UNIVERSIDADE CATÓLICA PORTUGUESA

FROM MACROECONOMICS TO ENTREPRENEURIAL INTENTION FORMATION IN KENYA

A two folded perspective of macro- and behavioural economics

Dissertation to Universidade Católica Portuguesa to obtain a Master's Degree in Psychology in Business & Economics

By

Jorrit Miles Knief

Faculdade de Ciências Humanas and Católica Lisbon School of Business and Economics

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Acknowledgment

The completion of this thesis would have been unattainable without the invaluable assistance of my supervisor, Professor Maria Leonor Almeida. I express my sincere gratitude for her unwavering commitment and willingness to guide me throughout this significant phase of my Master's degree. I would also like to extend my appreciation to all those at Universidade Católica Portuguesa who contributed to this process, particularly Professor Joana Carneiro Pinto, who facilitated my connection with Maria Leonor when I expressed interest in entrepreneurship and innovation.

Furthermore, I extend my thanks to all those involved in this project at the Technical University of Kenya (TUK) in Nairobi. Without their cooperation, I would have been unable to collect the essential data necessary to complete this thesis. I am particularly grateful to Dean Professor Collins Miruka and Dr. Esther Mwiti for their invaluable contributions. I hope that we will continue to work towards a better world long after my thesis defense.

Lastly, I express my deep appreciation to my parents and family for their unwavering support, encouragement, and motivation. Although you may feel that your contribution to my academic and professional achievements is minimal, your continued interest and unwavering support are crucial to my success. I am forever grateful for your love, encouragement, and strength.

Abstract

This paper presents a two folded perspective of macro and behavioural economics on entrepreneurial activities in developing countries. First, it will examine the macroeconomic perspective and explore the impact of entrepreneurship in developing countries. Second, it will present an empirical analysis from a behavioural economics perspective that investigates the individual factors influencing entrepreneurial intentions. The results indicate a positive correlation between entrepreneurship and socio-economic development. However, the review reveals that there is a significant research gap between developed and developing countries, and further studies are necessary to fully comprehend this relationship. For the empirical part of the dissertation, structural equation modeling was employed to understand the relationship between entrepreneurial culture, entrepreneurial education, and entrepreneurial intention. The study involved 235 university students who had taken at least one entrepreneurship course. The data was collected through a questionnaire that operationalized the constructs evaluated by the model. Hereby, the construct used were based on well-established items from earlier research to ensure the psychometric qualities of the instruments. The findings reveal that entrepreneurial culture has a direct impact on entrepreneurial intention, while entrepreneurial education does not show a significant influence. However, entrepreneurial mindset mediates both relationships, explaining an indirect effect of entrepreneurial culture and entrepreneurial education. Finally, by combining both fields of research, recommendations for future research in this area are presented. It consolidates the main contributions of the thesis by reflecting on the previous work and examining the limitations that hinder the ability to draw inferences from the two studies. Recommendations for future researchers to bridge the research gap and gain a more comprehensive understanding of the relationship between macro- and behavioural economics is provided.

Keywords: socio-economic development, developing countries, entrepreneurship, entrepreneurial culture, entrepreneurial education, entrepreneurial mindset, entrepreneurial intention

Resumo

A presente investigação incide sobre a atividade empreendedora em países em desenvolvimento, adotando uma dupla perspetiva, macroeconómica e comportamental. Primeiramente, examinará a perspetiva macroeconómica e explorará o impacto do empreendedorismo nos países em desenvolvimento. Seguidamente, apresentará uma análise empírica da perspetiva da economia comportamental que investiga os fatores individuais que influenciam as intenções empreendedoras. No entanto, a revisão de literatura revela que há uma lacuna significativa de investigações entre países desenvolvidos e em desenvolvimento, mais estudos são necessários para uma compreensão mais abrangente dessa relação. Na parte empírica da investigação foi utilizado o modelo de equações estruturais para analisar a relação entre cultura empreendedora, educação empreendedora e intenção empreendedora. Participaram no estudo 235 estudantes universitários que tinham feito pelo menos um curso de empreendedorismo. Os dados foram recolhidos por questionário que operacionalizou os construtos avaliados pelo modelo. Foram utilizados itens bem estabelecidos provenientes de investigações anteriores para garantir as qualidades psicométricas dos instrumentos.

Os resultados revelam que a cultura empreendedora tem impacto direto na intenção empreendedora, enquanto a educação empreendedora não apresenta influência significativa. No entanto, a mentalidade (*mindset*) empreendedora media ambas as relações, explicando um efeito indireto da cultura empreendedora e da educação empreendedora. Finalmente, combinando as duas áreas científicas, são apresentadas recomendações para futuras investigações, consolidando as principais contribuições da tese, refletindo sobre o trabalho anterior e examinando as limitações que impedem a capacidade de tirar inferências dos dois estudos. São fornecidas recomendações estudos futuros de forma a preencher a lacuna da investigação e obter uma compreensão mais abrangente da relação entre economia macro e comportamental.

