Specifically, the study aims to examine how these cultural values influence the startup rate across middle-income countries. The central research question that this study seeks to answer is: ***How does the cultural emphasis on individual success, self-sufficiency, and individual responsibility influence the startup rates across middle-income countries?*** Through this investigation, the study aims to gain a better understanding of the role of cultural values in shaping entrepreneurial activity, specifically startups, and its important impact on economic development in middle-income countries. In order to answer this question, the concept of culture will be explored in the next sections, as well as some theories to operationalize culture so it can be included in our empirical analysis.

The thesis is structured as follows. After this brief introduction, in the second section, we review the literature on the concept of culture and the relationship between culture and entrepreneurial activity and propose our hypothesis. The third section presents the details of the data used in this research. The fourth section discusses the empirical approach to answer our question, and the fifth section analyzes the study results. Finally, we point out the most relevant conclusions.

Chapter 2: Literature Review

2.1 Culture

According to Geert Hofstede, a renowned social psychologist and researcher, culture refers to “the collective programming of the mind that distinguishes the members of one group or category of people from another.” (Hofstede Insights, 2019). It encompasses a set of shared beliefs, values, norms, customs, behaviors, and symbols that are learned and transmitted across generations; culture shapes individuals' perceptions, attitudes, and behaviors, influencing their interactions with others and their understanding of the world. (Hofstede Insights, 2019).

The relationship between entrepreneurship and national culture has also been subject of extensive research, with scholars investigating how cultural factors shape entrepreneurial behavior and outcomes. Several notable researchers have contributed to this field, shedding light on the complex interplay between entrepreneurship and national culture.

2.2 Cultural approach on entrepreneurship

One influential study in this area was conducted by Hofstede (1980), who introduced the concept of cultural dimensions. Hofstede's research identified several dimensions, including the dimensions of individualism versus collectivism, power distance, and uncertainty avoidance, which provided a framework for understanding the cultural variations that influence entrepreneurial activity.

In the context of individualism versus collectivism, individualistic cultures place a high value on personal independence, autonomy, and self-reliance. Individuals in such cultures tend to prioritize their own goals, achievements, and personal freedom. They are more likely to pursue entrepreneurial opportunities and take risks, as they emphasize personal initiative and the pursuit of individual success (Liñán & Fernandez-Serrano, 2014). On the other hand, individuals in collectivistic cultures prioritize the goals and needs of the group over individual aspirations. They may be more inclined to engage in entrepreneurial activities that benefit the community or family, rather than solely pursuing personal success (Liñán & Fernandez-Serrano, 2014). The

dimension of individualism versus collectivism encompasses or is related to the cultural elements that will be analyzed and is therefore used as the theoretical basis for this research.

The individualistic dimension influences how individuals perceive and respond to entrepreneurial opportunities, as well as their willingness to take initiative and engage in independent decision-making (Shane et al., 2003). Moreover, Liñán and Chen (2009) conducted a study focusing on entrepreneurial success factors across different cultures. They found that individualistic cultural values positively influenced entrepreneurial success, as individuals from individualistic cultures were more likely to exhibit proactive behaviors, take initiative, and persevere in the face of challenges, which are critical for entrepreneurial success.

Davidsson and Honig (2003) explored the role of social and human capital among nascent entrepreneurs. Their research emphasized the importance of these factors in the entrepreneurial process and highlighted how culture mediates individuals' decision-making and opportunity recognition.

Acs and Szerb (2007) extensively investigated the relationship between national culture and the level of entrepreneurship across countries. Their findings consistently demonstrated that cultural factors, such as individualism, innovation, and risk-taking, have a significant positive effect on entrepreneurial activity. These cultural dimensions were found to be instrumental in explaining variations in startup rates and entrepreneurial behavior observed across different nations.

Shane and Venkataraman (2000) explored the connection between entrepreneurial opportunities and cultural factors. They highlighted that cultural factors, such as societal norms and values, play a critical role in shaping the entrepreneurial mindset. They revealed how cultural values and beliefs influence the identification and pursuit of opportunities, emphasizing the role of societal norms and values in shaping the entrepreneurial mindset across cultures. Urbano and Alvarez (2014) explored the impact of cultural-cognitive dimensions on entrepreneurial activity. Their research revealed that cultural values associated with innovation, risk-taking, and the perception of entrepreneurial opportunities have a positive influence on entrepreneurial activity. This study highlighted the importance of cultural factors in shaping the overall entrepreneurial ecosystem, as cultural values create an environment that fosters and supports startup initiatives.

Overall, findings suggest that cultural dimensions related to individualism play a significant role in shaping entrepreneurial behavior and outcomes. Cultures that emphasize individualism tend to foster an environment conducive to entrepreneurial intentions, activities, and success. The emphasis on personal goals, autonomy, and risk-taking in individualistic cultures aligns with the mindset and behaviors commonly associated with entrepreneurial endeavors. According to this logic and in light of our research question, we propose the hypothesis to be tested:

Hypothesis 1: *Cultures that place a high value on individual success, self-sufficiency, and individual responsibility positively affect startup rates.*

Chapter 3: Data

The data employed is sourced from the Global Entrepreneurship Monitor (GEM) database, a renowned research institution that collects comprehensive data on entrepreneurial activity. Specific variables shed light on cultural dimensions that shape entrepreneurial activities, capturing individual beliefs and experiences. The dataset spans the period from 2009 to 2019 and collects data for multiple countries each year¹.

