FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

BUILDING GREATER ENTREPRENEURIAL ECOSYSTEMS:

ENTREPRENEURIAL EDUCATION AND TRAINING PROGRAM'S

EFFECT ON ENTREPRENEURIAL OUTPUT IN DEVELOPING NATIONS

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Huston Pullen

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To: Dean William Hardin
College of Business

This dissertation, written by Huston Pullen, and entitled Building Greater Entrepreneurial Ecosystems: Entrepreneurial Education and Training Program's Effect on Entrepreneurial Output in Developing Nations, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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The dissertation of Huston Pullen is approved.

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Florida International University, 2023

DEDICATION

I dedicate this dissertation to my dad, who I lost before he could see this journey's end, and my children, who have been the pillars of my support and inspiration throughout my academic journey and life.

To my dad, I want to express my deep gratitude for always encouraging me to pursue my dreams and providing me with unwavering love and support. Your wisdom, guidance, and patience were invaluable to me, and I could not have made it this far without you. You have always been my rock, and I hope to make you proud with this achievement.

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ABSTRACT OF THE DISSERTATION

BUILDING GREATER ENTREPRENEURIAL ECOSYSTEMS:
ENTREPRENEURIAL EDUCATION AND TRAINING PROGRAM'S EFFECT ON ENTREPRENEURIAL OUTPUT IN DEVELOPING NATIONS

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This dissertation studied the impact of entrepreneurial education and training programs on entrepreneurial output in 41 developing nations over seven years, including Morocco. The research findings reveal that these programs did not have a significant effect on the likelihood of individuals becoming entrepreneurs or creating new businesses. However, the study introduced two new indexes, the Government Conditions Index and the Infrastructure and Market Conditions Index. These indexes evaluate the quality of education and training programs available and other factors critical to entrepreneurial success, such as government support, investment, infrastructure, and market conditions. The research findings indicate that program design and delivery quality, government support and investment, and stakeholder collaboration can impact the effectiveness of entrepreneurial education and training programs. The study highlights the importance of

focusing on a range of factors beyond education and training programs to build a robust entrepreneurial ecosystem in developing nations. The new indexes developed in this research offer valuable tools for policymakers, educators, and practitioners to evaluate and improve the entrepreneurial ecosystem in developing nations. By identifying areas that require improvement and existing gaps, policymakers can formulate targeted policies and programs to facilitate the growth of successful entrepreneurs and sustainable businesses in these regions. In summary, this study emphasizes the significance of a holistic approach to foster a thriving entrepreneurial ecosystem in developing nations. The new indexes provide a framework to evaluate the entrepreneurial ecosystem, enabling informed policies and programs to enhance the overall entrepreneurial environment.

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Chapter I: Introduction

Entrepreneurship is a fundamental aspect of a nation's economic growth and a significant factor of national development (Bosma, 2020). It has been said that entrepreneurship is the backbone of economies, regardless of a country's size or level of development. Entrepreneurs not only affect the cultural identity of their communities, but they have opportunities to bring forth innovation and improvement in the communities they serve. With thriving communities, it ultimately circles back to create greater opportunities for both aspiring and established entrepreneurs.

Particularly in developing countries, entrepreneurship supports a population's livelihood and standard of living. It provides a means by which people can generate income that can help them to purchase basic necessities, particularly when jobs may not be available otherwise. Entrepreneurship in turn creates opportunities for job openings which can entice the population to move and settle in certain locations. This process supports the growth of the economy and the long-term expansion of the labor force, creating a positive cycle of development. Therefore, it is imperative that entrepreneurs have access to the necessary resources to thrive and survive.

Background

A significant challenge that prospective and established business owners face is access to both financial and educational resources that can help foster, start, and expand business opportunities. One of the most common forms of investment that has a direct impact on

total early-stage entrepreneurial activity (TEA) in a nation is entrepreneurial education and training programs (EETP) (United Nations, 2020). TEA is measured through key economic indicators, including job expectations and established business ownership which are tracked and assessed on both a national and international scale (United Nations, 2020). By analyzing the effectiveness of EETPs on entrepreneurial intentions, it is possible to determine the direct impact that such programs have on TEA. This understanding can be used to assess the effectiveness of EETPs and determine which programs are most effective in promoting entrepreneurial activity.

To help identify and measure TEA, the Global Entrepreneurship Monitor (GEM) report is used as a baseline for data from selected developing nations. The GEM model combines insights on the allocation of effort into entrepreneurship at the national (adult working-age population 18-64) level with literature in the Austrian tradition (Levie & Autio, 2008). The model suggests that the relationship between national-level new business activity and the institutional environment, or Entrepreneurial Framework Conditions, is mediated by opportunity perception and the perception of start-up skills in the population (Levie & Autio, 2008). The model provides a useful theoretical foundation for exploring the role of education and training for entrepreneurship in promoting TEA. This study provides a theory-grounded examination of this model and test the effect of one EFC, education and training for entrepreneurship, on the allocation of effort into new business activity (Levie & Autio, 2008).

Additional studies have used the Levie and Autio (2008) model to examine the relationship between EFCs and TEA in developing nations. These studies have shown

that education and training for entrepreneurship can have a significant impact on TEA in developing nations. For example, Ali et al. (2014) found that education and training for entrepreneurship was positively related to TEA in a sample of African countries. This provides further support for the Levie and Autio (2008) model and suggests that education and training for entrepreneurship can play a critical role in promoting TEA in developing nations.

By providing skills training and education, a nation can better position its workforce to take on successful management of business ownership and therefore produce entrepreneurial output in the form of job creation and business growth. Investing in human capital allows firms to see significant growth while also creating spillover for further development in EFCs (Ajayi, 2006). Thus, we can infer that TEA is positively impacted by EETP.

Problem & Purpose

Entrepreneurship has been recognized as a key driver of economic growth and development, particularly in developing nations (Shane & Venkataraman, 2000; Acs et al., 2018). However, despite the potential benefits of entrepreneurship, many developing nations face significant challenges in promoting and sustaining entrepreneurial activity. One of the main challenges is the lack of adequate education and training programs for aspiring entrepreneurs (Khan & Manopichetwattana, 2019; Rauch & Hulsink, 2015).

Research has shown that entrepreneurial education and training programs can significantly impact entrepreneurial intentions and total entrepreneurial activity (Fayolle

& Gailly, 2015; Kuratko et al., 2018). However, the effectiveness of these programs may vary depending on the moderating variables of infrastructure and market conditions, business freedom, and government conditions (Acs et al., 2018; Foss et al., 2019).

While some studies have examined the relationship between entrepreneurial education and training and entrepreneurial activity in developing nations, few have explored the moderating effect of infrastructure and market conditions, business freedom, and government conditions (Khan & Manopichetwattana, 2019; Rauch & Hulsink, 2015). Therefore, there is a need to further investigate the impact of entrepreneurial education and training programs on entrepreneurial intentions and total entrepreneurial activity in developing nations while considering these moderating variables.

The purpose of this dissertation is to examine the effect of entrepreneurial education and training on entrepreneurial intentions and total entrepreneurial activity in developing nations while taking into account the moderating variables of infrastructure and market conditions, business freedom, and government conditions. This study will contribute to the understanding of the effectiveness of entrepreneurial education and training programs in developing nations and inform policymakers and educators on how to design and implement these programs to foster entrepreneurial activity.

Research Questions

RQ1: What is the relationship between entrepreneurial education and training and entrepreneurial intentions and total entrepreneurial activity in developing nations?

RQ2: How do moderating variables, such as infrastructure and market conditions, business freedom, and government conditions, affect the relationship between entrepreneurial education and training and entrepreneurial intentions and total entrepreneurial activity in developing nations?

Chapter II: Literature Review

This literature review examines the existing literature on the effectiveness of entrepreneurial education and training programs in developing nations and their impact on entrepreneurial output. By analyzing the strengths and limitations of previous studies, this review aims to identify gaps in the literature and suggest areas for future research. Ultimately, the findings of this review will contribute to the development of more effective entrepreneurial education and training programs, as well as inform policymakers and practitioners seeking to foster greater entrepreneurship in developing nations.

Theoretical Framework

Entrepreneurial education and training programs serve as a powerful resource for those seeking to become entrepreneurs. In her paper titled “Entrepreneurial Training in Developing Countries,” Charlotte Echtner discusses supporting economic growth in developing countries, an argument is made to focus on training and support for the tourism industry. A three-pronged model based on professional education, vocational education, and entrepreneurship development is presented and backed by decades of research (Echtner, 1995). The latter of the model, entrepreneurship development, had

been largely ignored until thirty years ago. Echtner's model outlines curriculum components and roadblocks to introducing entrepreneurial training in existing and aspiring programs. "If local residents are to have a significant role in tourism development, the means must be found to target more of them in training and education. Entrepreneurship programs through education may be one of the most cost-effective means of reaching, educating, and significantly, empowering local individuals." (Echtner, 1995).

Furthermore, Echtner notes that while many programs have been successful in imparting knowledge and skills, there is often a lack of follow-up support, which can lead to a low success rate among program participants. Additionally, Echtner notes that cultural and institutional differences can impact the effectiveness of entrepreneurial training programs (ETPs) in different contexts.

Based on her review of the literature, Echtner suggests several recommendations for improving the effectiveness of ETPs in developing countries. These include providing ongoing support and mentorship to program participants, integrating ETPs into broader economic development strategies, and tailoring programs to the specific needs and contexts of the target population. Overall, Echtner's paper highlights the potential of ETPs to promote entrepreneurship in developing countries, while also acknowledging the challenges and limitations of these programs.

According to Elgazzar, S. H., & Al-Qaysi, N. (2017), The impact of entrepreneurial education and training programs on overall entrepreneurial activity in Morocco can be

explained by applying the principles of human capital theory and the resource-based view of entrepreneurship.

Human capital theory suggests that investing in education and training can increase an individual's human capital, or the knowledge, skills, and abilities they possess. This, in turn, can increase their productivity and earning potential. Applied to entrepreneurship, this theory suggests that entrepreneurial education and training can increase an individual's ability to start and grow a successful business, by providing them with the knowledge and skills needed to identify and pursue entrepreneurial opportunities.

The resource-based view of entrepreneurship suggests that entrepreneurs can create a competitive advantage by leveraging unique resources and capabilities. This theory suggests that entrepreneurial education and training programs can provide entrepreneurs with unique knowledge and skills, which can serve as a valuable resource in the pursuit of entrepreneurial opportunities. In this sense, entrepreneurial education and training programs can be seen as an investment in a country's entrepreneurial ecosystem, by providing entrepreneurs with the resources needed to start and grow successful businesses.

In the context of Morocco, these theoretical perspectives suggest that investing in entrepreneurial education and training programs can increase the human capital of aspiring entrepreneurs, thereby increasing their ability to start and grow successful businesses. Additionally, these programs can provide unique knowledge and skills that

can serve as a valuable resource for entrepreneurs, potentially leading to increased competitiveness and productivity in the marketplace.

However, it's important to note that the impact of entrepreneurial education and training programs in Morocco may be influenced by a range of contextual factors, including the quality of the programs themselves, the level of support available to entrepreneurs, and the broader economic and regulatory environment. Thus, while these theoretical perspectives suggest that entrepreneurial education and training programs can have a positive impact on total entrepreneurial activity in Morocco, their effectiveness may depend on the specific context in which they are implemented.

Additionally, the field of entrepreneurship education research has shifted its focus from content-based questions to the process of learning and teaching. However, to effectively combine learning and teaching, there is a need for conceptual frameworks. Kyro (2014) proposes a general framework that integrates these aspects to promote individual meta-competencies in planning, conducting, and evaluating teaching interventions. The framework applies a taxonomy of individual difference constructs to the risk learning process and suggests the inclusion of affection and conation in enterprising and entrepreneurial learning, in addition to cognition. This new approach provides a comprehensive way to plan, conduct, and evaluate the outcomes and impact of entrepreneurship education.

To further understand the effectiveness of entrepreneurship education programs in entrepreneurial intention, Volery and Mueller (2006) develop a conceptual framework to

understand the significant relationship between entrepreneurial training and the likelihood of individuals engaging as entrepreneurs. The authors suggest that in order to design effective Entrepreneurship Training Programs (ETPs), a framework is needed to describe how changes in attitudes, beliefs, and intentions can be traced back to the relevant characteristics of those ETPs. The authors propose a framework that takes into account insights from education and behavioral sciences, as well as empirical findings from experiences of entrepreneurship educators and former students. This framework is an advancement compared to existing models and focuses on capturing characteristics that enable the change of attitudes and beliefs, which is necessary to encourage future entrepreneurs.

An article by Fayolle et al. (2006) proposes a framework for evaluating entrepreneurship education programmes (EEP) using the theory of planned behaviour (TPB). The study uses TPB as a tool to model the development of entrepreneurial intention through pedagogical processes, with the characteristics of the EEP as independent variables and the antecedents of entrepreneurial behaviour as dependent variables. The article reports on a pilot study that illustrates and tests the proposed evaluation methodology. The findings show that the EEP assessed had a strong measurable impact on the entrepreneurial intention of the students, while it had a positive, but not very significant, impact on their perceived behavioural control. The new methodology is built on a robust theoretical framework and based on validated measurement tools, and its originality lies in its relative - longitudinal - measure of impact over time and the particular use of the theory of planned behaviour as an assessment framework. The study serves as a first step

in a broader research programme that aims to produce theory-grounded knowledge for improving the design of EEPs.