Palavras-chave: desenvolvimento socioeconómico, países em desenvolvimento, empreendedorismo, cultura empreendedora, educação empreendedora, mentalidade *(mindset)* empreendedora, intenção empreendedora

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List of Abbreviations

AVE	Average Variance Extracted
BRICS	Brazil, Russia, India, China, and South Africa
EC	Entrepreneurial Culture
EE	Entrepreneurial Education
EI	Entrepreneurial Intention
EM	Entrepreneurial Mindset
GDP	Gross Domestic Product
GEM	Global Entrepreneurship Monitor
GNI	Gross National Income
GoF	Goodness of fit
HDI	Human Development Index
KSH	Kenyan Shilling
MENA	Middle East and North Africa
MSME	Micro, Small, and Medium-sized Enterprises
SEM	Structural Equation Modeling
SCT	Social Cognitive Theory
SMEs	Small and Medium-sized Enterprises
TEA	Total Entrepreneurial Activity
TUK	Technical University of Kenya
VC	Venture Capital
WoS	Web of Science

CHAPTER 1: General Introduction

The analysis of economic development is usually focused on broader macroeconomic concepts and issues, while more specific issues, such as the interactions between policies, institutions, and society, receive less attention. One such area is that of entrepreneurs, entrepreneurship, and the entrepreneurial processes. Although early work by Schumpeter (1934) did place emphasis on the importance of entrepreneurs by researching their role in economic development, this importance is still often overlooked or given minimal significance.

Any attempt to appreciate the importance of entrepreneurship requires first developing an accurate definition. The definition given by the World Bank (n.d) defines entrepreneurship as "the activities of an individual or a group aimed at initiating economic activities in the formal sector under a legal form of business." While this definition captures much of the spirit of entrepreneurship, the topic remains broad and is composed of numerous activities, such as starting a business or service or developing new technologies or innovative techniques (Bruyat & Julien, 2001).

All these fundamental components of entrepreneurship are also crucially important drivers of economic growth and development, and nowhere is this felt more acutely than in developing countries (Dvouletý et. al., 2018). These activities affect all levels of the economy, from the creation of jobs, gains in efficiency, resources management and growth in economic activity at the macroeconomic scale to the welfare and well-being of companies and individuals at the microeconomic scale (Urbano et. al., 2019a; Dvouletý et. al., 2018; Feki & Mnif, 2016). It is therefore important to include both ends of this spectrum in the analysis on entrepreneurship's effect on the economy. By understanding both levels, we may gain a deeper understanding for the influence of entrepreneurship on the economy and how it can be used to foster economic growth and prosperity.

While entrepreneurial behaviour has been previously considered in aggregate when included in economic analyses, recent literature has begun to investigate entrepreneurial behaviour at the individual level. This change of focus is in recognition of the importance of both the context within which entrepreneurs operate and of the impact that individual and societal factors can have on the development of entrepreneurial ideas and the actions entrepreneurs take to realize these ideas (Kuratko, 2005). The individual factors can include personality, cognitive style and specific motivational drives, which may all be affected or informed by an entrepreneur's societal, cultural and familial backgrounds, norms and networks and how these relate to and perceive decisions to take entrepreneurial career paths (Martin et.

al., 2013; Kuratko, 2005). This individual-level analysis allows researchers to not only improve their understanding of the factors that contribute to the initiation or outcome of entrepreneurial behaviours, but to also inform policies, programs and interventions that can more effectively encourage, promote and support the actions of individual entrepreneurs.

While the majority of research in economics is focused on the broad classical fields of either macroeconomics or microeconomics, a much smaller body of work has turned its attention to behavioural economics. There is particular disparity in the literature that includes (or fails to include) developing countries (Neumann, 2021). By shifting to a more behaviourally focused approach, the present thesis aims to gain a deeper understanding of the psychological and social factors that influence the formation of entrepreneurship in developing countries.

The present thesis leverages the predominance of research on the developed world and focuses on emerging countries. First, it will examine the macroeconomic perspective and explore the impact of entrepreneurship in developing countries (Chapter 2). Second, it will present an empirical analysis from a behavioural economics perspective that investigates the individual factors influencing entrepreneurial intentions (Chapter 3). Lastly, building on the insights obtained from the previous sections (Chapters 2 and 3), the present thesis will offer initial recommendations for more rigorous research on this topic, as well as outline suggestions for policies and actions institutions can take to foster entrepreneurial behaviour in developing countries (Chapter 4).

Meta scientific background

> *Traditional economics is based on imaginary creatures sometimes referred to as 'Homo economicus.' I call them Econs for short. Econs are amazingly smart and are free of emotion, distraction or self-control problems. Think Mr. Spock from 'Star Trek.'*
>
> *(Richard Thaler, 2017 Nobel Prize Winner - behavioural economics)*

This dissertation was written in light of the latest development in contemporary behavioural economics, which highlight the significance of incorporating psychological variables in addition to the traditional "homo economicus" and his rational decision-making. Given the scope and variety of issues covered in this dissertation and to contextualize the

decisions in the two empirical chapters (chapter 2 and 3). The following section include some background information to cover all of the investigated perspectives. In addition, this section gives background information about Kenya and the rationale behind its selection as the lone country investigated in Chapter 3, as opposed to several developing countries examined in Chapter 2. Finally, the aims and objectives will be outlined.