3.1 Start Up Rate

The variable of interest is entrepreneurship, specifically the startup rate, which indicates the number of new businesses in a country. Data on entrepreneurship is obtained from the Global Entrepreneurship Monitor (GEM), which conducts comprehensive surveys to collect data on entrepreneurial activities worldwide. The variable “Nascent Entrepreneur” is the one used in the current study, representing the number of adults (18-64 years old) per 100 involved in nascent business. This variable captures individuals who are actively engaged in starting new businesses and excludes those who have been paying salaries or wages for over three months.

Excluding individuals who have been paying salaries or wages for over three months from the variable “Nascent Entrepreneur” is a construction decision made by the Global Entrepreneurship Monitor (GEM) to ensure the accuracy and consistency of their measurement of entrepreneurial

¹ Please refer to Appendix 1 for a comprehensive list of the countries that participate in the GEM and are included in the present analysis.

activity. GEM acknowledges that individuals who have surpassed the threshold of paying salaries or wages for an extended period have progressed beyond the nascent stage and are categorized as recent entrepreneurs. The rationale behind this exclusion is rooted in their aim to capture the early stages of entrepreneurial activity. By excluding recent entrepreneurs who have already established more mature businesses, GEM can provide insights into the potential for new business formation and growth. This distinction allows for a clear differentiation between individuals actively involved in starting a new business and those who have already transitioned beyond the initial startup phase.

3.2 Culture variables

Apart from the startup rate, the “Entrepreneurial Framework Conditions” section of the GEM database is explored to understand the national context of entrepreneurial ventures. The “Culture and Social Norms” subsection provides valuable insights into respondents’ perceptions and attitudes towards entrepreneurs and business involvement. Previous research (Davidsson & Honig, 2003; Hofstede, 1984; Liñán & Chen, 2009; Shane & Venkataraman, 2000) has shown a correlation between cultural factors and entrepreneurship, emphasizing the influence of cultural norms and values on entrepreneurial behavior. The GEM survey includes specific questions that shed light on cultural elements impacting entrepreneurship.

For instance, questions such as:

- “In my country, the national culture is highly supportive of individual success achieved through own personal efforts” (the term “***Individual Success***” will be used to refer to this variable),
- “In my country, the national culture emphasizes self-sufficiency, autonomy, and personal initiative” (***Self-Sufficiency***), and
- “In my country, the national culture emphasizes the responsibility that the individual (rather than the collective) has in managing his or her own life” (***Individual Responsibility***),

provide valuable insights into the cultural elements that shape entrepreneurial activities. The answers to these questions are the proxies (variables) employed to operationalize/include culture into the empirical analysis. Global Entrepreneurship Monitor (GEM) employs a five-point scale. This scale is used to provide answer to this questions and ranges from “1 = completely false” to “5 = completely true.”

The use of cultural dimensions, such as those proposed by Hofstede, has been common in empirical studies exploring the relationship between entrepreneurship and culture. One specific dimension frequently examined is Individualism vs. Collectivism, which captures the degree to which individuals prioritize their own interests over collective goals or vice versa as mentioned before. However, the use of specific variables, such as *Individual Success, Self-Sufficiency, and Individual Responsibility*, offers several advantages over relying solely on aggregated cultural dimensions.

These variables provide a focused perspective on cultural attitudes and values, allowing for targeted analysis and interpretation. They reflect individuals' perceptions of their own culture, providing data that reflects their lived experiences and beliefs. This approach aligns with the "emic" perspective, understanding cultural phenomena from within the culture itself. For instance, Shane, Locke, and Collins (2003) argue that an emic perspective allows for a deeper exploration of how cultural factors shape entrepreneurial behavior.

Chapter 4: Empirical Approach

4.1 Model Background

The question of how the cultural emphasis on individual success, self-sufficiency, autonomy, and personal initiative influences the startup rates across middle-income countries emerged from a recognition of the multifaceted nature of entrepreneurship and its relationship with cultural factors. Extensive research has shown that culture plays a significant role in shaping entrepreneurial behavior and outcomes. It influences individuals' attitudes, values, and beliefs, which, in turn, impact their propensity to engage in entrepreneurial activities.

Middle-income countries, characterized by their unique socio-cultural contexts and transitional economies, provide an interesting context for investigating the impact of cultural values on startup rates. By exploring the relationship between cultural emphasis on individual success and autonomy and the startup rate in these countries, we aim to shed light on the role of culture in shaping entrepreneurial dynamics and provide insights that can question policy decisions and entrepreneurial development in these contexts.

The variable of interest (outcome variable) in this analysis is therefore the startup rate. The relationship to be examined is the relationship between the startup rates across middle income countries and the cultural elements. The purpose of this research is to investigate what effects does the cultural elements have on the startup rate.