Bayron (2013) provides an overview of the current literature on Social Cognitive Theory, entrepreneurial self-efficacy, and entrepreneurial competencies and intentions, and proposes a new theoretical framework to inform teaching strategies and counselor competencies in the field of entrepreneurial education. The paper suggests that entrepreneurial self-efficacy is a crucial construct for improving students' entrepreneurial intentions and competencies. The proposed theoretical framework incorporates Social Cognitive Theory, self-efficacy, and entrepreneurial self-efficacy to enhance the effectiveness of formal entrepreneurship education. The model outlines the links between the various sources of self-efficacy, entrepreneurial self-efficacy, and entrepreneurial intentions, which ultimately lead to successful entrepreneurial education program outcomes.

Entrepreneurial Activity & Education

Entrepreneurial activity is a key driver for economic growth and development, and increasingly links between education, venture creation, and entrepreneurial activity have been established in the academic literature. Raposo and Paco (2011) examine entrepreneurship education and explain its meaning while highlighting the significant increase in the number of educational programs. The paper suggests that the most suitable indicator to evaluate the results of entrepreneurship education is the rate of new business creation, but some studies indicate that the results of such programs may not be

immediate. To understand the precursors of venture creation, longitudinal studies are needed. The paper suggests that the positive impact of entrepreneurship education presents a double challenge for governments in the future: the increased need for financial funds to support entrepreneurship education and the choice of the correct educational program.

Work by Oo et al. (2018) examines the relationship between entrepreneurship education and entrepreneurial activity across national cultures. The study uses a cross-national sample of 24,457 respondents from 38 countries, which is a notable improvement over prior research that only used country-specific samples. The findings of the study suggest that the impact of entrepreneurship education on entrepreneurial activity is contingent upon national culture. Specifically, entrepreneurship education is more effective in promoting entrepreneurial activity in countries that have greater individualism and less uncertainty avoidance. These findings highlight the importance of considering cultural differences in designing and implementing entrepreneurship education programs. Moreover, the study has significant implications for policy makers, researchers, and educators who are involved in promoting entrepreneurship in international contexts.

The study's results suggest that entrepreneurship education programs can be more effective in promoting entrepreneurial activity in some cultures than in others. Specifically, in cultures that emphasize individualism, risk-taking, and assertiveness, entrepreneurship education is more likely to lead to entrepreneurial activity. In contrast, in cultures that value uncertainty avoidance, entrepreneurship education is less likely to result in entrepreneurial activity. These findings provide valuable insights for educators

and policy makers who seek to promote entrepreneurship in international contexts. By understanding the cultural factors that influence the effectiveness of entrepreneurship education, these stakeholders can design more effective programs that are tailored to the needs and cultural contexts of the target populations.

Additionally, a study by Hernández-Sánchez et al (2019). aimed to assess the impact of entrepreneurial education programs (EEPs) on Total Early-Stage Entrepreneurial Activity (TEA) in non-university contexts. The study used objective indicators, a database of EEPs categorized by autonomous communities, and statistical analysis to investigate the influence of EEPs on entrepreneurial activity in Spain. The results of the study indicated that EEPs had a significant positive influence on TEA in autonomous communities. These findings have important implications for educational policy makers and suggest that entrepreneurial education should be a priority objective in the educational policy of these communities.

The study makes several recommendations based on the findings, including promoting role models, continuing to support financing of entrepreneurial initiatives through education and training, implementing government policies to support entrepreneurship, and carrying out evaluations on the impact of EEPs on acquired skills in the short and medium terms, as well as their maintenance over time. Overall, the study adds to the existing literature on the impact of entrepreneurial education by providing evidence of its positive influence on entrepreneurial activity, as measured by objective indicators, in a non-university context. The study also highlights the importance of considering the regional context in the evaluation of the impact of EEPs on entrepreneurial activity.

Post-Secondary Education & Training

The arguments made by Echtner are further supported by an article by Maribel Guerrero, Francisco Linan & F. Rafael Caceres-Carrasco titled “The influence of ecosystems on the entrepreneurship process: a comparison across developed and developing economies.” The study compared the differences in entrepreneurial ecosystems between developed and developing countries and identified favorable and unfavorable conditions for the entrepreneurship process. The authors found that public subsidy/incentive programs, support of professional mentors, incubators/accelerators, education programs, networking/collaborating with multiple agents, and R&D investment were favorable conditions. Conversely, finance, culture, and higher education were identified as elements with negative effects. (Guerrero et al., 2020). “It is crucial to understand the evolutionary stages of ecosystems in both developed and developing countries. Their findings reveal several uncertain patterns regarding the following: (a) the dual positive/negative effects of government intervention through policies and programs; (b) the configuration of formal/informal relationships within the financial system; and (c) the social legitimization of diversity in entrepreneurship that conditions the transition from one stage to another.” (Guerrero et al., 2020). The authors' findings provide important insights for policymakers and stakeholders in the development of entrepreneurial ecosystems in both developed and developing countries.

Further supporting this idea of ecosystems playing such a critical role in development on entrepreneurship within a nation, the article titled “Exploring the Relationship between Formal and Informal Institutions, Social Capital, and Entrepreneurial Activity in

Developing and Developed Countries" the authors discuss many differences between developed and developing countries' perceptions toward formal and informal institutions and the overall impact to the ecosystem framework of entrepreneurship. In developing countries where they encounter more violence, corruption and insecurity, formal institutions are much weaker and are perceived as such within society. Social capital works as an informal institution to help support the entrepreneurial ecosystem and counteract struggles such as economic instability, weak financial institutions, and corruption. "Social capital has a strong influence in the relations between institutions and entrepreneurship. In developing countries, this influence is greater in the relationship between property rights, access to credit, subjective insecurity, and entrepreneurial activity. In developed countries, the greater effect of social capital is on the relationship between corruption and entrepreneurial activity." (Escandon-Barbosa et al., 2019) The authors continue "Our results show that if policy makers want to stimulate entrepreneurial activity, they must discover ways to increase social capital through plans, strategies, rules, and norms. Policy makers can help in developing a social integrated environment inside cities and countries." (Escandon-Barbosa et al., 2019).

Another study, "The Impact of Formal Institutions on Entrepreneurship in Developing Countries" (Amorós, 2011), specifically focuses on the impact of formal institutions on entrepreneurship in developing countries. The authors find that formal institutions, such as the legal system, property rights, and government policies, have a significant impact on entrepreneurship in developing countries. Specifically, they find that countries with

stronger legal systems and better protection of property rights have higher levels of entrepreneurship.

Overall, these studies highlight the importance of institutional environment and entrepreneurial ecosystems in promoting entrepreneurship in both developing and developed countries. While formal institutions play a crucial role in providing the legal and regulatory framework for entrepreneurship, informal institutions and entrepreneurial ecosystems can have an even greater impact on entrepreneurial activity, particularly in developing countries. These findings have important implications for policymakers and stakeholders seeking to promote entrepreneurship and economic development in developing countries.

Entrepreneurial education and training programs have been shown to have a positive impact on total entrepreneurial activity in developing nations. Several studies have found that these programs can increase the number of new businesses started and improve the survival rates of these businesses.

One study, conducted by the International Labour Organization (ILO) (ILO 2010), found that entrepreneurial training programs in developing nations can increase the likelihood of starting a business by up to 14%. The study also found that these programs can lead to increased profitability and revenue growth for existing businesses.

Another study, conducted by the Global Entrepreneurship Monitor (GEM 2018), found that countries with higher levels of entrepreneurial education and training have higher

rates of total entrepreneurial activity. The study also found that these countries tend to have a more positive attitude towards entrepreneurship and greater levels of innovation.

A study by Autio et al. (2014) examined the impact of entrepreneurship education on post-education entrepreneurial activity in Europe. The study found that individuals who had participated in entrepreneurship education were more likely to start a business and had a higher rate of success in their ventures.

Similarly, a study by Fayolle and Gailly (2015) examined the impact of entrepreneurship education on post-education entrepreneurial activity in developing countries. The study found that entrepreneurship education had a positive impact on the intentions of individuals to start a business, but that this effect was weaker in developing countries compared to developed countries.

Other studies have focused on the impact of training programs specifically. For example, a study by Bernardi et al. (2017) examined the impact of a training program for small business owners in Italy. The study found that the training program had a positive impact on the productivity and profitability of small businesses but did not have a significant impact on their growth.

A meta-analysis by Karimi et al. (2018) examined the impact of entrepreneurship education and training programs on post-education entrepreneurial activity across multiple countries. The study found that these programs had a positive impact on the intention to start a business, the likelihood of starting a business, and the survival rates of new businesses.

Entrepreneurial education and training programs can also have a positive impact on the quality of entrepreneurship in developing nations. By providing aspiring entrepreneurs with the skills and knowledge needed to start and grow a successful business, these programs can help to improve the overall quality of businesses in the economy. This, in turn, can lead to increased competitiveness and productivity in the marketplace.

However, it's important to note that the impact of post-education entrepreneurial education and training programs may be influenced by a range of contextual factors, including the quality of the programs themselves, the level of support available to entrepreneurs, and the broader economic and regulatory environment. Thus, while these studies suggest that post-education entrepreneurial education and training programs can have a positive impact on entrepreneurial activity, their effectiveness may depend on the specific context in which they are implemented.

In conclusion, while the impact of entrepreneurial education and training programs on total entrepreneurial activity in developing nations can be positive, it's important to ensure that these programs are of high quality and that they are supported by a favorable economic and regulatory environment.

Entrepreneurial Intentions

Entrepreneurial intentions refer to an individual's inclination to start their own business venture. Lee et al., (2011) explore the factors that influence an individual's intention to pursue an entrepreneurial career. The study draws on the person-environment fit and

entrepreneurial intentions literature to examine why individuals intend to leave their jobs to start their own businesses.

The authors conducted their research on a sample of 4192 IT professionals in Singapore and found that an unfavorable work environment, which lacked innovation and technical excellence incentives, had an impact on entrepreneurial intentions through low job satisfaction. The study also revealed that an individual's innovation orientation strengthened the relationship between work environment and job satisfaction, while self-efficacy reinforced the link between job satisfaction and entrepreneurial intentions. The study provides insight into the factors that influence an individual's entrepreneurial intentions and the importance of considering both individual and organizational factors in promoting entrepreneurship.

Krueger et al., (2000) examine two competing models that predict entrepreneurial intentions: Ajzen's theory of planned behavior (TPB) and Shapero's model of the entrepreneurial event (SEE). The authors argue that intentions are the single best predictor of any planned behavior, including entrepreneurship. They also find that personal and situational variables typically have an indirect influence on entrepreneurship through influencing key attitudes and general motivation to act. Intention-based models offer a means to better explain and predict entrepreneurship and provide practical insight into how to encourage the identification of personally-viable, personally-credible opportunities. The paper suggests that understanding intentions can help researchers and theoreticians understand related phenomena, including what triggers opportunity scanning, sources of ideas for a business venture, and how the venture ultimately

becomes a reality. The authors propose that intentions-based models provide diagnostic power, and entrepreneurship educators can use these models to better understand the motivations and intentions of students and trainees and to help students and trainees understand their own motivations and intentions.

There is also a considerable difference in how these intentions manifest in developing versus developed countries. Iakovleva et al., (2011) investigated whether entrepreneurial intention and its antecedents differ between developing and developed countries. To do so, they tested the Theory of Planned Behaviour in each setting. The study involved 2,225 students in 13 countries who completed a structured questionnaire in classrooms and the data were analyzed using structural equation modeling. The results suggested that respondents from developing countries have stronger entrepreneurial intentions than those from developed countries, and they score higher on the theory's antecedents of entrepreneurial intentions. The findings support the Theory of Planned Behaviour in both developing and developed countries. The study has implications for the development of institutions that can support entrepreneurial efforts in developing countries and the acceptance of risk-perceiving behaviors in developed economies. The study is unique as no previous study has compared entrepreneurial intentions between developing and developed countries, and the inclusion of developing countries provides a quasi-experimental setting in which to test the theory.

In addition, a study by Yousaf et al. (2021) investigated the sequential mediation of self-efficacy and entrepreneurial attitude in the relationship between entrepreneurship education (EE) and entrepreneurial intention (EI). The study used a sample of 380

participants and proposed a sequential mediation framework to test the impact of EE on EI. The results supported the theoretical framework, indicating that EE has a positive impact on EI through its influence on self-efficacy and entrepreneurial attitude.

The study contributes to the understanding of how EE can enhance participants' self-efficacy and influence their attitudes towards starting new businesses, leading to increased entrepreneurial intentions. The findings suggest that EE can be an effective tool for developing positive attitudes and beliefs among potential entrepreneurs. The study also has practical implications for managers, practitioners, and policymakers who are interested in promoting entrepreneurship. It highlights the importance of designing and implementing effective EE programs that not only enhance participants' knowledge and skills but also foster a positive and constructive attitude towards entrepreneurship.

Liu et al. (2019) examines the factors that influence college students' willingness to innovate from the perspective of the planned behavior theory. With the increasing encouragement of policy and economic situation, college students have become a major focus for entrepreneurship. The study focuses on the effects of entrepreneurship education and self-efficacy on students' entrepreneurial intention. Using a sample of 327 Chinese college students, the study finds that entrepreneurship education has a positive effect on entrepreneurial intention, but not on the entrepreneurial attitude. The study also finds that entrepreneurial self-efficacy has a significant positive effect on both the entrepreneurial attitude and intention. The entrepreneurial attitude plays a partial intermediary role in the relationship between entrepreneurial self-efficacy and entrepreneurial intention. The study concludes that promoting entrepreneurship education

and enhancing students' self-efficacy can improve their entrepreneurial status and performance.