Macroeconomics

Macroeconomics is a specialized area of study within the field of economics that focuses on analyzing the economy at an aggregate level. This field has its roots in John Maynard Keynes's 1936 publication, The General Theory. Macroeconomists are primarily concerned with understanding and influencing economic behaviour such as unemployment rate, gross domestic product (GDP), and overall price level (Bleaney &Nishiyama, 2002). Consequently, macroeconomic analysis deals more with general levels of prices rather than individual prices. The primary goal for macroeconomists is to develop government policies which create optimal social welfare outcomes for society as a whole; this requires an examination of three major areas: fiscal policy (taxes & spending), monetary policy (interest rates & money supply) and international trade/exchange rates between countries or regions. Fiscal policies involve taxation decisions by governments while monetary policies include setting interest rates to influence investment decisions by businesses or individuals; both have direct impacts on GDP growth over time periods ranging from short-term changes to long-term trends in economic activity across nations or regions globally (Bjørnskov & Foss, 2016). Finally, exchange rate fluctuations can affect import/export dynamics between countries so it’s important for policymakers to understand how these forces interact when making decisions about their own economies relative other nations'.

For macroeconomists, the main measure of how the economy is doing is aggregate output. Hence, economic growth refers to an increase in aggregate production that leads to a rise in income, employment, and consumption, and subsequently a greater standard of life. (Bleaney &Nishiyama, 2002). The second objective is a slow rate of unemployment. The unemployment rate refers to the proportion of the labor force that is unemployed. Now, the more people employed, the more efficient is the economy. It includes the investigation of the origins of unemployment, the effect of labor market changes on inflation, and the question of whether political action may help reduce unemployment (Carree & Thurik, 2010). The third objective is stability of prices. It entails preventing both inflation and deflation. Inflation is a rise in the general level of prices. It typically complicates economic decision-making and slows

economic growth (Bleaney &Nishiyama, 2002). On the other hand, deflation is a decline in the general level of prices. It's usually accompanied by the threat of a slowdown in economic growth. This section places significant emphasis not just on the analysis of monetary and fiscal policy, but also on the examination of such policies. This covers the effects of interest rate changes made by the central bank on the overall development of the economy, as well as the effects of fiscal initiatives such as tax cuts or increased government expenditure on the economy. This is exemplified by the effect of the central bank's interest rate variations on economic growth as a whole.

Finally, study of the development and evolution of economic systems is an extra issue of significance within macroeconomics. It is necessary to conduct research on issues such as how economic development occurs, what factors drive growth, and the role of technology and innovation in the economic development process (Carree et. al., 2007). Moreover, macroeconomics investigates the many dimensions of the global economy. It addresses a wide range of topics, such as the impact of international trade flows and currencies on the expansion of the global economy and the encouragement of international collaboration to address global concerns like climate change and poverty. Numerous businesses, such as economic policy, financial analysis, corporate planning, and research, make substantial use of macroeconomics in their daily operations (eg. Bjørnskov & Foss, 2016; Van Praag & Versloot, 2007).

Microeconomics

While macroeconomics focuses on the larger concepts of the economy, microeconomics deals with the behaviour of individuals and firms on a smaller scale. It analyses how decisions are made based on the allocation of limited (scarce) resources (Gravelle & Rees, 2004). Hence, microeconomics is needed to analyze information for the day-to-day economic activity and how actors interact with each other. This interaction creates a market for goods and services that greatly impacts the price level of products.

Within microeconomics three focus areas arise: First, it defines which product(s) are going to be produced with the scarce resources. Secondly, it defines the level of production and inputs. Third, it allocates the products to buyers within the system through a market (Gravelle & Rees, 2004). Hereby, the study of microeconomics examines how consumers allocate their spending among different goods, what factors influence their purchasing decisions, and how they respond to price changes. Similarly, it examines how firms plan their production and how they set their prices to maximize profits. Overall, this is considered the analysis of markets and market structures.

Finally, Microeconomics is also concerned with the analysis of market failures that occur when market freedom is constrained by lack of information, incomplete markets, or externalities. In so called "command economies", central planners like government interfere in the free market to deal with problems like pollution or poverty (Gravelle & Rees, 2004). Most economies of the world have a mixed economy of free demand and supply with a few governmental interventions.

Behavioural Economics

> *Although not every application of behavioural economics will make the world a better place, I believe that giving economics a more human dimension and creating theories that apply to Humans, not just Econs, will make our discipline stronger, more useful, and undoubtedly more accurate.*
>
> *(Richard Thaler, 2017 Nobel Prize Winner - behavioural economic)*

Behavioural economics is an interdisciplinary field that combines principles from psychology and economics to align economic theory with the reality of human behaviour. While traditional economics offers a benchmark model for optimization based on rationality and self-interest, behavioural economics acknowledges that people are not always rational and are influenced by a variety of factors, including cognitive biases, social norms, emotions, and heuristics (Tversky & Kahneman, 1983). Herbert Simon's work in the 1940s indicated that firms often accept second-best options due to their limited cognitive abilities and time constraints, leading to the concept of bounded rationality. This idea has been further developed by Tversky and Kahneman (1983) who demonstrated that individuals, households, and firms utilize "rules-of-thumb" or heuristics when making decisions. These heuristics are mental shortcuts which help people process information quickly but may lead them astray from optimal solutions. For instance, they studied two well-known heuristics: availability and anchoring effects. The availability effect occurs when an individual assesses the probability of an event based on how readily it comes to mind; this can be misleading if memories are biased or incompletely informed about reality thus causing decision makers not always choose what is best for them economically speaking. Similarly, the anchoring effect leads individuals to be influenced by initial anchor points even if those points have no relevance whatsoever with respect with current circumstances. These biases can influence decision makers away from

rational choices towards suboptimal alternatives as suggested initially by Herbert Simon's work in 1940s.