4.2 Model Approach

Culture is a relatively stable characteristic that does not vary significantly from year to year. It represents a set of values, beliefs, and norms that are deeply rooted within a society and change slowly over time. Significant shifts in cultural norms and values often require longer periods to manifest. Given this characteristic of culture, conducting a time series - cross sectional analysis, which focuses on variation over time, may not be the most appropriate approach. Instead, a cross sectional model is a suitable choice for analyzing the relationship between startup rates and culture in middle-income countries.

A cross sectional analysis allows for the comparison of startup rates and cultural elements across countries. By focusing on the variation between countries rather than within each country over time, this approach effectively exploits the variations in startup rates and culture across middle-income countries. It provides a valuable opportunity to examine the impact of culture on startup rates by comparing countries with varying cultural contexts, thereby gaining insights into the broader relationship between culture and entrepreneurship.

To account for the constant nature of cultural factors, it was decided to average the values for years 2009 to 2019 for each culture variable (***Individual Success, Self-Sufficiency, and Individual Responsibility***). This averaging approach in the cross-sectional study provides a more stable representation of culture, reducing the influence of year-specific fluctuations enhancing the robustness of the analysis. By using the average cultural factor across multiple years, the study ensures a more reliable estimation of the relationship between culture and startup rates in middle-income countries.

4.3 Naive Model

The naive model would therefore be:

$$StartUp Rate_i = \beta Culture_i + MidIncome Country_i + u_i$$

Where:

Mid Income Country: Dummy variable with 1 for Middle Income Countries and 0 for other income groups.

Understanding the relationship between culture and entrepreneurship is challenging due to cultures' inherent complexity (Caprar et al., 2015). The difficulties of operationalizing culture have been addressed by researchers with two approaches: group-level (e.g., country-level) or individual-level characterizations. These approaches being:

1. Characterizing culture as a reflective construct at the group level, often operationalized at the country level, considering culture as a shared characteristic of a particular group or society (Caprar et al., 2015). Hofstede (1980) and others have adopted this perspective.
2. Viewing culture at the individual level, where aggregation is endogenous and associated with shared characteristics such as social or personal orientation. Culture is measured by aggregating individual responses using statistical procedures that identify similarities among responses (Caprar et al., 2015).

Culture is dynamic and influenced by historical, social, and economic contexts. To overcome limitations, our research focuses on three specific variables representing an aggregate cultural dimension (Global Entrepreneurship Monitor). These variables act as proxies, isolating cultural effects. Using specific variables mitigates endogeneity bias and reduces collinearity (Caprar et al., 2015). This approach disentangles individual impacts, enhancing our understanding of how culture influences entrepreneurship.

In a regression analysis, considering potential confounding variables is crucial to account for their influence on both the dependent and independent variables. These variables can lead to spurious correlations and impact the accuracy and validity of coefficient estimates. Therefore, including them as control variables in the regression model is necessary to remove their effects

on the outcome variable and obtain more precise estimates of the relationship between the dependent and independent variables.

In this model, several variables may affect both the startup rate and the cultural variables. By including these variables as controls in the model, we can account for their potential effects and improve the robustness of our analysis. The confounding variables considered significant for this study are:

4.4 Confounding variables

4.4.1 Education

Education is considered within the Entrepreneurial Framework Conditions, specifically in the education subsection. The question “In my country, teaching in primary and secondary education encourages creativity, self-reliance, and personal initiative” represents the control variable of education in the model. Education influences individuals’ knowledge, skills, attitudes, and entrepreneurial behaviors. It plays a crucial role in shaping both the startup rate and national culture. By including education as a control variable, we aim to account for its potential influence on both the startup rate and national culture, as education can shape individuals’ knowledge, skills, attitudes, and entrepreneurial behaviors (Acs et al., 2012).

By acquiring formal education, individuals gain access to resources, networks, and entrepreneurial training, enhancing their entrepreneurial capabilities and increasing their propensity to start new ventures (Acs et al., 2012). Through formal education, individuals are exposed to entrepreneurial role models, entrepreneurial education programs, and entrepreneurial success stories, which can influence their perceptions of entrepreneurship and contribute to the development of an entrepreneurial culture (Autio et al., 2013). Scholars in the field of entrepreneurship and culture have recognized the significance of education as a control variable.

Both the culture and education variables in the Global Entrepreneurship Monitor (GEM) utilize a five-point scale to measure certain attributes or perceptions. This scale ranges from “1 = completely false” to “5 = completely true.”

4.4.2 Globalization

The Globalization Index is included as another control variable in the model. It captures the level of globalization within a country, ranging from 0 to 100, with higher values indicating a higher degree of globalization. Globalization can influence the startup rate by providing increased access to global markets, facilitating international trade, and fostering entrepreneurial opportunities (Audretsch & Keilbach, 2004) It can also impact national culture by exposing individuals to diverse cultural influences, norms, and values from around the world, which may shape their attitudes and behaviors related to entrepreneurship (Aidis et al., 2008; Drori et al., 2009). The Globalization Index used in our study is collected from the Swiss Institute of Technology Zurich and is based on data from 188 countries. The index measures various aspects of globalization, including economic integration, political engagement, technological connectivity, and cultural exchange.