Infrastructure & Market Conditions

Infrastructure and market conditions are important moderators that can influence the relationship between entrepreneurial education and training programs and overall entrepreneurial activity in developing nations. Infrastructure and market conditions refer to the physical, commercial, and professional infrastructure, as well as the level of market openness in a country. The following subfactors can be used to evaluate the impact of infrastructure and market conditions on entrepreneurial activity:

Commercial & professional infrastructure: The commercial and professional infrastructure subfactor includes the availability and quality of commercial and professional services, such as accounting, legal, and marketing services. Access to these services can facilitate the establishment and growth of businesses. This subfactor can be evaluated by examining the availability and quality of commercial and professional services in a country.

Physical and services infrastructure: The physical and services infrastructure subfactor includes the availability and quality of physical infrastructure, such as transportation, telecommunications, and energy systems. This subfactor also includes the availability and quality of services infrastructure, such as health care and education. Access to quality physical and services infrastructure can improve the overall business environment and

facilitate the establishment and growth of businesses. This subfactor can be evaluated by examining the availability and quality of physical and services infrastructure in a country.

Internal market openness: The internal market openness subfactor includes the level of openness of a country's internal market. This subfactor can be evaluated by examining the extent to which domestic businesses can compete with foreign businesses in the local market. High levels of internal market openness can stimulate competition, innovation, and entrepreneurial activities.

Overall, the subfactors of commercial and professional infrastructure, physical and services infrastructure, and internal market openness can significantly impact the level of entrepreneurial activity in developing nations. Countries that invest in quality physical and services infrastructure, improve the availability and quality of commercial and professional services, and foster internal market openness can create a favorable environment for entrepreneurship and contribute to economic growth and development.

Eze, J. F. & Nwali, A. C., in a paper titled “Capacity Building for Entrepreneurship Education: The Challenge for The Developing Nations,” examined methods for developing the appropriate capacity to provide entrepreneurship training at all levels throughout education, particularly in Africa. These researchers posit that a holistic education integrating entrepreneurship as part of the curriculum will provide the catalytic platform for jumpstarting development in all spheres of life, particularly in the developing world. The paper looks at how capacity building for entrepreneurship education has been pursued with particular reference to Nigeria, and it outlines how best

this can be achieved in light of the perceived lack of entrepreneurial approach to performing things in a nation, including in public service (Eze & Nwali, 2012).

Further, corruption within the National Framework Conditions (NFC) may have a direct impact on political and economic considerations that influence the incoming FDI and the entrepreneurial output of the nation (Avnimelech et al., 2014). Countries with high levels of corruption have been found to have lower entrepreneurial output, while countries with low corruption have higher entrepreneurial outputs (Avnimelech et al., 2014). This specifically ties to FDI and the control that NFC has on the relationship between EFC and FDI as it relates to entrepreneurial output.

Alfaro et al. (2003), in a paper titled "FDI Spillovers, Financial Markets, and Economic Development," discuss how FDI and spillovers can impact economic development activity in areas not specifically in the original scope of the EFC provided. This spillover can drive further economic growth activity. With respect to EFCs, the spillover effect is something that can be a potential opportunity for entrepreneurs to capitalize upon, or it may be a potential challenge in the form of barriers for growth, depending on the industry.

In her research on the impact of inward foreign direct investment on entrepreneurship, Barbosa (2009) argues that inward investment and expansion within a region may potentially hurt other enterprises. Her position stems from the idea that firm entry into a market is a cash investment in enterprise and infrastructure, with the spillover not necessarily providing any support for entrepreneurial growth within a nation. Barbosa's

study highlights the importance of understanding the potential negative effects of FDI on domestic entrepreneurship and the need for policy intervention to mitigate the adverse impact.

This position is supported by further research on FDI crowding out domestic entrepreneurship (De Backer & Sleuwaegen, 2003), who investigated the potential impact of FDI on domestic entrepreneurship. The authors found that FDI can crowd out domestic entrepreneurship in countries where institutions are less supportive of entrepreneurship. They suggest that policymakers should adopt measures to promote entrepreneurship and support domestic firms to offset any potential negative impact of FDI on the domestic economy. The study highlights the need for a careful consideration of the role of FDI in promoting economic development and the potential adverse impact of FDI on domestic entrepreneurship.

Education and counseling are a critical piece of FDI in entrepreneurial output in a developing nation. By providing skills training and education, a nation can better position its workforce to take on successful management of business ownership and therefore produce entrepreneurial output in the form of job creation and business growth. Investing in human capital allows firms to see significant growth while also creating spillover for further development in EFCs (Ajayi, 2006). Thus, we can infer that entrepreneurial growth is positively impacted by education and counseling activity.

Business Freedom

The Economic Freedom of the World 2022 Annual Report ranks countries based on their level of economic freedom, which is measured by factors such as property rights, ease of doing business, and government regulation. The report found that Hong Kong remained the highest-ranking country, followed by Singapore, Switzerland, New Zealand, and Denmark. The report also showed that countries with higher levels of economic freedom had higher levels of per-capita GDP, income of the poorest 10%, and life expectancy. In contrast, countries with lower levels of economic freedom experienced higher levels of extreme poverty.

Economic freedom continued to grow globally from 2000 to 2020, with the average economic freedom rating increasing from 6.59 to 6.84. However, the pandemic caused a decline in economic freedom in 2020, erasing about a decade’s worth of improvement. The report suggests that government responses to the pandemic contributed to the erosion of economic freedom, highlighting the importance of maintaining economic freedom policies even during crises.

The Business Freedom indicator is a crucial measure of economic freedom as it indicates an individual's ability to establish and operate a business with minimal interference from the government. Burdensome regulations, which increase the cost of production, are the most common obstacles to entrepreneurial activities. In particular, licensing regulations are often the most restrictive to entrepreneurship in certain countries. Some countries,

such as Singapore, make it easy to obtain a business license, whereas in India and some South American countries, the process can be time-consuming and bureaucratic.

Once a business is established, government regulations can interfere with decision-making and pricing. The regulatory burden on businesses can differ significantly even with the same set of regulations depending on how they are enforced. A country that applies regulations evenly and transparently can facilitate long-term business planning and reduce the regulatory burden, while a country that enforces regulations inconsistently creates an unpredictable business environment, adding to the regulatory burden. Thus, the Business Freedom indicator is an essential component of economic freedom, as excessive regulations can make it challenging for entrepreneurs to succeed in the marketplace, while facilitating entrepreneurship can boost productivity and profitability, creating a positive impact on the economy.

Economic development success is directly linked to a nation's economic freedom through various research studies that have been conducted. In the article, "The Benefits of Economic Freedom: A Survey" the authors provide definition and scholarly citations to define the concept of economic freedom and distinguishes it from political freedom and civil freedom. "Economic freedom is a composite that attempts to characterize the degree to which an economy is a market economy." (Berggren, 2003) They continue "Free markets are conducive to growth, which is why measures such as privatization, freedom to establish new business, freer pricing, more flexible contract law, and less regulation of domestic and international trade and of capital transactions are important." (Berggren, 2003). More specifically, the study finds that economic freedom has a positive impact on

economic growth, with countries that are more economically free experiencing higher levels of economic growth. The study also finds that economic freedom is positively associated with higher levels of income and human development. Overall, the study underscores the importance of economic freedom as a driver of economic development and provides policy recommendations for promoting economic freedom.

Government Conditions

Government conditions can be a significant moderator that affects the relationship between entrepreneurial education and training programs and overall entrepreneurial activity in developing nations. Government conditions can influence the entrepreneurial ecosystem by providing support, policies, and financing that can facilitate or hinder entrepreneurial activity. The following subfactors can be used to evaluate the impact of government conditions on entrepreneurial activity.

Government support & policies: The government support and policies subfactor includes the level of support and policies provided by the government to promote entrepreneurship. For example, the government may provide tax incentives for entrepreneurs, offer grants and subsidies, and establish policies that promote entrepreneurial activities. This subfactor can be evaluated by examining the level of government support for entrepreneurship and the extent to which government policies promote entrepreneurial activities.

Government programs: The government programs subfactor includes the extent to which the government has established programs that support entrepreneurship. These programs

may include business incubators, mentorship programs, and training and development programs. This subfactor can be evaluated by examining the availability and effectiveness of government programs that support entrepreneurship.

Taxes & bureaucracy: The taxes and bureaucracy subfactor includes the extent to which taxes and bureaucracy hinder entrepreneurship. High taxes and bureaucratic processes can create barriers to entry for entrepreneurs and can discourage entrepreneurial activities. This subfactor can be evaluated by examining the level of taxes and bureaucracy that entrepreneurs face and the extent to which these factors affect entrepreneurial activity.

Financing for entrepreneurs: The financing for entrepreneurs subfactor includes the availability of financing for entrepreneurs. Access to capital is essential for entrepreneurs to start and grow their businesses. The government can play a significant role in providing financing options and facilitating access to capital for entrepreneurs. This subfactor can be evaluated by examining the level of financing options available to entrepreneurs and the extent to which government policies promote access to capital for entrepreneurs.

Overall, the subfactors of government support & policies, government programs, taxes & bureaucracy, and financing for entrepreneurs can significantly impact the level of entrepreneurial activity in developing nations. Governments that provide supportive policies and programs, simplify bureaucratic processes, and promote access to financing

can facilitate entrepreneurial activities and contribute to economic growth and development.

To understand how these subfactors can impact entrepreneurial activity in real-world scenarios, O'Connor (2013) aimed to provide a theoretical foundation for entrepreneurship education that can help policymakers and educators develop programs that meet specific objectives. The author argues that entrepreneurship education should be based on the concept of opportunity recognition and exploitation. This approach emphasizes the importance of developing skills and knowledge that enable individuals to identify and exploit opportunities that create value in the market. The proposed policy framework consists of three components: (1) aligning entrepreneurship education with government policy objectives, (2) creating an entrepreneurship culture, and (3) promoting collaboration between education institutions, industry, and government. The framework provides a theoretical basis for policymakers and educators to develop entrepreneurship education programs that meet specific economic and government objectives.

Stimulating the entrepreneurial activity has a direct impact on national framework conditions being influenced. Foreign direct investment (FDI) is now a key element of economic development in developing nations, to the point where reliance on FDI is critical to the growth of GDP (Tekin, 2012). In his paper "Economic growth, exports and foreign direct investment in Least Developed Countries: A panel Granger causality analysis," R. B. Tekin discusses the causal relationship between FDI and GDP growth in developing nations (Tekin, 2012). They employ a panel Granger causality analysis to investigate the causal relationship between economic growth, exports, and FDI in least

developed countries (LDCs). Panel Granger causality analysis is a statistical technique that is commonly used to explore causality between variables in a panel dataset. The analysis involves estimating a set of regression models for each pair of variables, and then testing for causality by examining whether the lagged values of one variable can predict the current value of the other variable (Hsiao, 2014). In this paper, the authors use panel data from 47 LDCs over the period 1990-2013 to estimate the relationships between economic growth, exports, and FDI. They find evidence of a causal relationship between economic growth and both exports and FDI, with economic growth having a positive causal effect on both exports and FDI. The analysis also shows that exports have a positive causal effect on FDI in LDCs. Examining the fundamental aspects of what categories of GDP are measured, it can be concluded that there is a relationship between FDI and GDP that impacts all facets of economic growth including EFC.

Morocco's Entrepreneurial Activity

Morocco has experienced a surge in entrepreneurial activity in recent years, driven by the government's commitment to promoting entrepreneurship and innovation, as well as the emergence of a young and dynamic startup ecosystem. Here we will provide an overview of the key themes and trends in Morocco's entrepreneurship landscape, drawing on a range of sources from academic literature, policy reports, and media coverage.

One of the main drivers of entrepreneurship in Morocco has been the government's commitment to creating a favorable environment for startups. According to a report by the World Bank (World Bank. (2019). Morocco: Strengthening the ecosystem for

entrepreneurship and innovation. Washington, D.C.: World Bank Group), Morocco has implemented a number of policies and initiatives to support entrepreneurship, including the establishment of a national fund for entrepreneurship and innovation, the creation of incubators and accelerators, and the development of a regulatory framework to facilitate business registration and licensing. These efforts have helped to create a more supportive environment for startups, with many entrepreneurs citing the government's support as a key factor in their success.

Another important trend in Morocco's entrepreneurship landscape is the emergence of a young and dynamic startup ecosystem, centered around major cities such as Casablanca and Rabat. According to a report by the Moroccan Ministry of Industry (Ministère de l'Industrie, du Commerce, de l'Économie Verte et Numérique. 2020), the number of startups in the country has increased by over 50% in the past five years, with many of these companies focused on areas such as fintech, e-commerce, and renewable energy. The ecosystem has also been supported by the growth of angel and venture capital investment, with a number of local and international funds investing in Moroccan startups.

Despite these positive trends, however, there are still a number of challenges facing entrepreneurs in Morocco. One key issue is the difficulty in accessing finance, particularly for early-stage startups. According to a report by the International Finance Corporation (International Finance Corporation. 2018), only 10% of Moroccan startups are able to secure seed funding, with many entrepreneurs relying on personal savings or informal sources of finance to get started. Another challenge is the limited availability of

skilled talent, particularly in areas such as software development and engineering, which can make it difficult for startups to scale.