Other research supports this view and show that humans to not act like robots but rather include social norms or psychological factors when making decisions. For example, Camerer (1999) showed that people's decisions are often influenced by the actions and attitudes of those around them, and that they may also be influenced by emotions such as fear, happiness, or anger.

Overall, at least in theory, the study of behavioural economics adds a valuable perspective to economics. It seeks to explain why people make decisions that are not necessarily in line with traditional economic models, such as those based on rational choice theory (Kahneman & Tversky, 1979). Hence, the field of contemporary behavioural economics is expanding as a result of a growing number of research and significant findings.

Entrepreneurship

Entrepreneurship is the process of conceptualizing, developing, and operating a new business or enterprise. Entrepreneurs use their skills to discover and predict unmet customer needs to offer answers in the form of prospective new business concepts. Entrepreneurship can take numerous forms, including the establishment of a new business, the creation of a new product, or the establishment of a new market (Van Praag & Versloot, 2007). Successful entrepreneurs are often characterized by their capacity to recognize and capitalize on opportunities, their willingness to assume risks, and their adaptability to fluctuating market conditions (Bruyat & Julien, 2001). Entrepreneurship is an interdisciplinary field that combines insights from economics, sociology, psychology, and management to explore the factors contributing to success or failure of new ventures. It has been proven that entrepreneurship plays a key role in society by fostering economic growth and innovation through creativity and innovations (Feki & Mnif 2016). The importance of this field for the economy is evident in its visible relevance as both a business topic as well as scientific research point-of-view (Urbano et. al.,2019a).

Around the world, government focuses on promoting entrepreneurs and small businesses due to their potential for creating social and economic wellbeing. Entrepreneurial activities can help create jobs, promote technological development through investments in research and development projects, increase competitiveness, facilitate access to financial resources or enhance human capital formation among others (Urbano et. al., 2019b). Therefore, it can be

seen how important entrepreneurship is when it comes to improving economies not only nationally but globally too.

Additionally, it is important to recognize that entrepreneurship is not without its challenges and risks. Starting and running a business can be a complex and uncertain process, and not all entrepreneurial ventures are successful. These challenges can be divided into two categories: external and internal. External challenges include a lack of access to credit, limited access to markets, inadequate infrastructure, and a lack of entrepreneurial education and training. Internal challenges include a lack of resources, weak management capabilities, and a limited understanding of business concepts. (Meyer, & Meyer, 2017). Government, NGOs, and other organizations support entrepreneurs in (developing) countries. These initiatives include providing access to credit, training and mentoring programs, and business incubators and accelerators. Furthermore, some governments have implemented policies and regulations to support entrepreneurs, such as tax incentives and loan guarantees (Bjørnskov, & Foss, 2016; Bjørnskov, & Foss, 2013).

Developing Countries

Within the fields of politics and research, "developing countries" are often described as countries that are economically and socially less developed due to various factors. There is no universally accepted definition for developing countries. The most used list and criteria are defined by the United Nations (n.d) who defines developing countries as a country “with a relatively low standard of living, undeveloped industrial base, and moderate to low Human Development Index (HDI). This index is a comparative measure of poverty, literacy, education, life expectancy, and other factors.” Typically, developing countries have lower values in these indicators compared to industrialized countries which often leads to development processes that is characterized by political instability, lack of resources, and social inequality. Sachs et al. (1999) contend that geography is a primary driver of a country's income level and stage of economic development due to its effects on disease burden, agricultural production, and transportation costs. This view is contradicted by the findings of Rodrik et al. (2004), who emphasize the importance of institutions for economic development over trade integration and location. Nevertheless, Gwartney et al. (2004) demonstrate that the two techniques can be integrated to explain disparities in growth, income, and country-level development.

Despite the challenges of political instability, lack of resources, and social inequality, developing countries are home to a large and diverse population, and are often rich in natural

resources and cultural heritage. Many developing countries are working to overcome the obstacles to development, aiming to creat a better future for their citizens (Lingelbach et. al., 2005). This often involves working with international organizations and donor countries to secure funding and technical assistance, as well as implementing domestic policies aimed at promoting economic growth and social equity.

Kenya

As demonstrated above, the exploration of (developing) countries entails numerous obstacles that must be confronted in any research endeavor. Although diversity at a macro level may be viewed as a valuable resource, the overlap of multiple countries in micro and behavioural research may reduce the significance of the findings due to cultural, institutional or resource differences. Hence, for the purposes of this paper, the author has chosen to focus chapter 3's research on a specific country to enhance the likelihood of generating meaningful results. With governmental elections at the end of 2022 and a new president who planned to establish a Ministry of Cooperatives and Small and Medium-sized Enterprises, Kenya has been chosen to be investigated.

As Micro, Small, and Medium-Sized Businesses (MSMEs) employ around 86% of the population and provide approximately 45.5% of the GDP in Kenya, the MSME sector is regarded as the backbone of Kenya's economy (Kenya National Bureau of Statistics, n.d.). Despite the significant contribution of MSMEs to the economy as a whole, Kenya has struggled to thrive during the past decades. In addition to corruption, the lack of credit, institutions, and education has been a significant problem.