4.4.3 Inequality

The Gini Income Inequality Index is incorporated as a control variable. It measures income inequality within a country, ranging from 0 to 100. Higher levels of income inequality may result in limited access to financial capital and resources for aspiring entrepreneurs from lower-income backgrounds, thereby affecting the overall startup rate (Acs et al., 2004; Carree et al., 2002). Additionally, income inequality can impact national culture by influencing social norms, values, and attitudes towards entrepreneurship and wealth accumulation (Berggren & Bjørnskov, 2012).

4.5 Estimation Model

The resulting model²:

$$\begin{aligned} StartUp Rate_i = & \beta_0 + \beta_1 Culture_i + MidIncome Country_i + Education_i \\ & + Inequality_i + Globalization_i + u_i \end{aligned} \quad (1.2)$$

This approach captures the dynamics of the relationship between entrepreneurship, culture, and control variables between countries. It allows for the examination of cross-sectional variations. Summary statistics of the data are presented in Table 1.

² Average values for the control variables were also employed.

Table 1.

Statistic	Mean	St. Dev.	Min	Max
Middle Income Countries				
StartUp Rate.	8.6	6.1	0.8	29.0
National culture is highly supportive of individual success.	3.1	0.5	2.0	4.2
National culture emphasizes self-sufficiency, autonomy, and personal initiative.	2.9	0.4	1.8	4.1
National culture emphasizes the responsibility that the individual (rather than the collective) has in managing his or her own life.	2.9	0.4	1.4	4.0
Education.	2.1	0.4	1.1	3.4
Inequality.	42.0	7.0	26.8	63.4
Globalization.	65.0	7.2	42.8	81.4
Other Income Groups				
StartUp Rate.	6.3	3.8	1.2	27.5
National culture is highly supportive of individual success.	3.0	0.6	1.7	4.5
National culture emphasizes self-sufficiency, autonomy, and personal initiative.	2.9	0.6	1.7	4.7
National culture emphasizes the responsibility that the individual (rather than the collective) has in managing his or her own life.	2.9	0.6	1.6	4.4
Education.	2.2	0.5	1.2	3.9
Inequality.	33.4	5.9	23.2	55.6
Globalization.	79.4	10.2	34.5	91.3

Descriptive statistics by income group based on the Global Entrepreneurship Monitor, Swiss Institute of Technology Zurich and The World Bank's data. The data encompasses observations from the years 2009 to 2019. Culture variables (*Individual Success, Self-Sufficiency, and Individual Responsibility*) are the average of each variable for all the years accounted in the study.

As previously mentioned, the three variables used to proxy culture can be viewed as different expressions or manifestations of the broader cultural dimension of Individualism versus Collectivism. Combining all three variables in a single model would assume the ability to hold the other two constant, which may not accurately reflect the complex nature of cultural dynamics. The presence of one variable can influence the manifestations of the others, and assuming independence can lead to misleading conclusions if combined in the same model.

To address this issue and ensure a more accurate representation of the effects of culture, separate models for each specific variable are specified. By isolating each variable within its own model, we can better explore its individual contributions and nuances within the context of culture. This approach allows for a more comprehensive examination of the unique effects of each variable, while also acknowledging that each represent different elements of culture.

$$\begin{aligned} Startup\ Rate_i = \beta_0 + \beta_1 Individual\ Success_i + MidIncome\ Country_i \\ + Education_i + Inequality_i + Globalization_i + u_i \end{aligned} \quad (1.3)$$

$$\begin{aligned} Startup\ Rate_i = \beta_0 + \beta_1 SelfSufficiency_i + MidIncome\ Country_i \\ + Education_i + Inequality_i + Globalization_i + u_i \end{aligned} \quad (1.4)$$

$$\begin{aligned} Startup\ Rate_i = \beta_0 + \beta_1 Individual\ Responsibility_i + MidIncome\ Country_i \\ + Education_i + Inequality_i + Globalization_i + u_i \end{aligned} \quad (1.5)$$

4.6 Limitations

While the data and variables offer valuable insights into entrepreneurial dynamics and cultural factors, there are limitations to consider. Relying on data from the Global Entrepreneurship Monitor (GEM) introduces potential limitations due to self-reported responses that could be biased or contribute to a self-selection bias, however the GEM introduces specific quality controls to ensure reliability. Furthermore, it is important to acknowledge that the model employed may not capture the full complexity of the relationship between culture and startup rates. Culture is a multifaceted concept that encompasses various dimensions, including values, beliefs, norms, and social structures. The reliance on a limited set of cultural indicators or proxies within the model may overlook important nuances and heterogeneity within cultural contexts, potentially resulting in an incomplete understanding of the relationship between culture and startup rates.

Moreover, the generalizability of the findings should be approached with caution. The study specifically focuses on middle-income countries, and the results may not be directly applicable to other income groups. Cultural factors and their impact on startup rates can exhibit significant variation across different contexts, such as high-income or low-income countries, as well as within the diverse cultural landscape of middle-income countries themselves. Finally, the multifaceted nature of entrepreneurship presents the challenge of omitted bias, as certain influential variables may not be fully recognized and included in the analysis.