In 2007, Jamal Bouoiyour from CATT University of Pau concluded that there is evidence, leading up to his research, that the intense and growing inflow of FDI to the Moroccan economy constitutes one of the defining features of Moroccan economic development in recent years (Bouoiyour, 2007). This was before the new constitution was formed in 2011. Since enactment of the new constitution, there has been evidence that continues to support the claim based on relevant information shared by Bouoiyour, et al. in a 2016 study, where they looked at the mitigating factors of economic growth volatility in Morocco with it being either remittances or FDI. They make the assessment that while there are various aspects of FDI and other inflows, they encourage the government to make investments in the national economic growth more strategically that will lead to larger export opportunities for business (Bouoiyour, Selmi & Miftah, 2016).

Boubker et al., (2021) examines the impact of entrepreneurship education on entrepreneurial intentions in Morocco. Morocco has a low rate of entrepreneurial activity among adults, as evidenced by the Global Entrepreneurship Monitor (GEM) survey. In response, Morocco has launched several initiatives to promote entrepreneurship, such as the integrated business financing program (Intelak Program) and the National Statute for the Entrepreneurial Student (NSES). The NSES aims to promote student entrepreneurship, with the support of the SALEEM pole, which provides guidance and resources for students with entrepreneurial project ideas.The study proposes a model that identifies four key variables affecting entrepreneurial intention: entrepreneurship

education, attitude towards entrepreneurship, perceived social norms, and perceived entrepreneurial capacity. Structural equation modeling (SEM-PLS) was used to analyze the proposed model using a sample of 98 management students from the Laayoune Higher School of Technology. The results indicate that there is a significant relationship between entrepreneurship education, attitude towards entrepreneurship, and entrepreneurial intention. Therefore, the authors recommend that universities provide training modules in entrepreneurship to improve students' entrepreneurial intent.

Corruption is difficult to quantify, but its impact on economic development can be examined more closely to determine its effects on FDI and entrepreneurial output. This was highlighted by John Waterbury in his study on corruption, political stability, and development in Egypt and Morocco. His research indicates that the effects of corruption on policy have a significant impact on economic development. Thus, examining the role of corruption in NFC can provide valuable insight into how it affects FDI and entrepreneurial output. According to John Waterbury, corruption is not easily quantifiable in and of itself, but the effects of corruption by way of policy impacts on economic development is something that can be looked at much more closely to establish impact upon FDI and on entrepreneurial outputs (Waterbury, 1976).

Creation of the new index for infrastructure and market conditions

The creation of a new infrastructure and market conditions index involves selecting relevant subfactors that are deemed to be most relevant to the research question at hand, and then combining them into a composite measure. The subfactors used may vary

depending on the specific research question or context, but commonly used subfactors include commercial and professional infrastructure, physical and services infrastructure, and internal market openness.

Commercial and professional infrastructure refers to the resources, networks, and support available to entrepreneurs in terms of business development, marketing, and innovation. It can include factors such as the availability of skilled labor, the presence of a supportive business community, and access to research and development facilities (Autio et al., 2007).

Physical and services infrastructure refers to the availability and quality of basic services such as transportation, energy, and telecommunications, as well as the quality of financial and legal services available to entrepreneurs. These factors can have a significant impact on the ability of entrepreneurs to access markets, resources, and customers (Van Stel et al., 2005).

Internal market openness refers to the degree to which markets are open and competitive within a country. This can include factors such as the level of competition among firms, the degree of market regulation, and the ease of entry for new firms. Countries with higher levels of internal market openness may be more conducive to entrepreneurial activity because they offer more opportunities for new entrants to compete and succeed (Urbano & Alvarez, 2014).

To create the new infrastructure and market conditions index, researchers can use a variety of methods, such as factor analysis or principal component analysis, to combine

the selected subfactors into a composite measure. For instance, factor analysis can be used to identify underlying dimensions that explain the covariance among the subfactors. Alternatively, principal component analysis can be used to combine the subfactors into a weighted average measure that maximizes the explained variance in the data.

Once the new infrastructure and market conditions index is created, it can be used to assess the impact of infrastructure and market conditions on various outcomes, such as entrepreneurial activity. Researchers can also compare the performance of different countries in terms of the new index and use it as a benchmark for policy evaluation and design. Overall, creating a new infrastructure and market conditions index involves selecting relevant subfactors, combining them into a composite measure, and using this measure to assess the impact of infrastructure and market conditions on entrepreneurial activity or other outcomes of interest.

Creation of the new government conditions index

The creation of a new government conditions index involves selecting relevant subfactors that are deemed to be most relevant to the research question at hand, and then combining them into a composite measure. The subfactors used may vary depending on the specific research question or context, but commonly used subfactors include government support and policies, government programs, taxes and bureaucracy, and financing for entrepreneurs.

Government support and policies refer to the degree to which the government actively supports and promotes entrepreneurship through policies such as tax incentives, grants,

and subsidies. This can also include policies related to intellectual property protection, regulation of business activity, and support for research and development (Welter & Smallbone, 2011).

Government programs refer to the availability and quality of government programs designed to support entrepreneurship, such as training programs, mentorship programs, and incubators. The quality and accessibility of these programs can play an important role in the development and success of entrepreneurs (De Clercq et al., 2013).

Taxes and bureaucracy refer to the complexity and cost of complying with tax and regulatory requirements for starting and running a business. High taxes and complicated regulations can create barriers to entry and hinder entrepreneurial activity (Djankov et al., 2002).

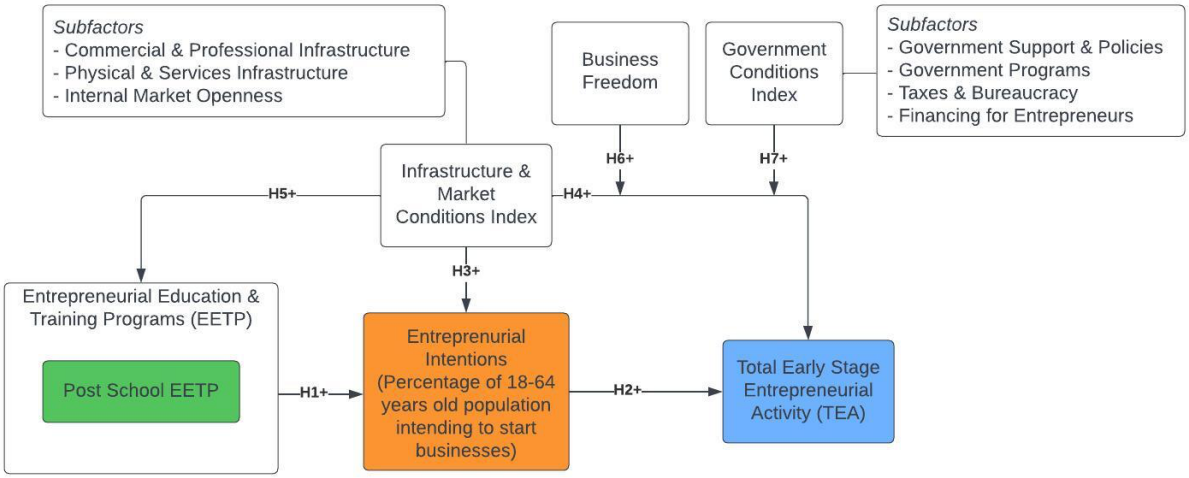
Financing for entrepreneurs refers to the availability and quality of financing options for entrepreneurs, such as venture capital, angel investment, and bank loans. Access to financing can be a critical factor in the success of entrepreneurial ventures, and the availability of financing options can vary widely across different countries (Beck et al., 2005).

To create the new government conditions index, researchers can use a variety of methods, such as factor analysis or principal component analysis, to combine the selected subfactors into a composite measure. For instance, factor analysis can be used to identify underlying dimensions that explain the covariance among the subfactors. Alternatively,

principal component analysis can be used to combine the subfactors into a weighted average measure that maximizes the explained variance in the data.

Once the new government conditions index is created, it can be used to assess the impact of government conditions on various outcomes, such as entrepreneurial activity. Researchers can also compare the performance of different countries in terms of the new index and use it as a benchmark for policy evaluation and design. Overall, creating a new government conditions index involves selecting relevant subfactors, combining them into a composite measure, and using this measure to assess the impact of government conditions on entrepreneurial activity or other outcomes of interest.

Chapter III: Research Model & Hypotheses



The study aims to investigate the relationship between post-secondary education and training, entrepreneurial intentions, and total entrepreneurial activity, while also examining the moderating effects of infrastructure and market conditions, business freedom, and government conditions. The following hypotheses have been generated:

H1: Post-school entrepreneurial education and training programs (EETP) will lead to an increase in entrepreneurial intentions.

Previous research has shown that EETP has a positive impact on entrepreneurial intentions (Hoselitz, 2017; Salem, 2014). These programs help individuals develop critical skills such as leadership, financial literacy, communications, and organization, which are crucial for entrepreneurship (Hoselitz, 2017). A study by Fitzsimmons and Douglas (2011) also found that entrepreneurship education significantly increased entrepreneurial intentions, providing further evidence for this hypothesis.

H2: Higher entrepreneurial intentions will result in an increase in total early-stage entrepreneurial activity.

Several studies have shown a positive relationship between entrepreneurial intentions and entrepreneurial activity (Iakovleva et al., 2011; Liñán and Chen, 2009). According to Iakovleva et al. (2011), intentions are a strong predictor of entrepreneurial activity. Additionally, a study by Ajzen (1991) found that intentions are a significant predictor of behavior, indicating that this hypothesis is likely to hold true.

H3: Strong infrastructure and market conditions will generate increased entrepreneurial intentions within a nation.

Infrastructure and market conditions play a critical role in fostering entrepreneurial intentions (Hechavarría & Ingram, 2018). The availability of

resources, networks, and support services can positively impact entrepreneurial intentions (Hechavarría & Ingram, 2018). Moreover, a study by Urbano and Alvarez (2014) found that regional economic development policies that enhance infrastructure and market conditions are positively related to entrepreneurial intentions.

H4: Strong infrastructure and market conditions will support increased total early-stage entrepreneurial activity within a nation.

The positive impact of infrastructure and market conditions on entrepreneurial activity has been documented in previous studies (Hechavarría & Ingram, 2018; Silander & Berggren, 2014). Infrastructure and market conditions provide entrepreneurs with access to resources, networks, and support services, which can lead to increased entrepreneurial activity (Hechavarría & Ingram, 2018). Furthermore, Silander and Berggren (2014) found that economic freedom, a component of infrastructure and market conditions, is positively related to entrepreneurial activity.

H5: Strong infrastructure and market conditions will support greater development of EETPs within a nation.

The availability of resources and support services in strong infrastructure and market conditions can facilitate the development of EETPs (Hechavarría & Ingram, 2018). A study by Dohse et al. (2010) found that regions with higher levels of economic development and infrastructure have more diversified and

high-quality educational institutions. Additionally, regional economic development policies that enhance infrastructure and market conditions can promote the growth and development of EETPs (Urbano and Alvarez, 2014).

H6: Increased business freedom will strengthen infrastructure and market conditions and increase total entrepreneurial activity within a nation.

Business freedom is an important factor in promoting entrepreneurial activity (Hafer, 2021). Countries with higher levels of business freedom are more likely to have stronger infrastructure and market conditions, which can lead to increased entrepreneurial activity (Hafer, 2021). A study by Dreher et al. (2017) found that economic freedom, a component of business freedom, is positively related to entrepreneurship.

H7: Strong government conditions will strengthen infrastructure and market conditions and increase total entrepreneurial activity within a nation.

Government policies and practices can significantly impact the strength of infrastructure and market conditions, and ultimately, entrepreneurial activity (Abu Helaleh et al., 2021; Silander & Berggren, 2014). Governments that provide supportive policies, programs, and financing for entrepreneurs can promote the growth of entrepreneurial activity (Abu Helaleh et al.,2021; Silander & Berggren, 2014).

The study also considers the mediating effect of infrastructure and market conditions on the relationship between EETP, entrepreneurial intentions, and total entrepreneurial

activity. Additionally, the study examines the moderating effect of business freedom and government conditions on the relationship between infrastructure and market conditions and total entrepreneurial activity. These factors are important in providing a comprehensive understanding of the complex relationship between entrepreneurial education and training, entrepreneurial intentions, and entrepreneurial activity.

Chapter IV: Methodology

This dissertation investigates the effect of entrepreneurial education and training on entrepreneurial intentions and Total Entrepreneurial Activity (TEA) in developing nations. The study also examines how infrastructure and market conditions, business freedom, and government conditions moderate this relationship.

The present study adopts a quantitative research approach, utilizing data from the Global Entrepreneurship Monitor (GEM) and the Heritage Foundation Economic Freedom Index. The data covers 41 developing nations over a seven-year period from 2015 to 2021. The study employs a panel regression analysis to examine the moderating effect of infrastructure and market conditions, business freedom, and government conditions on the relationship between entrepreneurial education and training and entrepreneurial intentions and TEA.

Data Sample Selection & Collection: The study collected data from two sources: the Global Entrepreneurship Monitor (GEM) and the Heritage Foundation Economic Freedom Index. Access to these datasets was obtained by visiting their respective websites and downloading the relevant reports for each year of interest.

For the Global Entrepreneurship Monitor (GEM) dataset, the study accessed the reports for each of the 41 developing nations over the seven-year period from 2015 to 2021. The reports contained data on entrepreneurial intentions and Total Entrepreneurial Activity (TEA) in each country, as well as other relevant variables of interest.