In his inauguration speech, President William Ruto announced the formation of the Ministry of Cooperatives and Small and Medium-Sized Enterprises. Establishing the Ministry of Small and Medium-Sized Enterprises ensures that the appropriate Ministry will examine the sector's difficulties in depth and take decisive measures to protect the economy. Yet, the success of the ministry is contingent on the designated minister's ability and propensity for corruption. In addition, the president announced the creation of a 50-billion-kenya-shilling (KSH) fund to assist small enterprises and entrepreneurs (Kenya National Bureau of Statistics, n.d.). With this change in environment, chapter 3 will investigate factors that influence the entrepreneurial intention of youth in Kenya.

Aims and Objectives of this Dissertation

This dissertation's fundamental objective is broad: to contribute to the literature on the effect of entrepreneurship in developing countries from a macroeconomics and behavioural economics viewpoint. This goal is represented throughout the dissertation and is subdivided into three further objectives.

The first objective of this thesis is to provide a comprehensive overview of entrepreneurship research from a macroeconomic perspective. This aim has two sub-aims: to discover and list as many papers as possible that analyze the impact of entrepreneurship on socio-economic development in developing countries, and to synthesize the key findings from these studies. The second chapter of this thesis concentrates on these two objectives, conducting a preliminary systematic scoping review of entrepreneurship from a macroeconomic perspective.

The second objective of this thesis is to make a contribution to both empirical and theoretical research on the impacts of entrepreneurship in developing countries. This objective is associated with the goal of conducting and presenting an empirical study that tests the influence of entrepreneurial education and entrepreneurial culture on entrepreneurial intention, with the mediating factor of entrepreneurial mindset. The third chapter of this thesis is centered on realizing this objective and its associated sub-goals.

The last aim of this thesis is to combine both research fields and conduct a critical evaluation of the current practices in entrepreneurial research in developing countries. The objective corresponding to this aim is to provide a comprehensive list of recommendations for future research on the topic. This objective will be answered in the discussion sections of the second and third chapters, as well as finishing the dissertation with a list of recommendations for future research in chapter 4. For ease of reference, Table A.1 (adopted by Brazão, 2019) summarizes the outlined aims and objectives.

CHAPTER 2: Systematic Literature Review

The study of entrepreneurship has attracted the attention of a number of social scientists over the course of the past two decades; yet this field of research is still maturing and increasing in scope. In today's modern culture, entrepreneurial activities are held in extremely high esteem, and successful businesspeople are celebrated for their accomplishments. Research that is pertinent and comes from a variety of scientific fields has discovered empirical proof of the benefits that are brought about by entrepreneurship. The impact that entrepreneurs have on economic growth, job creation, and innovation are topics that are frequently discussed in the media and in the literature (Fritsch & Mueller, 2004, 2008).

Nevertheless, several empirical investigations demonstrate that there are circumstances in which the effects of entrepreneurial activity might be detrimental (e.g. Mwatsika, 2022; Fritsch & Mueller, 2004, 2008). As further researched by Henrekson & Sanandaji (2014), there are circumstances in which there is a negative relation between the percentage of people in a nation who are self-employed and the GDP per capita. This relationship takes a favourable turn when several measures, such as the degree of innovation, financially backed (by Venture Capital) entrepreneurs, or incorporated start-ups are taken into account (Henrekson & Sanandaji, 2014).

The inconsistent outcomes regarding the relationship between entrepreneurship and economic growth may be due to the intricate connection between the two. Previous studies investigating the macroeconomic effects of entrepreneurship have shown that various factors, including industrial affiliation, the level of development in a country, and the number of firm owners in a locality, have a significant impact on the outcome of entrepreneurship (Fritsch & Mueller, 2004, 2008). As further information became available on entrepreneurship, researchers found that only a small percentage of new businesses, such as innovative firms and those with high growth aspirations, actually generate economic value (e.g. Szerb et al. 2018; Henrekson & Sanandaji, 2014). Understanding the multidimensional factors of entrepreneurship and how it collectively impacts the economy is crucial for empirical research, given the apparent importance of this relation. As a result, a systematic analysis has been crucial not only for the academic field of entrepreneurship but also for policymakers globally. They need comprehensive data on the influence of entrepreneurship to encourage the right types of entrepreneurial activities under suitable conditions. Therefore, it is not surprising that numerous studies have already consolidated the immense amount of research on the economic consequences of entrepreneurship. Van Praag and Versloot (2007) examined 57 publications

published between 1995 and 2007 in a methodical manner. The authors confined their research to small enterprises (less than 100 employees), new market entrants, and companies created during the past seven years. Hereby, the authors did not set any exclusion criteria for countries and therefore included developed and developing countries. A similar methodology was employed by Block et al. (2017), who extended their investigation to include publications published between 2000 and 2015. In addition, Bjrnskov and Foss (2016; systematic literature analysis of 28 studies) and Urbano and colleagues (2019a; comprehensive literature review of 104 studies published between 1992 and 2016) have examined the link between institutional environment, entrepreneurship, and economic growth. Neumann (2021) conducted the most current comprehensive literature analysis on economic growth through entrepreneurship, extending previous studies to include not only social but also environmental elements. Surprisingly little research focuses on developing countries in light of the most recent advancements in the field.