4.7 Robustness Checks

In order to evaluate the reliability of our models we proceed to perform the respective tests to confirm the veracity of our assumptions and thus the confidence of our results. Our models are based on the assumption of a linear relationship between the startup rate and the cultural element under consideration. To evaluate the validity of this assumption, we conducted an analysis of the residuals versus the fitted values. This examination aimed to identify any discernible patterns or deviations from the expected behavior. Our analysis revealed that there were no evident patterns present for any of the models, and overall, the values were around zero. These findings provide evidence to confirm the existence of a strong enough linear relationship between the cultural element and the startup rate, thereby validating our models.

In order to ensure the robustness of our analysis, we conducted additional checks by incorporating various control variables beyond those initially included to account for the confounding effects. These additional controls encompassed factors such as GDP per capita, trade openness, and political stability. The purpose of including these variables was to assess their potential impact on the relationship between the cultural elements and the outcome variable. After running the models with the additional controls, we examined the results to determine if there were any significant changes in the observed relationships. To our satisfaction, no substantial changes were observed when these variables were included in the model. This outcome provides strong evidence for the reliability and stability of our current model. The lack of significant changes suggests that the cultural variables under investigation retain their explanatory power even when accounting for the influence of other factors.

As a last check, all three elements representing the cultural dimension were integrated into a single model. This comprehensive model aimed to examine the collective influence of these elements as proxies of culture, on the outcome variable. By running this model, we sought to determine whether the relationships observed in the three separate models were consistent and remained valid when considering all elements simultaneously. The results align with those obtained from the three separate models, indicating a consistent pattern of coefficients that point in the same directions. This outcome provides further confirmation of the reliability of our independent models. The fact that the coefficients exhibit consistent trends across models underscores the validity of our findings.

Chapter 5: Analysis and Results

5.1 Results

The results section delves into the findings of the models specified in equations (1.3), (1.4) and (1.5), which serves as the analytical framework for investigating the effects of cultural variables on the startup rate. This section provides an introductory overview of the key outcomes derived from the estimation process. Table 2 provides the results for each model.

One aspect worth highlighting is the incorporation of control variables to address confounding effects in the analysis. A naive model for each variable was created without any control variables to establish a baseline understanding of the relationship between the cultural variables and the outcome. When introducing the control variables, there was a substantial increase in the R-squared value and significance of the model. The approximately 30% increase in the R-squared value and significance of the p-value emphasizes the value and significance of incorporating these control variables to enhance the explanatory power of the models and internal validity. This substantial increase demonstrates the effectiveness of including these control variables in the model so results can reflect the actual relationship being explored.

Table 2.

	Outcome variable		
	StartUp Rate (t)		
	Individual Success	Self Sufficiency	Individual Responsibility
Individual Success	1.167*** (0.395)		
Self Sufficiency		1.016** (0.429)	
Individual Responsibility			1.746*** (0.463)
Middle Income Country	-2.734*** (0.645)	-2.624*** (0.648)	-2.647*** (0.641)
Education	1.290*** (0.463)	1.205** (0.505)	0.879* (0.492)
Inequality	0.181*** (0.034)	0.196*** (0.033)	0.174*** (0.033)
Globalization	-0.237*** (0.033)	-0.233*** (0.033)	-0.245*** (0.033)
R ²	0.347	0.342	0.355
F Statistic (df = 5; 418)	44.509***	43.581***	46.166***
Number of observations	105	105	105

Note:

* p < 0.1 ** p < 0.05 *** p < 0.01

R estimations based on the mentioned models. Each column represents one independent model for each culture element. Standard errors are reported in parentheses. *, **, *** indicates significance of coefficients at the 90%, 95%, and 99% level, respectively.

The coefficient estimates reveal insights into the impact of these cultural elements on the StartUp Rate. Starting with the Individual Success model, the coefficient estimate of 1.167*** (p < 0.01) indicates a positive and significant relationship between Individual Success and the StartUp Rate. This suggests that in countries where the national culture is highly supportive of individual success achieved through personal efforts, there tends to be a higher startup rate. The Self-Sufficiency model shows a positive and significant relationship (coefficient estimate: 1.016**).

This implies that countries emphasizing self-sufficiency and personal initiative have a higher likelihood of a higher startup rate. The Individual Responsibility model (coefficient estimate: 1.746***) suggests that countries emphasizing individual responsibility in managing one's life are more likely to have a higher propensity for entrepreneurial activity.

Controlling for other factors, such as Middle Income Country, Education, Inequality, and Globalization, we find that these variables also have significant effects on the StartUp Rate. For example, Middle Income Country has a negative association with the StartUp Rate. The coefficient estimates for Inequality and Globalization show significant relationships with the StartUp Rate as well.

Inequality has a positive association with the StartUp Rate, with coefficient estimates of 0.181*** ($p < 0.01$) for Individual Success, 0.196*** ($p < 0.01$) for Self-Sufficiency, and 0.174*** ($p < 0.01$) for Individual Responsibility. Suggesting that higher levels of inequality are associated with a higher startup rate. On the other hand, Globalization has a negative association. The coefficient estimates for Globalization are -0.237*** ($p < 0.01$) for Individual Success, -0.233*** ($p < 0.01$) for Self-Sufficiency, and -0.245*** ($p < 0.01$) for Individual Responsibility. This indicates that increased globalization is associated with a lower startup rate.