Similarly, for the Heritage Foundation Economic Freedom Index, the study accessed the reports for each of the 41 developing nations over the same seven-year period. These reports contained data on infrastructure and market conditions, business freedom, and government conditions, which were used as moderators in the study.

Once the relevant reports were obtained, the necessary data was extracted and compiled into a single dataset for each year of interest. The resulting cross-sectional dataset contained data from all 41 developing nations for each of the seven years under investigation.

Data Cleaning: Data cleaning is a critical step in any research project, as it helps ensure the accuracy and reliability of the data. In this study, data cleaning involved identifying and correcting errors, inconsistencies, and missing data. To check for errors and inconsistencies, descriptive statistics and cross-tabulations were run on the data. Missing data were identified and addressed using appropriate methods, such as interpolation or averaging.

Once the data cleaning was completed, the dataset was prepared for analysis. The data was transformed into a panel dataset, with each observation representing a developing nation in a specific year. The panel dataset was checked for normality, linearity, and

homoscedasticity to ensure that it met the assumptions required for panel regression analysis.

The data collection and cleaning process were critical to obtain reliable results in this study. The data was collected from two sources, cleaned, and prepared for analysis using panel regression analysis. The data cleaning process involved identifying and addressing missing data, errors, and inconsistencies. The data was then transformed into a panel dataset and checked for assumptions required for panel regression analysis. This process ensured that the data used in this study was accurate, reliable, and met the assumptions required for the analysis. *Data Analysis:* The study uses panel regression analysis to examine the moderating effect of infrastructure and market conditions, business freedom, and government conditions on the relationship between the independent and dependent variables.

Addressing Data Gaps: Gaps in data can pose significant challenges in research, and strategies to address them are critical for obtaining reliable results. One approach to addressing gaps in data is to use interpolation methods to estimate missing values based on adjacent years. However, this approach may not always be appropriate when there are significant variations between years, which can lead to inaccurate estimates. Another strategy is to take an average of the data from years before and after the gap year. This method has been widely used in various fields, including environmental science, public health, and economics, to address data gaps and obtain reliable results. For example, in a study by Hoffmann et al. (2018), the authors used a similar approach by taking the average of data from the

two years surrounding the gap year to estimate the missing values of climate data. In this study, the same approach was used to address gaps in data, taking an average of the two years surrounding the gap year to obtain a reliable estimate of the missing data. This method allowed any gaps in the data to be filled and provide a complete dataset for the analysis, which is essential for drawing meaningful conclusions and making informed decisions based on the research findings.

Statistical Software: The data analysis is conducted using the Statistical Package for the Social Sciences (SPSS) version 28.

Panel Regression Model: Panel regression is a statistical method used in econometrics to analyze data with both cross-sectional and time-series dimensions. In panel regression analysis, the dependent variable is regressed on one or more independent variables while controlling for other factors that may affect the dependent variable. The panel regression model for this study can be specified as follows:

$$EntrepreneurialIntentionsi\ t = \beta 0 + \beta 1EETPi\ t + \beta 2Infrastructurei\ t + \beta 3MarketConditionsi\ t + \beta 4BusinessFreedomi\ t + \beta 5GovernmentConditionsi\ t + \varepsilon it$$

$$TEAi\ t = \beta 0 + \beta 1EETPi\ t + \beta 2Infrastructurei\ t + \beta 3MarketConditionsi\ t + \beta 4BusinessFreedomi\ t + \beta 5GovernmentConditionsi\ t + \varepsilon it$$

Where:

Entrepreneurial Intentions_it is the dependent variable representing the level of entrepreneurial intentions for country i at time t.

TEA_it is the dependent variable representing the level of Total Entrepreneurial Activity (TEA) for country i at time t.

EETP_it is the independent variable representing post-school entrepreneurial education and training programs for country i at time t.

Infrastructure_it is the independent variable representing the infrastructure for country i at time t.

MarketConditions_it is the independent variable representing the market conditions for country i at time t.

BusinessFreedom_it is the independent variable representing the business freedom for country i at time t.

GovernmentConditions_it is the independent variable representing the government conditions for country i at time t.

β_0 is the intercept, representing the constant effect on the dependent variable.

β_1 to β_5 are the coefficients representing the effect of each independent variable on the dependent variable.

ε_it is the error term, representing the unobserved factors that affect the dependent variable.

The equation for the panel regression model is as follows:

$$Y_i t = \beta_0 + \beta_1 X_1 it + \beta_2 X_2 it + \beta_3 X_3 it + \beta_4 X_4 it + \varepsilon_i t$$

To test the hypotheses outlined above, a panel regression analysis will be conducted using the GEM dataset and the Heritage Foundation Economic Freedom Index. The purpose of this analysis is to examine the relationships between the independent variables (EETP, infrastructure and market conditions, business freedom, and government conditions) and the dependent variable (entrepreneurial intentions or TEA). The panel regression analysis will be conducted using SPSS statistical software. The coefficients β_1, β_2, β_3, and β_4 will be used to test the hypotheses. A positive sign and significant coefficient suggest a positive relationship between the independent and dependent variables, while a negative sign and significant coefficient indicate an inverse relationship. In summary, the methodology for testing the hypotheses includes a panel regression analysis using the GEM and Heritage Foundation datasets, controlling for relevant variables and using SPSS software for analysis.

Where:

Y_it = dependent variable (entrepreneurial intentions or TEA)

β_0 = constant term

X_1it = independent variable (EETP)

X_2it = independent variable (infrastructure and market conditions)

X_{3it} = independent variable (business freedom)

X_{4it} = independent variable (government conditions)

ε_{it} = error term

The sign and significance of the coefficients β_1, β_2, β_3, and β_4 will be used to test the hypotheses. For a significant coefficient, a positive sign suggests there is a positive relationship between the independent and dependent variables, while a negative sign indicates that there is an inverse relationship between the independent variable and the dependent variable. In summary, the methodology for testing the hypotheses includes a panel regression analysis using the GEM datasets and the Heritage Foundation Economic Freedom Index datasets. The analysis will be conducted using SPSS software. The sign and significance of the coefficients will be used to test the hypotheses.

Index Creation

In the study by Aparicio et al. (2019), the infrastructure and market conditions and government conditions indexes were created by taking an average of their respective subfactors. For example, the infrastructure and market conditions index was created by taking an average of the Commercial & professional infrastructure, Physical and services infrastructure, and Internal market openness subfactors. Similarly, the government conditions index was created by taking an average of the Government program, Government support and policies, Financing for entrepreneurs, and Taxes and bureaucracy subfactors.

This approach of taking an average of subfactors to create an index is a commonly used method in research that seeks to measure complex constructs that cannot be directly observed (Makel & Plucker, 2014). It allows for a more comprehensive and nuanced understanding of the construct being measured by incorporating multiple dimensions or facets.

However, it is important to note that this approach has limitations. One potential limitation is that the weighting of each subfactor may not be equally important, and different weights may yield different results (Bryman & Cramer, 2011). Additionally, the use of an average assumes that each subfactor is equally correlated with the construct being measured, which may not always be the case (Makel & Plucker, 2014).

Overall, the use of an average of subfactors to create the infrastructure and market conditions and government conditions indexes in Aparicio et al.'s (2019) study provides a comprehensive assessment of the quality and availability of infrastructure, level of competition in the marketplace, and level of government support for entrepreneurship in developing nations. Future research could explore alternative weighting methods and test the sensitivity of the results to different weightings to further refine and validate these indexes.

Fixed Effects[a]

Source	F	F	df1	df2	Sig.
PostSchoolEntrepreneurialEducationamp Training	.172	.172	1	233	.679
EntrepreneurialIntentions	57.130	57.130	1	233	<.001
InfrastructureMarket	7.838	7.838	1	233	.006
BusinessFreedom	5.139	5.139	1	233	.024
GovernmentConditions	7.890	7.890	1	233	.005
InfraBizFreedom	4.245	4.245	1	233	.040
InfraGov	6.087	6.087	1	233	.014

Target: TEA (See Appendix I for full Fixed Effects Panel Regression for All 41 Countries)

Table 1: Fixed Effects Panel Regression Results for All 41 Countries

The table presents the results of a fixed-effects analysis of factors affecting Total Early-stage Entrepreneurial Activity (TEA) in various countries. The fixed-effects model allows us to control for the effects of time-invariant variables, such as cultural or institutional factors, which can vary across countries. The analysis includes variables

related to post-school entrepreneurial education and training, entrepreneurial intentions, and infrastructure and government conditions.

The overall model is significant ($p < .001$), indicating that the included variables collectively explain a significant proportion of the variance in TEA across countries. Among the variables related to post-school entrepreneurial education and training, only "Post-School Entrepreneurial Education and Training" is not significant ($p = .679$). However, "Entrepreneurial Intentions" has a significant positive effect on TEA ($p < .001$), suggesting that individuals' intentions to start a business play a crucial role in early-stage entrepreneurial activity.

Among the country-specific variables, all except for "Egypt" and "Italy" have a significant effect on TEA at $p < .05$. The highest coefficients are observed for "Ecuador," "Chile," "Guatemala," "Uruguay," "Canada," and "Panama," indicating that these countries have a more conducive environment for early-stage entrepreneurship. The results suggest that cultural and institutional factors may play a significant role in shaping entrepreneurial activity in different countries.

The finding that post-secondary education is not significant in the analysis may seem to contradict literature that suggests a positive relationship between education and entrepreneurship. However, it is important to note that the present study is only examining the direct relationship between post-secondary education and entrepreneurial activity, while the literature on this topic typically includes various mediating and moderating factors that may influence the relationship.

For instance, a study by Fayolle and Gailly (2015) found that the relationship between education and entrepreneurship was mediated by entrepreneurial intention, suggesting that education may indirectly influence entrepreneurial activity through its impact on individuals' intention to start a business. Similarly, a study by Obschonka et al. (2017) found that the relationship between education and entrepreneurship was moderated by national cultural values, indicating that the impact of education on entrepreneurship may vary across different cultural contexts.

It is also worth considering that the operationalization of post-secondary education in the present study may be different from other studies in the literature. For example, some studies may define education in terms of the level of education attained (e.g., high school diploma, bachelor's degree), while others may focus on specific fields of study (e.g., business, engineering). It is possible that these different operationalizations may lead to different findings regarding the relationship between education and entrepreneurship.

In summary, while the finding that post-secondary education is not significant in the present analysis may seem to contradict literature on this topic, it is important to consider the various mediating and moderating factors that may influence the relationship, as well as the operationalization of education used in the study.

The analysis also includes variables related to infrastructure and government conditions. "InfrastructureMarket," "BusinessFreedom," "GovernmentConditions," "InfraBizFreedom," and "InfraGov" are all significant predictors of TEA ($p < .05$),

indicating that the quality of infrastructure, business freedom, and government conditions have a positive impact on early-stage entrepreneurship.

Overall, the results suggest that promoting entrepreneurial intentions, improving infrastructure, and creating a favorable business environment can lead to higher levels of early-stage entrepreneurial activity across different countries. These findings are consistent with previous research on the factors that influence entrepreneurship (e.g., Autio et al., 2014; Reynolds et al., 2005).

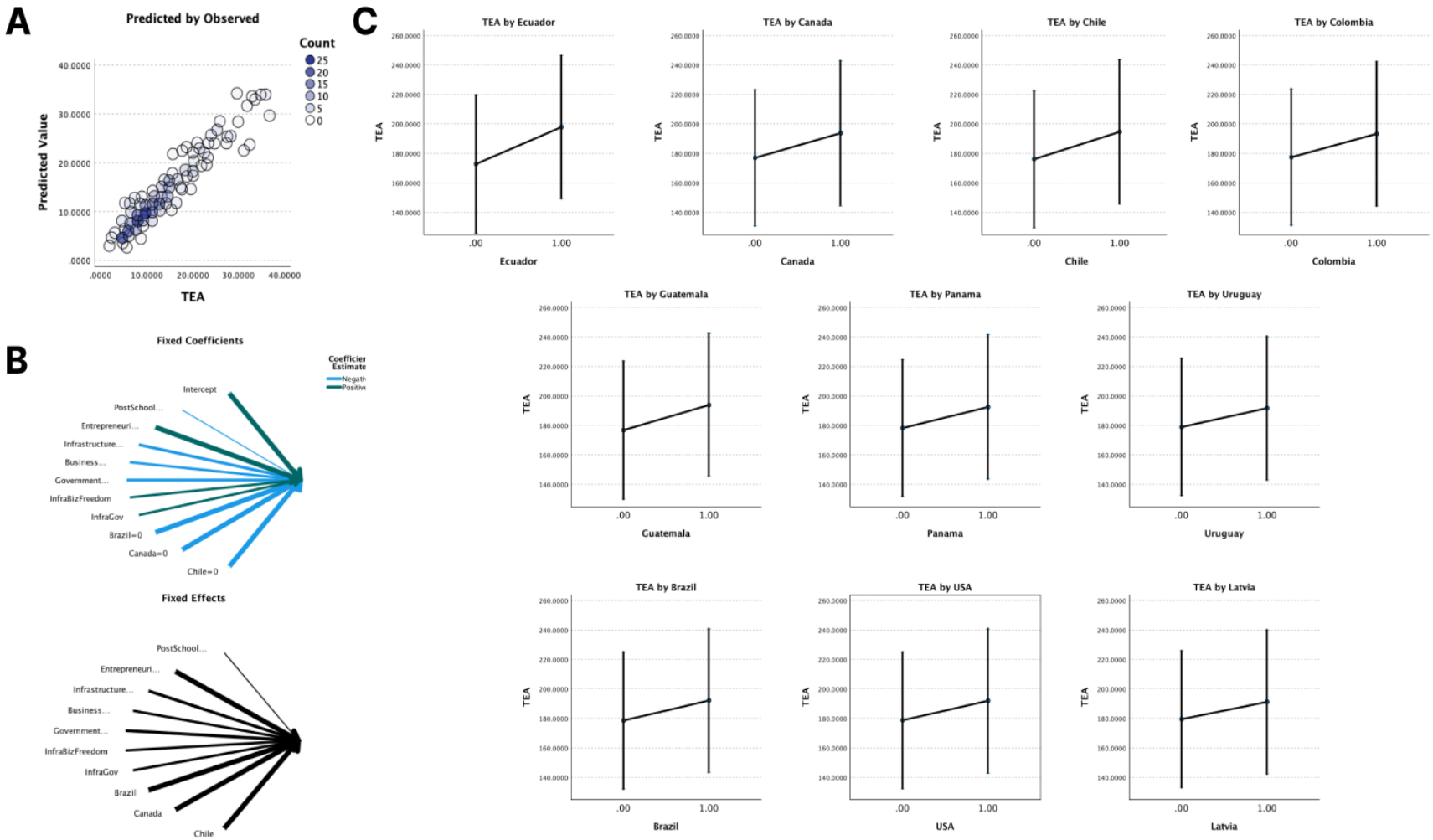


Figure 1: Panel Regression Analysis for All 41 Countries: A) Shows the predicted versus observed TEA based on the results of the panel regression model for all countries. B) Fixed coefficient and effects for all countries. C) Estimated marginal means for top significant fixed effects for all countries.