As suggested by Neumann (2021), the research at hand addresses the research gap in developing countries through a systematic analysis of published empirical contributions that cover topics linking entrepreneurship and economic development. The importance is further emphasized by the fact that the local level of development is a significant factor in determining the influence of entrepreneurship, with developing nations lagging behind other nations worldwide (Neumann, 2021). In this way, the study follows Neumann (2021) by not only considering economic indicators of well-being, such as GDP, employment rates, and innovation capabilities, but also taking into account social indicators, such as income inequality, as well as environmental indicators such as CO2 emissions. Throughout the thesis, all these factors will be considered under the umbrella term of socio-economic development. The literature review will organize contemporary academic arguments on the role of entrepreneurship in socio-economic growth in developing nations based on a collection of studies in the social, environmental, and economics disciplines. The research question addressed is: *How does entrepreneurial activity affects socio-economic development in emerging economies?*

In addition to its importance in the academic world, the systematic evaluation of the relevant literature could also be applicable to certain procedures in the fields of education, politics, and business. Educationally speaking, curriculums for macroeconomics and microeconomics, as well as courses on entrepreneurship, could benefit from the present research. For lawmakers, having a deeper understanding of the innovative high-growth entrepreneur might lead to more targeted efforts to help high-potential entrepreneurs. Finally,

in a similar vein, the research at hand may be valuable to practitioners such as venture capitalists and business incubators (Block et al., 2016).

Method

A systematic literature review was used to address the research question at hand. Thus, the research undertook an examination of past theoretical and empirical data taken from works published in reputable peer-reviewed journals. Although time-consuming, this strategy is comprehensive since it gathers evidence for a specific subject from several sources and various empirical approaches, while also helping to minimize the effects of any possible biases in the original literature (Denyer & Tranfield, 2009).

Search Strategy and Study Selection

Within the constraints of time and resources, the purpose of this chapter of the dissertation at hand is to identify as many relevant empirical research as is reasonably possible. As a result, the author chose the databases that would be searched (based on those that were the most extensive and were accessible through the university) and utilized keywords to ensure that all relevant articles were included while minimizing the number of false positives. The current investigation makes use of an empirical definition of entrepreneurship, economic development, and developing countries that is relatively broad. This is performed to minimize overlooking studies that could prove to be of potential significance. In addition, a number of different scoping studies related to the topic were analyzed (eg. Tan & Taeihagh, 2020). The insights that were gathered from the initial search phase were used to further create relevant search phrases, which ultimately led to the boolean search string that is displayed in appendix B.1. Only research that was peer reviewed was taken into account in this investigation. This was done to enhance the study's validity, reliability, and robustness and to reduce the possibility of bias. After that, a methodical search was conducted in three stages utilizing the aforementioned search string to browse through titles and abstracts in the EBSCO (Business Source Complete) and Web of Science databases (WoS). It started off with words and phrases related with entrepreneurship. Second, the author inserted a search phrase for economic development, and for the entire sequence, keywords for developing countries were added. Finally, before collecting the data a short check-up with the thesis supervisor has been made to approve the search string. This was considered necessary, as the literature review was not further supported from any other researcher. The final search string can be found in Appendix

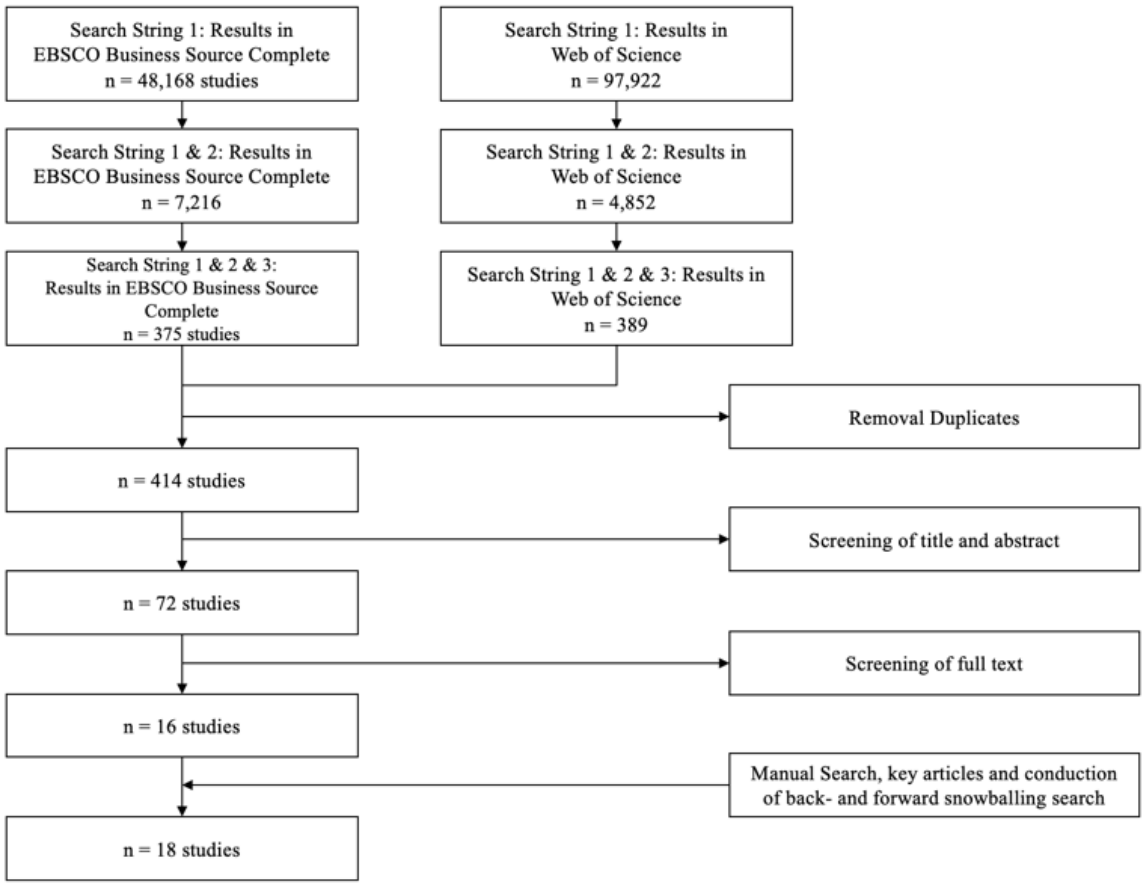
B.1. All of the data that were collected were imported into Mendeley, and any unnecessary copies were removed by the program with its “remove duplicate” feature.