The results from Table 2 provide strong confirmation that education indeed has a significant influence on startup rates. The positive coefficients associated with education across all three models (individual success, self-sufficiency, and individual responsibility) indicate that higher levels of education positively impact the likelihood of startups. Education equips aspiring entrepreneurs with the tools and resources needed to identify opportunities, develop innovative ideas, and effectively execute their business plans. Moreover, education cultivates a sense of self-sufficiency and instills a strong sense of responsibility, both of which are essential qualities for entrepreneurial success. These results highlight the importance of investing in education as a means of fostering an environment that nurtures and supports startups, ultimately contributing to economic growth.

The R-squared values provide insights into the explanatory power of the models. The R-squared values for the three models range from 0.342 to 0.355, indicating that the cultural elements and other control variables explain approximately 34% to 36% of the variation in the StartUp Rate. The F-statistics are also significant for all three models, indicating that the regression results are

statistically significant and reliable. Finally, the significance of the coefficients of the variables of interest leads us to conclude that there is strong evidence that the coefficients in this model are **not** zero. This further supports the validity of the models and the relationships observed.

5.2 Analysis

5.2.1 Culture and Start Up Rate

In the Individual Success model, the presence of a significant and positive relationship between the explanatory variable (Individual Success) and the outcome variable (Start Up rate) suggests that countries with a cultural emphasis on individual success achieved through personal efforts tend to have a higher startup rate. This implies that cultural environments that value and support individual achievement may cultivate an entrepreneurial mindset and encourage individuals to pursue their own business ventures. The effects of this results on the Start Up rate can be interpreted such that a culture that promotes and rewards individual success fosters an environment conducive to entrepreneurial behavior. This aligns with those results of Davidsson and Honig (2003), Hofstede (1984), Liñán and Chen (2009), and Shane and Venkataraman (2000) who have emphasized that individuals in such cultural contexts are more likely to develop entrepreneurial traits such as motivation, confidence, and risk-taking propensity.

The positive and significant relationship between self-sufficiency and the startup rate in the Self-Sufficiency model suggests that countries placing emphasis on self-sufficiency and personal initiative tend to have a higher likelihood of a higher startup rate. This finding can be understood through the lens of cultural values and norms that promote autonomy, individual agency, and self-reliance. When a society values self-sufficiency, it fosters an environment where individuals are encouraged to rely on their own capabilities, take initiative, and pursue their entrepreneurial aspirations. Individuals in such cultural contexts may feel more empowered to explore new opportunities, take calculated risks, and overcome challenges associated with starting and running their own businesses. The cultural emphasis on autonomy and self-reliance may contribute to a mindset that embraces entrepreneurship as a means to achieve personal success and fulfilment.

This result is consistent with previous research conducted by Davidsson and Honig (2003), who examined the relationship between cultural factors and entrepreneurship. Their findings highlighted the influence of cultural norms and values, such as self-sufficiency, on entrepreneurial behavior. The present study's findings further support the notion that culture plays a vital role in shaping entrepreneurial dynamics, with self-sufficiency serving as a significant cultural element associated with higher startup rates.

The findings from the Individual Responsibility model provide further evidence of the influence of culture on entrepreneurial activity. The significant and positive relationship between individual responsibility and the propensity for entrepreneurial pursuits indicates that countries that prioritize individual responsibility in managing one's life tend to have a higher likelihood of engaging in entrepreneurial activities.

In cultural contexts where individual responsibility is emphasized, individuals are encouraged to take ownership of their actions, decisions, and outcomes. This cultural value promotes a sense of personal accountability and self-determination, which aligns with the entrepreneurial mindset. Entrepreneurs often need to take risks, make independent decisions, and take full responsibility for the success or failure of their ventures. In societies that value individual responsibility, individuals may be more inclined to embrace the challenges and uncertainties of entrepreneurship, leading to a higher propensity for entrepreneurial pursuits.

Results confirm our hypothesis and indicate a positive relationship between cultures that place a high value on individual success, self-sufficiency, and individual responsibility, and the startup rate. However, the results also point to the fact that it is important to recognize that culture alone is not enough to develop a high entrepreneurial environment. While cultural elements can shape entrepreneurial mindsets and motivations, the economic context and supporting conditions are vital to translating cultural values into tangible business outcomes.

5.2.2 Start Up Rates in Middle Income Countries

The negative relationship between Middle Income Country and the StartUp Rate can be understood in the context of several factors. Middle-income countries often face specific challenges that hinder entrepreneurial efforts. These challenges may include limited access to financial resources, regulatory barriers, or an underdeveloped entrepreneurial ecosystem. These

circumstances can create a less favorable environment for entrepreneurial activities to thrive, resulting in a lower startup rate.

Research conducted by Acs, Z. J., Estrin, S., Mickiewicz, T., and Szerb, L. (2018) has highlighted the importance of economic development and income level in influencing the entrepreneurial landscape. Limited access to financial resources is a prominent challenge, as these countries often have less developed financial markets and a scarcity of available capital for aspiring entrepreneurs. Additionally, middle-income countries may have complex regulatory frameworks, bureaucratic procedures, and higher administrative burdens, creating barriers for entrepreneurial activities.