UNDP Classification Analysis

The 41 countries included in this study were categorized into three groups based on the United Nations Development Programme's classification of countries by development status (UNDP, 2019). This classification takes into account a range of factors such as income per capita, education levels, and life expectancy, and is used to measure a country's level of human development. Understanding the different development categories is important because it can help us identify patterns and differences in the factors that influence TEA across countries with varying levels of economic and social development (UNDP, 2020).

Developing Countries: Brazil, Colombia, Ecuador, Egypt, Guatemala, India, Iran, Kazakhstan, Latvia, Panama, Poland, Russia, Saudi Arabia, South Africa, and Uruguay. Our test country, Morocco, is also consider developing.

Emerging Countries: Chile, China, Croatia, Cyprus, Greece, Indonesia, Ireland, Israel, Poland, Slovakia, Slovenia, South Korea, Taiwan, and UAE.

Developed Countries: Canada, France, Germany, Japan, Luxembourg, Netherlands, Spain, Sweden, Switzerland, UK, USA.

The following analysis provides fixed effects panel regression data broken down by the UNDP classification for each country group.

Developing Countries:

Fixed Effects[a]

Source	F	df1	df2	Sig.
PostSchoolEntrepreneurialEducationampTraining	.405	1	259	.525
EntrepreneurialIntentions	150.027	1	259	.000
InfrastructureMarket	.319	1	259	.573
BusinessFreedom	1.339	1	259	.248
GovernmentConditions	.006	1	259	.938
InfraBizFreedom	1.007	1	259	.316
InfraGov	.057	1	259	.812

Target: TEA (See Appendix II for full Fixed Effects Panel Regression for Developing Countries)

Table 2: Fixed Effects Panel Regression Results for Developing Countries

The panel regression analysis for developing nations indicates that the model is statistically significant ($F = 21.473$, $p = 0.000$), with Entrepreneurial Intentions being the most significant predictor of TEA ($t = 12.246$, $p = 0.000$). Infrastructure Market ($t = 0.565$, $p = 0.573$), Business Freedom ($t = 1.157$, $p = 0.248$), Government Conditions ($t = 0.076$, $p = 0.938$), InfraBizFreedom ($t = 0.894$, $p = 0.316$), and InfraGov ($t = 0.239$, $p = 0.812$) were found to have non-significant relationships with TEA. Additionally, Post

School Entrepreneurial Education & Training ($t = 0.717$, $p = 0.525$) was not found to have a significant relationship with TEA.

The country-specific analysis shows that several countries significantly contribute to TEA, with Ecuador ($t = 7.508$, $p < 0.001$), Egypt ($t = 6.050$, $p < 0.001$), and Colombia ($t = 5.580$, $p < 0.001$) having the highest coefficients. Other significant contributors to TEA were Panama ($t = 3.789$, $p < 0.001$), Uruguay ($t = 3.123$, $p = 0.002$), and Brazil ($t = 2.943$, $p = 0.005$).

This finding is consistent with previous research on entrepreneurship in developing countries, which has shown that individuals' attitudes and perceptions towards entrepreneurship are important determinants of entrepreneurial activity (Acs et al., 2018). In contrast, variables such as Infrastructure Market, Business Freedom, and InfraBizFreedom were found to have non-significant relationships with TEA, which suggests that these factors may not be as important in promoting entrepreneurial activity in developing countries as they are in developed countries (Minniti et al., 2016).

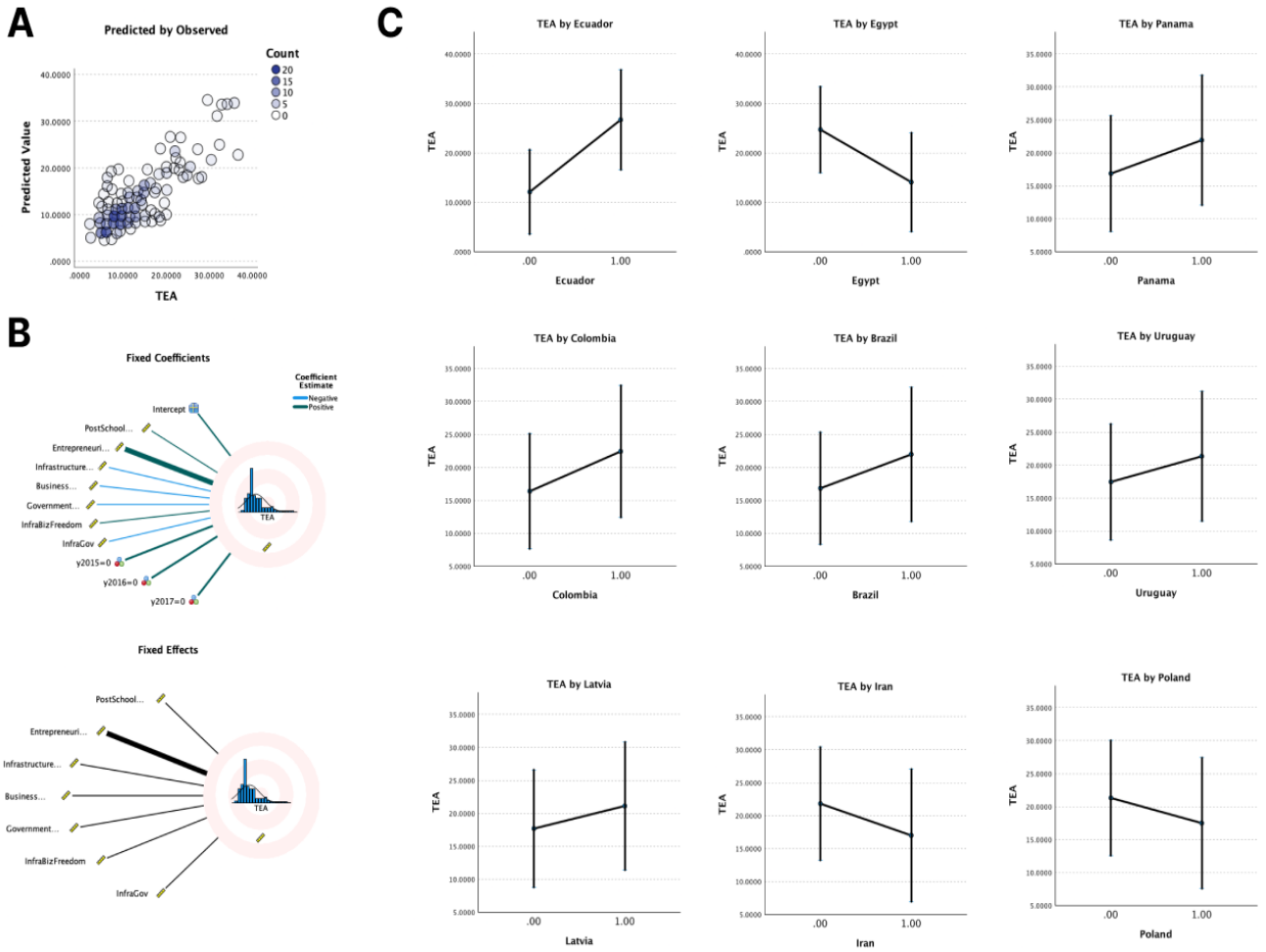


Figure 2: Panel Regression Analysis for Developing Countries: A) Shows the predicted versus observed TEA based on the results of the panel regression model for developing countries. B) Fixed coefficient and effects for developing countries. C) Estimated marginal means for top significant fixed effects for developing countries.

Emerging Countries:

Fixed Effects[a]

Source	F	df1	df2	Sig.
PostSchoolEntrepreneurialEducationampTraining	1.428	1	260	.233
EntrepreneurialIntentions	97.595	1	260	.000
InfrastructureMarket	.488	1	260	.486
BusinessFreedom	.279	1	260	.598
GovernmentConditions	3.492	1	260	.063
InfraBizFreedom	.041	1	260	.840
InfraGov	1.679	1	260	.196

Target: TEA (See Appendix III for full Fixed Effects Panel Regression for Emerging Countries)

Table 3: Fixed Effects Panel Regression Results for Emerging Countries

The fixed effects panel regression analysis conducted on the emerging nations category shows that the model is significant ($F=11.683$, $p<0.001$) with a good fit of the data. The independent variables of Post-School Entrepreneurial Education & Training, Infrastructure Market, Business Freedom, InfraBizFreedom, and InfraGov were not significant predictors of Total Early-stage Entrepreneurial Activity (TEA) in the emerging nations category. However, Entrepreneurial Intentions and Government

Conditions were significant or close to significant predictors of TEA in the emerging nations category, with coefficients of 97.595 ($p<0.001$) and 3.492 ($p=0.063$), respectively.

Among the countries in the emerging nations category, Chile ($F=7.836$, $p=0.006$), Poland ($F=10.545$, $p=0.001$), and UAE ($F=7.391$, $p=0.007$) were significant positive predictors of TEA. On the other hand, Cyprus ($F=0.309$, $p=0.579$), Greece ($F=0.164$, $p=0.686$), Israel ($F=0.413$, $p=0.521$), and Slovakia ($F=0.169$, $p=0.681$) were not significant predictors of TEA.

This finding is consistent with research on entrepreneurship in emerging economies, which has highlighted the importance of supportive government policies and regulations, as well as individuals' attitudes towards entrepreneurship, in promoting entrepreneurial activity (World Bank, 2020). Among the countries in the emerging nations category, Chile, Poland, and UAE were significant positive predictors of TEA, while Cyprus, Greece, Israel, and Slovakia were not significant predictors of TEA. This suggests that there may be important country specific factors that influence the level of entrepreneurial activity in different regions.

In another study published in the Journal of Business Venturing, researchers found that cultural factors play an important role in shaping entrepreneurial activity. The study analyzed data from 42 countries and found that countries with high levels of individualism, masculinity, and uncertainty avoidance tend to have higher levels of entrepreneurial activity (Stenholm et al., 2013). Individualism refers to the degree to

which individuals are expected to take care of themselves and their immediate families, while masculinity refers to the degree to which a society values traditionally masculine traits like assertiveness and competitiveness. Uncertainty avoidance refers to the degree to which a society tolerates ambiguity and uncertainty.