The studies that were obtained during the main search were subjected to a careful analysis in order to determine whether or not they were suitable for the goal of this research. The authors decided on the inclusion criteria by following the suggestion made by Neumann (2021) and comparing the titles, abstracts, and, in some doubtful instances, the whole articles against the following set of selection criteria:

1. Studies must be done in developing countries. Studies in developed countries or mixture between the two categories were excluded.
2. Research must utilize at least one economic, social, or environmental welfare metric on an aggregated regional, national, or global level to assess the macroeconomic effect of entrepreneurship.
3. The effect of entrepreneurship must be measured using appropriate quantitative techniques. Excluded are studies that exclusively examine this topic from a theoretical or qualitative perspective.
4. Longitudinal panel data or sufficiently aggregated data must be analyzed in research. Excluded were studies that examined single spatial units for a brief period of time.

The preliminary investigation was carried out in November 2022. An initial data set consisting of n = 414 studies was obtained after duplicates were eliminated from the pool. The author then reviewed all study titles and abstracts in Mendely and highlighted each item that met the inclusion and exclusion criteria for inclusion in the upcoming screening phase. When it was not possible to evaluate compatibility based on the title and abstract of the study, or when the abstract was missing, the studies were put on hold for the subsequent phase. Following this stage, the total number of studies included was reduced to n = 72. The author then downloaded the full text of all items and analysed them in accordance with the aforementioned exclusion criteria. Lastly, a manual search of all included papers' reference lists and an ad hoc Google Scholar search were conducted to identify additional papers. The dataset was augmented with not-yet-included entries deemed suitable by title, abstract, and full text. Figure B.1 provides an overview of each discussed stage, and Table B.1 contains the 18 papers included for the analysis that will be elaborated on in the next section.

Figure B.1 Systematic Process of Data Collection and Selection



Results

The infeasibility of doing a meta-analysis stems from the fact that research in this field utilizes multiple metrics of entrepreneurship and economic development, and incorporates a diversity of research methods. Therefore, the given literature review focuses on general information, specifics of the analysed samples, the applied measures of entrepreneurship and economic development, and concise summaries of the pertinent results.

After applying the criteria outlined in the method section, 18 articles were found and chosen to illustrate the connection between entrepreneurship in developing countries and socio-economic growth. All of these publications suggest (explicitly or implicitly) hypotheses that entrepreneurship in developing countries affects socio-economic development, and the vast majority of them uncover empirical evidence to support these hypotheses. The present research thus only includes findings that analyzed a connection between entrepreneurship in developing countries and socio-economic growth.

Journal of Developmental Entrepreneurship has published the most number of articles on this subject with three publications. Following with two papers each are *Journal of Marketing Development and Competitiveness*, *Journal of Economic Perspectives*, as well as *Organizations and Markets in Emerging Economies.* In total, thirteen distinct journals were found. Other than those already mentioned, the other journals published only one article on the research topic.

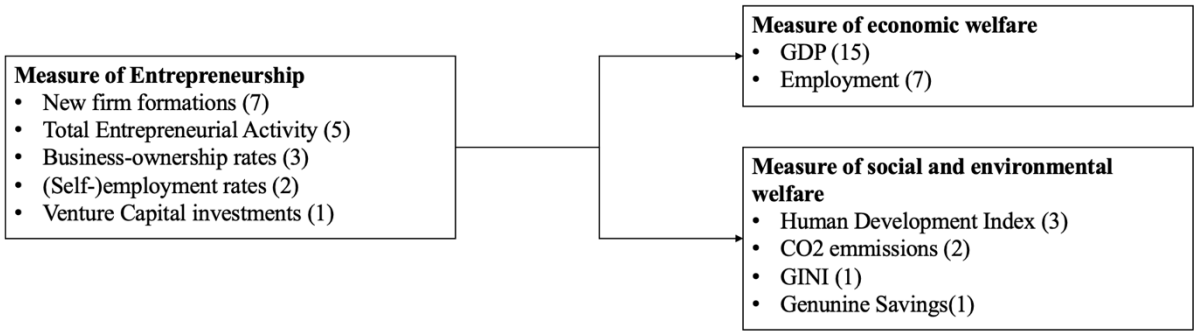
In the last five years, there has been a proliferation of publications exploring the connection between entrepreneurship and socio-economic growth in emerging economies. It is also important to note that the number of papers that have been published has continuously climbed from one article in 2003-2007, to three articles in 2008-2012, to six articles in 2013-2017, to the aforementioned eight pieces in 2018-2022 (see Table B.2). This growth suggests that the researched connection is a thriving and contemporary subject of study among a growing number of academics. Despite the fact that the overall number of published papers continues to be low.