Furthermore, middle-income countries may have an underdeveloped entrepreneurial ecosystem compared to higher-income counterparts. This ecosystem encompasses the supporting infrastructure, networks, and institutions for fostering a high entrepreneurial environment. In middle-income countries, the ecosystem may be less mature and lack crucial support mechanisms such as mentoring programs, business incubators, and access to knowledge and expertise. The absence of a conducive ecosystem further contributes to the lower startup rates in these countries.

Nonetheless, our results may suggest that Middle Income Countries encounter potential opportunities for entrepreneurship and startups, as indicated by the coefficients related to inequality and globalization. This is because, despite the challenges and limitations often associated with middle-income status, these countries exhibit certain special characteristics that can be conducive to foster entrepreneurial activity.

5.2.3 Opportunities in Middle Income Countries

The positive association between inequality and the StartUp Rate highlights an interesting relationship between income inequality and entrepreneurial activity. The findings suggest that countries with higher levels of income inequality tend to exhibit a greater inclination towards entrepreneurial endeavors. This aligns with theories proposed by Acs (2006) that emphasize how income inequality can serve as a catalyst for entrepreneurial opportunities.

One possible explanation for this relationship is that individuals in societies with significant income disparities may face limited access to traditional employment opportunities or face socioeconomic barriers that hinder their upward mobility. In response, some individuals may choose to pursue entrepreneurship as a means to overcome economic disparities and achieve self-employment. The entrepreneurial path offers the potential for individuals to create their own opportunities, use their skills and resources, and potentially improve their socioeconomic status.

The negative association between globalization and the StartUp Rate suggests that as countries become more integrated into the global economy, there might be a dampening effect on entrepreneurial activity. This finding has particular relevance for middle-income countries, which typically have lower levels of globalization compared to high-income countries. Middle-income countries often face market deficiencies and have untapped potential for entrepreneurship. With lower levels of globalization, they may have fewer trade barriers and greater opportunities to offer unique products and services. These countries can create new markets by leveraging their local resources, cultural assets, and addressing the specific needs of their domestic markets.

While globalization can bring benefits such as access to larger markets, technology transfer, and investment opportunities, it also introduces challenges for new firms. Increased competition and market saturation can make it harder for startups to gain a foothold and compete against established multinational corporations. Middle-income countries, with their relatively lower levels of globalization, may be shielded from some of these challenges, allowing local entrepreneurs to seize opportunities and fill market gaps. Furthermore, middle-income countries often have a growing consumer base with changing demands, presenting fertile ground for entrepreneurial ventures. These countries may have emerging middle-class populations seeking new products and services, which can be more effectively addressed by local entrepreneurs who have a better understanding of the local context and cultural nuances.

The findings align with the research conducted by Acs et al. (2017), which emphasizes the complexities of globalization and its impact on entrepreneurship. While globalization can be beneficial for economic growth, it is important to consider the unique circumstances and opportunities available to middle-income countries. Their lower levels of globalization can provide a favorable environment for entrepreneurial activity by allowing local entrepreneurs to

identify market gaps, develop innovative solutions, and cater to the specific needs of their domestic markets.

5.2.4 Implications for research

While the role of culture in shaping entrepreneurial dynamics is undoubtedly significant, it is essential to critically reflect on the impact and limitations of this research.

Currently, research on entrepreneurship often overlooks the role of inequality and globalization in shaping entrepreneurial dynamics. However, the present study highlights the importance of understanding these dynamics and their implications for entrepreneurial opportunities. Findings demonstrate that middle-income countries, despite their challenges and limitations, offer potential unique opportunities for entrepreneurship and startups. By considering the positive association between income inequality and the StartUp Rate, researchers can further explore how income disparities can motivate individuals to pursue entrepreneurship as a means of overcoming economic inequalities. This opens the door for investigating the specific mechanisms through which income inequality influences entrepreneurial activity, such as access to resources, social networks, and support systems.

Additionally, the negative association between globalization and the StartUp Rate underscores the need to examine the effects of global integration on entrepreneurial endeavors. Researchers can explore the relationships between globalization, trade barriers, and entrepreneurial activity in middle-income countries and other income groups. For instance, investigating how lower levels of globalization enable these countries to create new markets, leverage local resources, and develop unique products and services. Moreover, researchers can explore the challenges posed by globalization, such as increased competition and market saturation, and how middle-income countries navigate these obstacles to foster entrepreneurial growth.

It should always be acknowledged that culture is a complex and multifaceted construct. It encompasses a wide range of beliefs, values, norms, and practices that vary across regions, subcultures, and even within individuals. The existing research on culture and entrepreneurship often relies on broad cultural dimensions or national-level indicators, which may oversimplify the intricate nuances and diversity within cultures. The effects of culture can vary within a single country or region, and there may be subcultures or minority groups with different entrepreneurial

dynamics that are not adequately captured in the analysis. The majority of research on culture and entrepreneurship has focused on high-income countries or specific regions, neglecting the unique cultural dynamics and entrepreneurial ecosystems of low- and middle-income countries. Cultural values and norms may have distinct manifestations and implications for entrepreneurship in diverse cultural and economic contexts.