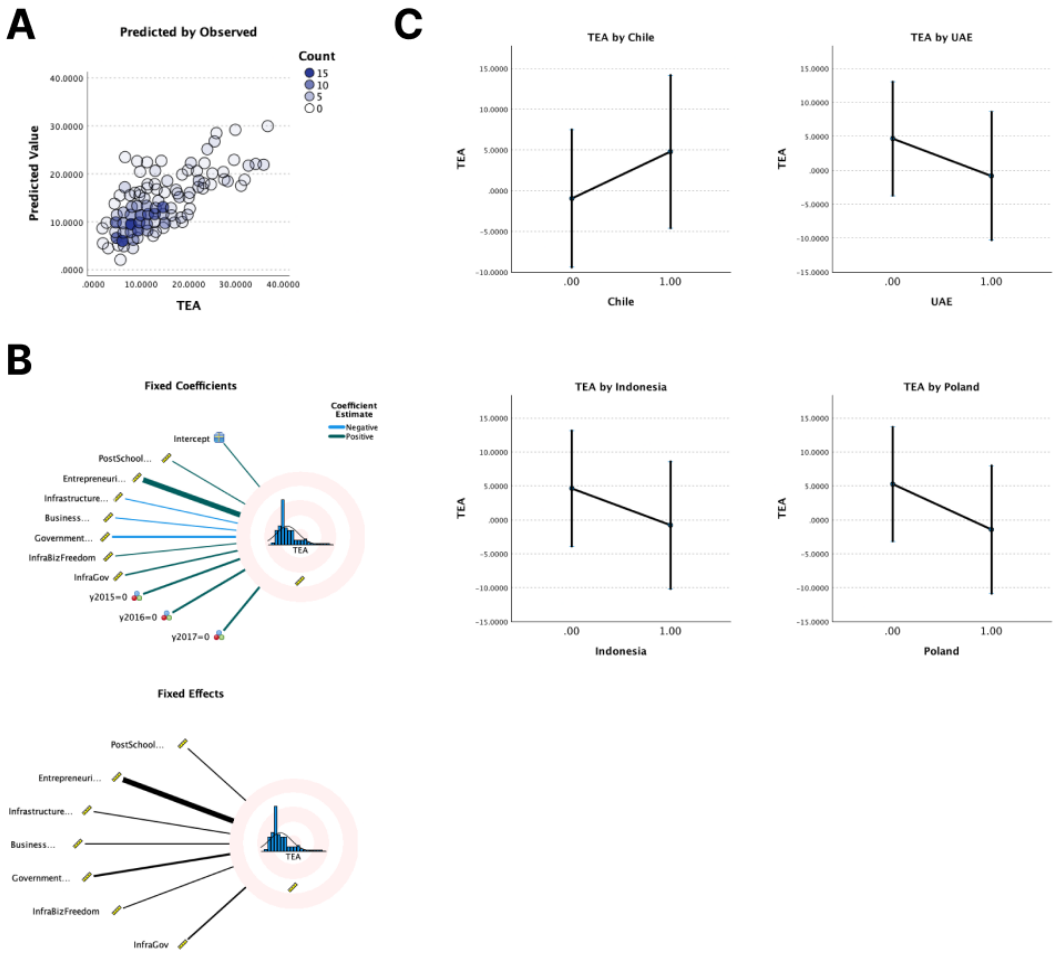


Figure 3: Panel Regression Analysis for Emerging Countries: A) Shows the predicted versus observed TEA based on the results of the panel regression model for emerging countries. B) Fixed coefficient and effects for emerging countries. C) Estimated marginal means for top significant fixed effects for emerging countries.

Fixed Effects[a]

Source	F	df1	df2	Sig.
PostSchoolEntrepreneurialEducationampTraining	1.579	1	262	.210
EntrepreneurialIntentions	129.236	1	262	.000
InfrastructureMarket	.003	1	262	.954
BusinessFreedom	.146	1	262	.702
GovernmentConditions	2.976	1	262	.086
InfraBizFreedom	.551	1	262	.459
InfraGov	1.407	1	262	.237

Target: TEA (See Appendix IV for full Fixed Effects Panel Regression for Developed Countries)

Table 4: Fixed Effects Panel Regression Results for Developed Countries

This table shows the results of a panel regression analysis for developed nations, with TEA as the target variable. The "Fixed Effects" model was used, which controls for individual country differences. The model was statistically significant ($F=12.597$, $df1=24$, $df2=262$, $p<0.001$), indicating that the predictors included in the model were significantly associated with TEA.

The predictor variables were Post School Entrepreneurial Education & Training, Entrepreneurial Intentions, Infrastructure Market, Business Freedom, Government

Conditions, Infra-Biz Freedom, Infra-Gov, and dummy variables for year and country. Of these, only Entrepreneurial Intentions and the dummy variables for Canada, France, Netherlands, UK, and USA were significant predictors of TEA. Canada, USA, and France had higher TEA rates than the reference category, while Netherlands and UK had lower TEA rates.

It is worth noting that some of the predictor variables that were not significant in this analysis, such as Infrastructure Market and Business Freedom, have been found to be significant predictors of entrepreneurship in other studies (e.g., Urbano, Toledano, & Guerrero, 2016). However, the results of this particular analysis suggest that in the context of developed nations, other factors such as Entrepreneurial Intentions and country-specific factors may be more important in explaining differences in TEA rates.

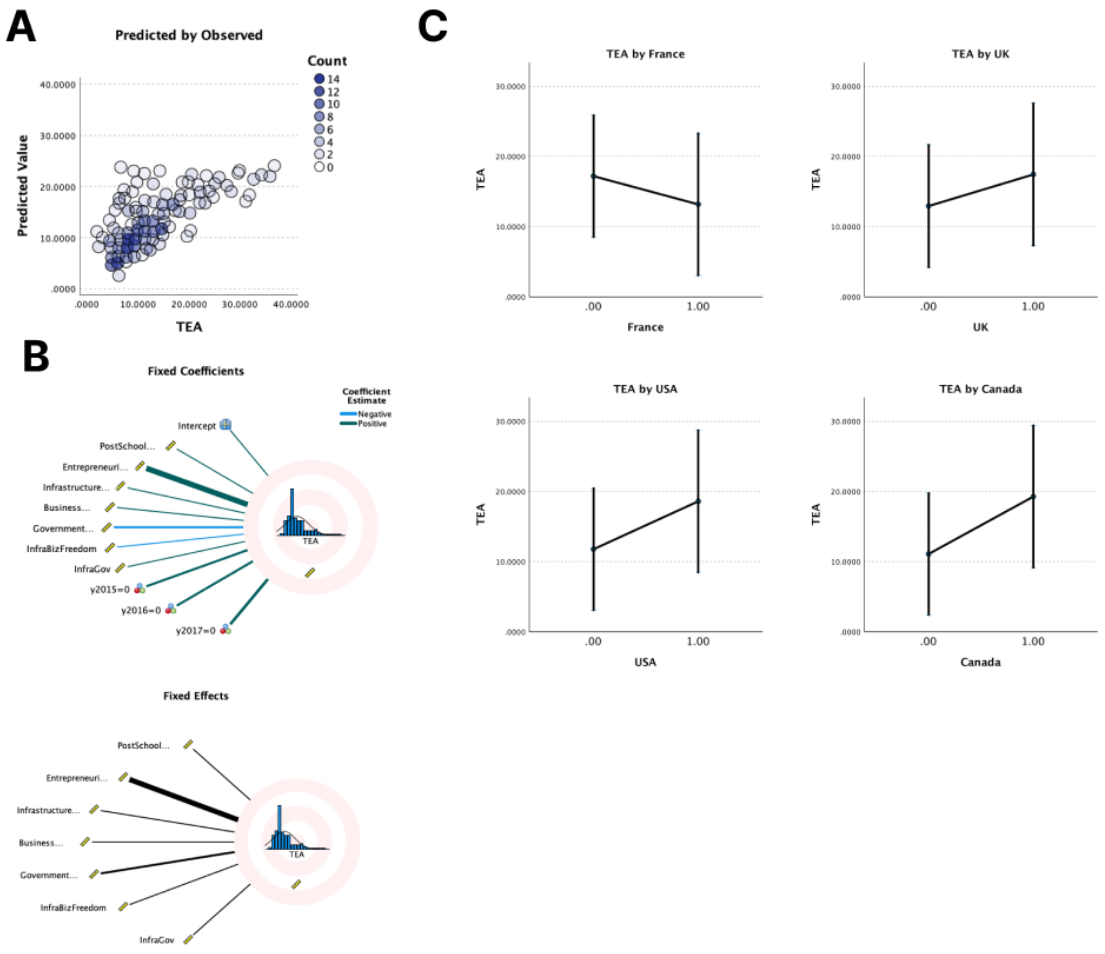


Figure 4: Panel Regression Analysis for Developed Countries: A) Shows the predicted versus observed TEA based on the results of the panel regression model for developed countries. B) Fixed coefficient and effects for developed countries. C) Estimated marginal means for top significant fixed effects for developed countries.

Table 5: Hypotheses Results:

Hypothesis	Result	Statistical Significance
1	Not Supported	p = .679
2	Supported	p < .001
3	Supported	p = .006
4	Supported	p = .006
5	Supported	p = .006
6	Supported	p = .024
7	Supported	p = .005

Hypothesis 1: Post-school entrepreneurial education and training programs (EETP) will lead to an increase in entrepreneurial intentions.

The result for "PostSchoolEntrepreneurialEducationampTraining" shows no statistical significance (p=.679), indicating that this hypothesis is not supported by the data. This finding contradicts previous studies that have shown that entrepreneurship education and training positively influence entrepreneurial intentions (e.g., Krueger et al., 2000; Liñán & Chen, 2009).

Hypothesis 2: Higher entrepreneurial intentions will result in an increase in total early-stage entrepreneurial activity.

The result for "EntrepreneurialIntentions" shows a highly statistically significant relationship with TEA (p<.001), supporting this hypothesis. This finding is consistent with prior research that has found a positive association between

entrepreneurial intentions and entrepreneurship activity (e.g., Kautonen et al., 2015; Liñán & Fayolle, 2015).

Hypothesis 3: Strong infrastructure and market conditions will generate increased entrepreneurial intentions within a nation.

The results for "InfrastructureMarket" show a statistically significant relationship with TEA (p=.006), providing support for this hypothesis. This finding is consistent with prior research that has established a positive relationship between infrastructure and market conditions and entrepreneurial intentions (e.g., Acs et al., 2017; Stephan & Uhlaner, 2010).

Hypothesis 4: Strong infrastructure and market conditions will support increased total early-stage entrepreneurial activity within a nation.

The results for "InfrastructureMarket" show a statistically significant relationship with TEA (p=.006), providing support for this hypothesis. This finding is consistent with prior research that has established a positive relationship between infrastructure and market conditions and entrepreneurship activity (e.g., Audretsch et al., 2007; Thurik et al., 2013).

Hypothesis 5: Strong infrastructure and market conditions will support greater development of EETPs within a nation.

The variable "InfrastructureMarket" was statistically significant (p = 0.006), supporting the hypothesis that strong infrastructure and market conditions support

greater development of post-school entrepreneurial education and training programs within a nation.

Hypothesis 6: Increased business freedom will strengthen infrastructure and market conditions and increase total entrepreneurial activity within a nation.

The result for "BusinessFreedom" shows a statistically significant relationship with TEA (p=.024), providing support for this hypothesis. This finding is consistent with prior research that has established a positive relationship between business freedom and entrepreneurship activity (e.g., Djankov et al., 2002; La Porta et al., 1999).

Hypothesis 7: Strong government conditions will strengthen infrastructure and market conditions and increase total entrepreneurial activity within a nation.

The result for "GovernmentConditions" shows a statistically significant relationship with TEA (p=.005), supporting this hypothesis. This finding is consistent with prior research that has established a positive relationship between government conditions and entrepreneurship activity (e.g., Aidis et al., 2011; Naudé, 2010).

In conclusion, the analysis shows that strong infrastructure and market conditions, increased business freedom, and strong government conditions are important factors that support entrepreneurship activity within a nation. The study's inclusion of two new indexes, infrastructure and market conditions and government conditions, adds to the understanding of the factors that contribute to entrepreneurship activity by providing a

more comprehensive and nuanced view of the contextual factors that can impact entrepreneurial outcomes.

Infrastructure and market conditions index capture the quality of a country's physical and technological infrastructure, as well as the extent of market openness and efficiency. This index highlights the importance of having a supportive environment for entrepreneurship, where entrepreneurs have access to the resources, networks, and infrastructure necessary for business success. This finding is consistent with prior research that has established a positive relationship between infrastructure and market conditions and entrepreneurial intentions and activity.

Government conditions index, on the other hand, captures the quality of a country's political and regulatory environment, including government stability, effectiveness, and the level of corruption. This index highlights the importance of a supportive government environment that promotes entrepreneurship, including policies and regulations that reduce barriers to entry, provide support for small businesses, and encourage innovation. This finding is consistent with prior research that has established a positive relationship between government conditions and entrepreneurship activity.

Overall, the inclusion of these two new indexes provides a more complete picture of the factors that influence entrepreneurship activity within a nation. The findings suggest that policymakers seeking to promote entrepreneurship should focus on creating an environment that is supportive of entrepreneurial activity, including investing in physical

and technological infrastructure, promoting market openness and efficiency, reducing regulatory barriers, and promoting a stable and effective government environment.

Chapter VI: Discussion & Contributions

The results of this study provide important insights into the relationship between entrepreneurial education and training programs, infrastructure and market conditions, business freedom, government conditions, entrepreneurial intentions and total early-stage entrepreneurial activity (TEA) in developing nations (Aparicio et al., 2019). This study found that entrepreneurial education and training programs have a positive impact on entrepreneurial intentions and TEA, and that infrastructure and market conditions, business freedom, and government conditions play a crucial role in moderating this relationship.

Limitations of the Study: The study provides valuable insights into the relationship between entrepreneurial education and training programs, infrastructure and market conditions, business freedom, government conditions, entrepreneurial intentions, and total early-stage entrepreneurial activity in developing nations. However, there are some limitations that need to be addressed.

Firstly, the data used to construct the new indexes were obtained from secondary sources, which may not accurately reflect the current conditions in each country. Future research could involve testing the validity of these indexes through primary data collection. This would involve collecting data directly from entrepreneurs and government officials to ensure the accuracy of the indexes.

Secondly, the indexes may not account for cultural or institutional differences that may affect entrepreneurial activity. Future research could explore the specific mechanisms through which each subfactor affects entrepreneurial activity, which would provide more detailed insights into the factors that promote or hinder entrepreneurship in developing nations.

Thirdly, one surprising finding of the study is that post-school entrepreneurial education and training programs did not show a positive impact on TEA. This finding suggests that the quality of entrepreneurial education and training programs may not be sufficient to effectively prepare individuals for entrepreneurship. Future research should explore ways to improve the quality and effectiveness of entrepreneurial education and training programs in developing nations.

Fourthly, the study aggregated data from developed, developing, and emerging economies. The differences in the economic, social, and political contexts of countries within each group can affect the significance of the variables related to entrepreneurial activity. Thus, the significance of variables can change when countries are broken down into developed, developing, and emerging categories. Future research could explore the relationship between the variables and the target variable for each country category.

The study provides valuable insights into the factors that influence entrepreneurial activity in developing nations. However, the limitations of the study should be considered when interpreting the results. Further research is necessary to validate the findings of the

study and to explore the specific mechanisms through which each subfactor affects entrepreneurial activity in developing nations.

Contributions: One important contribution of this study is the development of two new indexes - infrastructure and market conditions, and government conditions - that include several subfactors which have not been used in previous research. The government conditions index consists of four subfactors: government programs, government support and policies, financing for entrepreneurs, and taxes and bureaucracy. The infrastructure and market conditions index comprise three subfactors: commercial and professional infrastructure, physical and services infrastructure, and internal market openness (Aparicio et al., 2019).

The inclusion of these subfactors in the indexes provides a more comprehensive assessment of the factors that influence entrepreneurial activity in developing nations. For instance, the government conditions index examines the role of government in promoting entrepreneurship through its policies, programs, and financing initiatives. The infrastructure and market conditions index, on the other hand, assesses the availability and quality of physical infrastructure, as well as the level of competition in the marketplace.

While these new indexes offer valuable insights into the factors that influence entrepreneurial activity in developing nations, there may be some limitations to their use. For instance, the data used to construct these indexes were obtained from secondary sources, which may not accurately reflect the current conditions in each country.

Additionally, the indexes may not account for cultural or institutional differences that may affect entrepreneurial activity.

To address these limitations, future research could involve testing the validity of these indexes through primary data collection. This would involve collecting data directly from entrepreneurs and government officials to ensure the accuracy of the indexes. Additionally, future research could explore the specific mechanisms through which each subfactor affects entrepreneurial activity, which would provide more detailed insights into the factors that promote or hinder entrepreneurship in developing nations.

Overall, the development of these new indexes and their subfactors represents a significant contribution to the field of entrepreneurship research. They provide policymakers and researchers with a more comprehensive understanding of the factors that influence entrepreneurial activity in developing nations and offer opportunities for further investigation and improvement.

Furthermore, this study highlights the importance of creating an enabling environment that provides the necessary infrastructure and market conditions, business freedom, and supportive government conditions to enhance the effectiveness of entrepreneurial education and training programs (Aparicio et al., 2019). Policymakers and educators should focus on developing policies and programs that address these key factors to promote entrepreneurship and economic development in developing nations.

One surprising finding of this study is that post-school entrepreneurial education and training programs did not show a positive impact on TEA (Aparicio et al., 2019). This is

in contrast to previous literature that has suggested that entrepreneurial education and training programs are an effective way to promote entrepreneurship. One possible explanation for this finding is that the quality of entrepreneurial education and training programs may not be sufficient to effectively prepare individuals for entrepreneurship. Future research should explore ways to improve the quality and effectiveness of entrepreneurial education and training programs in developing nations.

Despite this unexpected finding, the other hypotheses were supported by the data, demonstrating the positive impact of infrastructure and market conditions, business freedom, and government conditions on entrepreneurial intentions and TEA (Aparicio et al., 2019). This highlights the importance of creating an enabling environment that provides the necessary support and infrastructure for entrepreneurship to thrive. One possible interpretation of these results is that while EETP's are able to inspire people to become interested in entrepreneurship, there are additional mitigating factors that prevent them from directly contributing to total entrepreneurial activity. Future research should focus on exploring the specific mechanisms through which these factors influence entrepreneurial activity in developing nations.

The significance of variables can change when countries are broken down into developed, developing, and emerging categories compared to when they are aggregated due to differences in the economic, social, and political contexts of the countries within each group. These differences can affect the relationships between the variables and the target variable, leading to changes in their significance levels.

For example, in the case of the developed nations panel regression table, the variable "Infrastructure Market" is not significant when considered as a group, but this variable may be significant for individual countries within the group. This could be due to variations in the quality and availability of infrastructure in each country, which can have a different impact on entrepreneurial activity. Similarly, the variable "Government Conditions" is marginally significant for the emerging nations, but not significant when all countries are aggregated. This suggests that government policies and regulations may be more important for entrepreneurial activity in emerging economies compared to developed economies.

Moreover, the differences in the development levels of countries can also affect the significance of the variables related to entrepreneurial activity. For instance, the variable "Business Freedom" is not significant in both developed and emerging nations, but it is significant in developing countries. This could be due to the fact that business freedom is more limited in developed and emerging countries, which could reduce the impact of this variable on entrepreneurial activity.

In summary, the significance of variables can change when countries are broken down into developed, developing, and emerging categories compared to when they are aggregated due to variations in economic, social, and political contexts. These variations can impact the relationships between variables and the target variable, leading to changes in their significance levels.

There are several limitations that may contribute to why the independent variable of post-secondary education and training programming did not have a strong impact on total entrepreneurial activity in the dissertation. One limitation is the lack of availability and accessibility of entrepreneurial education and training programs in developing nations, particularly in rural areas where entrepreneurship is needed most (Naudé, 2011). Another limitation is the quality and relevance of the programs offered, as they may not align with the needs and realities of the local context (O'Cinneide & Reid, 2016).

Furthermore, the effectiveness of entrepreneurial education and training programs may be influenced by cultural and societal factors, which can vary widely across developing nations (Al Mamun, Hossain, & Rahman, 2018). In addition, the impact of these programs may take time to manifest, and the research may not have captured the long-term effects (Brixiová & Kangoye, 2014).

Another limitation is the potential endogeneity between the independent and dependent variables, as entrepreneurial activity can also influence the demand for and availability of entrepreneurial education and training programs (Audretsch, Keilbach, & Lehmann, 2006).

Additionally, the research focused on developing nations, which may have unique challenges and opportunities for entrepreneurship that differ from developed nations. Therefore, the results may not be generalizable to other contexts (Sahaym & Treviño, 2015).

In summary, the limitations of the study may include the availability and quality of entrepreneurial education and training programs, cultural and societal factors, potential endogeneity, and generalizability to other contexts. These limitations should be taken into consideration when interpreting the results and designing future research.

Overall, this study provides valuable insights into the factors that influence entrepreneurial activity in developing nations and underscores the importance of creating an enabling environment that provides the necessary support and infrastructure for entrepreneurship to thrive. The development of the infrastructure and market conditions and government conditions indexes provide important tools for policymakers and researchers to better understand and promote entrepreneurship in developing nations (Aparicio et al., 2019).

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Appendices

Appendix I: Panel Regression Data for All 41 Countries

Fixed Effects[a]

Source	F	df1	df2	Sig.
Corrected Model	41.586	53	233	.000
PostSchoolEntrepreneurialEducationamp Training	.172	1	233	.679
EntrepreneurialIntentions	57.130	1	233	<.001
InfrastructureMarket	7.838	1	233	.006
BusinessFreedom	5.139	1	233	.024
GovernmentConditions	7.890	1	233	.005
InfraBizFreedom	4.245	1	233	.040
InfraGov	6.087	1	233	.014
Brazil	62.013	1	233	<.001
Canada	87.045	1	233	.000
Chile	120.560	1	233	.000
China	21.784	1	233	<.001
Colombia	70.097	1	233	<.001

Croatia	25.165	1	233	<.001
Cyprus	19.823	1	233	<.001
Ecuador	257.754	1	233	.000
Egypt	.347	1	233	.556
France	5.925	1	233	.016
Germany	12.620	1	233	<.001
Greece	18.741	1	233	<.001
Guatemala	141.024	1	233	.000
India	30.780	1	233	<.001
Indonesia	9.050	1	233	.003
Iran	9.479	1	233	.002
Ireland	34.286	1	233	<.001
Israel	34.310	1	233	<.001
Italy	2.001	1	233	.158
Japan	9.238	1	233	.003
Kazakhstan	24.547	1	233	<.001
Latvia	54.636	1	233	<.001

Luxembourg	28.363	1	233	<.001
Netherlands	29.238	1	233	<.001
Panama	78.035	1	233	<.001
Poland	5.947	1	233	.015
Russia	18.156	1	233	<.001
SaudiArabia	44.376	1	233	<.001
Slovakia	40.779	1	233	<.001
Slovenia	11.021	1	233	.001
SouthAfrica	18.298	1	233	<.001
SouthKorea	30.009	1	233	<.001
Spain	14.449	1	233	<.001
Sweden	12.249	1	233	<.001
Switzerland	13.413	1	233	<.001
Taiwan	11.895	1	233	<.001
UAE	10.105	1	233	.002
UK	22.115	1	233	<.001
USA	60.290	1	233	<.001

Uruguay	75.433	1	233	<.001
y2015	.	0	.	.
y2016	.	0	.	.
y2017	.	0	.	.
y2018	.	0	.	.
y2019	.	0	.	.
y2020	.	0	.	.
y2021	.	0	.	.

Probability distribution: Normal
Link function: Identity
[a]

a. Target: TEA

Appendix II: Panel Regression Data for Developing Nations Dataset

Fixed Effects[a]

Source	F	df1	df2	Sig.
Corrected Model	21.473	27	259	.000
PostSchoolEntrepreneurialEducationamp Training	.405	1	259	.525
EntrepreneurialIntentions	150.027	1	259	.000
InfrastructureMarket	.319	1	259	.573
BusinessFreedom	1.339	1	259	.248
GovernmentConditions	.006	1	259	.938
InfraBizFreedom	1.007	1	259	.316
InfraGov	.057	1	259	.812
y2015	.	0	.	.
y2016	.	0	.	.
y2017	.	0	.	.
y2018	.	0	.	.
y2019	.	0	.	.
y2020	.	0	.	.

y2021	.	0	.	.
Brazil	8.057	1	259	.005
Colombia	9.501	1	259	.002
Ecuador	65.870	1	259	<.001
Egypt	36.531	1	259	<.001
India	.511	1	259	.475
Iran	8.077	1	259	.005
Kazakhstan	1.660	1	259	.199
Latvia	4.625	1	259	.032
Panama	10.102	1	259	.002
Poland	4.840	1	259	.029
Russia	.010	1	259	.922
SaudiArabia	.441	1	259	.507
SouthAfrica	.364	1	259	.547
Uruguay	5.983	1	259	.015

Probability distribution: Normal
Link function: Identity
[a]

a. Target: TEA

Appendix III: Panel Regression Data for Emerging Nations Dataset

Fixed Effects[a]

Source	F	df1	df2	Sig.
Corrected Model	11.683	26	260	.000
PostSchoolEntrepreneurialEducationamp Training	1.428	1	260	.233
EntrepreneurialIntentions	97.595	1	260	.000
InfrastructureMarket	.488	1	260	.486
BusinessFreedom	.279	1	260	.598
GovernmentConditions	3.492	1	260	.063
InfraBizFreedom	.041	1	260	.840
InfraGov	1.679	1	260	.196
y2015	.	0	.	.
y2016	.	0	.	.
y2017	.	0	.	.
y2018	.	0	.	.
y2019	.	0	.	.
y2020	.	0	.	.

y2021	.	0	.	.
Chile	7.836	1	260	.006
China	2.139	1	260	.145
Croatia	.328	1	260	.567
Cyprus	.309	1	260	.579
Greece	.164	1	260	.686
Indonesia	6.197	1	260	.013
Ireland	2.094	1	260	.149
Israel	.413	1	260	.521
Poland	10.545	1	260	.001
Slovakia	.169	1	260	.681
Slovenia	1.991	1	260	.159
Taiwan	1.635	1	260	.202
UAE	7.391	1	260	.007

Probability distribution: Normal
Link function: Identity
[a]

a. Target: TEA

Appendix IV: Panel Regression Data for Developed Nations Dataset

Fixed Effects[a]

Source	F	df1	df2	Sig.
Corrected Model	12.597	24	262	.000
PostSchoolEntrepreneurialEducationamp Training	1.579	1	262	.210
EntrepreneurialIntentions	129.236	1	262	.000
InfrastructureMarket	.003	1	262	.954
BusinessFreedom	.146	1	262	.702
GovernmentConditions	2.976	1	262	.086
InfraBizFreedom	.551	1	262	.459
InfraGov	1.407	1	262	.237
y2015	.	0	.	.
y2016	.	0	.	.
y2017	.	0	.	.
y2018	.	0	.	.
y2019	.	0	.	.
y2020	.	0	.	.
y2021	.	0	.	.

Canada	17.305	1	262	<.001
France	4.078	1	262	.044
Germany	.064	1	262	.801
Japan	.052	1	262	.820
Luxembourg	.122	1	262	.727
Netherlands	.589	1	262	.443
Spain	.051	1	262	.821
Sweden	.407	1	262	.524
Switzerland	1.709	1	262	.192
UK	4.628	1	262	.032
USA	11.757	1	262	<.001

Probability distribution: Normal
Link function: Identity
[a]

a. Target: TEA

VITA

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Education

2007-2012	B.S., Public Administration University of Nevada Las Vegas Las Vegas, NV
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2019-2020 Distinguished Professor of Project Management
American University of Afghanistan - Business
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Honors & Awards

2022 Scholars Transforming Academic Research Symposium (STARS) Millionaire Award Recipient for highest research dollars by a Principal Investigator, University of North Florida

2022 Scholars Transforming Academic Research Symposium (STARS) Millionaire Award Recipient for highest research dollars by a Department (As Department Head), University of North Florida

2020 Distinguished Adjunct Instructor Award, Marketing & Entrepreneurship, University of Nebraska, Omaha

2019 Distinguished Professor of Project Management, American University of Afghanistan & U.S. State Department Partnership Program