Furthermore, research often assumes a unidirectional relationship between culture and entrepreneurship, implying that culture solely determines entrepreneurial outcomes. However, it is essential to recognize that entrepreneurship itself can also influence and re-shape the entrepreneurial culture. Entrepreneurial activities, innovations, and success stories can reshape cultural values, attitudes, and perceptions towards entrepreneurship within a society. Future research could explore the bidirectional relationship between entrepreneurship and culture to gain a more comprehensive understanding.

Chapter 6: Conclusions

In conclusion, understanding startup dynamics, culture, and entrepreneurship is vital for various stakeholders, including researchers, policymakers, and business leaders. Startups serve as catalysts for economic growth, job creation, and technological advancement. They inject innovation, disrupt traditional industries, and drive productivity, ensuring that economies remain dynamic and forward-thinking. This importance is particularly pronounced for middle-income countries, which face unique challenges and opportunities on their path to economic development.

Culture emerges as a crucial factor in shaping entrepreneurial dynamics within middle-income countries. It exerts a profound influence on individuals' mindset, motivations, perception of entrepreneurship, and utilization of available resources and support systems. Cultural values and norms significantly impact how individuals perceive opportunities, view risk-taking, and define success. Cultures that emphasize individual achievement through personal efforts tend to foster an entrepreneurial mindset, motivating individuals to pursue entrepreneurial ventures. Additionally, societal attitudes towards entrepreneurship shape career choices and aspirations, with cultures that highly esteem entrepreneurship witnessing higher levels of entrepreneurial activity.

Furthermore, culture plays a pivotal role in shaping the relationship between entrepreneurs and society at large. Cultural values shape societal expectations, norms, and regulations concerning entrepreneurship, thereby influencing the types of ventures that emerge and how entrepreneurs engage with stakeholders and communities. The perception of entrepreneurship as a means of creating social value or accumulating personal wealth varies across cultures, leading to diverse focuses and impacts of entrepreneurial endeavors.

The influence of culture is even more important in countries that do not have well-developed structures or tools to foster an entrepreneurial ecosystem because it is culture that will shape individuals' mindsets and attitudes that will help overcome these challenges. Considering the impact of inequality and globalization, it becomes apparent that culture acts as a mediator, shaping the effects of these factors on entrepreneurial activity. Cultural factors, influenced by income inequality, can motivate individuals to pursue entrepreneurship as a means of addressing economic disparities. Conversely, cultures that stigmatize failure or perceive entrepreneurship as risky may hinder entrepreneurial activity, particularly in contexts characterized by high income inequality. Additionally, the level of globalization interacts with cultural elements, affecting entrepreneurial dynamics. While globalization offers benefits like access to larger markets and technology transfer, it also presents challenges such as increased competition and market saturation that can impede entrepreneurial endeavors. Cultures, in conjunction with the level of globalization, play a vital role in guiding middle-income countries' navigation of these challenges and in creating an environment conducive to fostering entrepreneurial growth.

Recognizing the influence of culture on entrepreneurial dynamics in middle-income countries provides valuable insights for policymakers and business leaders seeking to cultivate entrepreneurial ecosystems and drive economic progress. By understanding the multifaceted role of culture, stakeholders can leverage cultural strengths, address cultural barriers, and design effective strategies, unlocking the full potential of entrepreneurship in middle-income countries in the startup scene.

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Appendix.

1	United States	2	Russia	3	South Africa
4	Greece	5	Netherlands	6	Belgium
7	Spain	8	Hungary	9	Italy
10	Switzerland	11	United Kingdom	12	Denmark
13	Norway	14	Germany	15	Peru
16	Argentina	17	Brazil	18	Chile
19	Colombia	20	Malaysia	21	Tunisia
22	Uganda	23	Iceland	24	Finland
25	Latvia	26	Serbia	27	Croatia
28	Slovenia	29	Bosnia and Herzegovina	30	Guatemala
31	Panama	32	Venezuela	33	Ecuador
34	Uruguay	35	Tonga	36	Dominican Republic
37	Hong Kong	38	Jamaica	39	Syria
40	Saudi Arabia	41	United Arab Emirates	42	Israel
43	South Korea	44	France	45	Japan
46	China	47	Iran	48	Egypt
49	Sweden	50	Mexico	51	Turkey
52	Pakistan	53	Ghana	54	Angola
55	Zambia	56	Portugal	57	Ireland
58	Montenegro	59	Macedonia	60	Costa Rica
61	Bolivia	62	Trinidad & Tobago	63	Taiwan
64	Algeria	65	Australia	66	Poland
67	Singapore	68	Thailand	69	Nigeria
70	Barbados	71	Lithuania	72	Czech Republic
73	Slovakia	74	Bangladesh	75	Romania
76	Austria	77	Ethiopia	78	Namibia
79	Malawi	80	Botswana	81	Estonia
82	El Salvador	83	India	84	Indonesia
85	Philippines	86	Vietnam	87	Canada
88	Libya	89	Luxembourg	90	Suriname
91	Puerto Rico	92	Burkina Faso	93	Cameroon
94	Belize	95	Kazakhstan	96	Qatar
97	Georgia	98	Morocco	99	Lebanon
100	Senegal	101	Bulgaria	102	Jordan
103	Cyprus	104	Madagascar	105	Kuwait