The first result to highlight is that there are only few (n=18) studies that explicitly explain the relationship between entrepreneurship and economic, social, and environmental welfare in developing countries, despite the fact that a large number of studies take this as a given. More precisely, the presented literature review reveals a considerable number of studies on entrepreneurship and socio-economic development (n=12,068 – from EBSCO and WoS), however the addition of a search string for developing countries drastically decreased the number of results (n=414). Furthermore, the extensive analysis and further selection of publications demonstrates once more that the majority of these papers presume a positive association but do not expressly study it, instead analysing elements around the issue. Anyway, the detailed analysis reveals a positive relationship between entrepreneurship in emerging economies and socio-economic development. The publications included in this literature review are summarized in Table B.1 which specifies the measure(s) of entrepreneurship and socio-economic well-being as well as outlying results.

Figure B.2 gives and overview about the measurement of entrepreneurship, economic, social and environmental welfare. The formation of new firms has been the most prevalent indicator of entrepreneurship in the research evaluated (7 articles). Total entrepreneurial activity (TEA) is the second metric of entrepreneurship that has been frequently used (5 articles). This measure is taken from the Global Entrepreneurship Monitor's data collection (GEM) and gauges the percentage of the adult population of working age who are either engaged in actively starting a business or are in possession of and managing a business (Meyer

& Meyer, 2017). Regarding socio-economic aspects, the great majority of authors have concentrated primarily on the gross domestic product (GDP; 15 articles) and employment-related statistics (7 articles). No other indicators were found with regards to economic welfare which further underlines the research gap. In contrast, Neumann (2021) included publications which investigated the impact on economic indicators of national competitiveness or innovation, such as patent applications. However, only in developed countries. In contrast to the initial emphasis of this chapter on economic factors, few studies have studied the influence of entrepreneurship on environmental or social well-being, supporting the findings from Neumann (2021). Even though various common measures of social and environmental well-being (such as crime rates and ecological footprint) were deliberately included in the search string (see Appendix B.1). The HDI has been used the most (3 articles), followed by CO2 emissions (2 articles). The Gini coefficient and genuine savings were both only studied once.

Figure B.2 Applied Measures of Entrepreneurship, Economic, Social and Environmental Welfare.



Despite the challenges associated with data availability and theoretical assumptions, a modest body of work has begun to examine the connections between entrepreneurship and socio-economic well-being, specifically economic growth. The subsequent sections will examine the empirical findings of the 18 relevant papers.

Impact of entrepreneurship on economic welfare in developing countries

While Neumann discovered 102 studies exploring the influence of entrepreneurship on economic well-being, the focus on developing countries severely decreased this number (n=18). Nonetheless, the focus of these publications in relation to economic well-being is comprehensively consistent, with 15 papers studying the influence on GDP and seven on employment-related statistics. The measurement of entrepreneurship and socio-economic well

being used in this research varies between studies and therefore gives a broad consistent overview. For the measurement of entrepreneurship, seven items address new business formations, followed by TEA (5 articles). The rates of business ownership and (self-)employment were cited three and twice, respectively. Finally, Salehizadeh (2005) measured entrepreneurial activity using venture capital investment.

There appears to be a macroeconomic influence of new business formations on economic measures of wellbeing, according to the empirical evidence. Many studies have shed light on the topic of entrepreneurship and its effect on the economy. However, the majority of them were derived from the practices of localized, tiny businesses in mostly developed nations. The majority of the reviewed literature confirms the findings, providing empirical evidence that entrepreneurship has a generally positive effect on socio-economic factors, even when the literature is focused on developing countries. There is a consistent link between the two, and it is strong across a wide variety of geographical and cultural settings that have been investigated. Table B.3 summarizes the results of all assessed studies that examined the effect of entrepreneurship on GDP and employment. It demonstrates that the results are generally consistent with ideas from developed countries.

Salehizadeh (2005) conducted the first research in developing countries on the impact of entrepreneurship on socio-economic development. To quantify entrepreneurship, the technique used an indirect approach based on venture capital investment. In 2012, Mahadea (2012) and Dostiyarova (2012) developed the first direct approach. Over the years, the measurement of new firm formation used by Mahadea (2012) has garnered increasing interest in the area of research and was used by several studies. All subsequent studies will utilize GDP per capita as their economic well-being metric: In their samples, Feki and Mnif (2016) and Dhahri and Omri (2018) provide a wide picture of growing economies from all continents and include 35 and 20 nations, respectively. Adusei (2016) and Youssef and colleagues (2018) have taken a more targeted strategy by focusing their samples on the African continent. Finally, Sabra and Shreteh (2021) expand this territory to eight middle East and North Africa (MENA) nations. All studies using new firm formations as a predictor variable consistently demonstrate a favorable relationship between new business formations and GDP growth. Furthermore, the studies of Arouri et al. (2016) and Mahadea (2012) prove a positive impact of entrepreneurship on employment statistics.

In addition, the examined studies demonstrate that this correlation holds true not just for new firm formations as a measure of entrepreneurship, but also for TEA. While Urbano and colleagues (2019b) and Pounder and Gopal (2021) follow previous research and make use of

GDP per capita, Meyer and Meyer (2017) find that the positive impact also holds for overall GDP. However, in comparison to new firm formation, the TEA approach does not have an impact on employment statistic. While Tsyganova and Shirokova (2010) did not find a significant impact, Meyer and Meyer (2017) argue that there is no relation between the variables.

Other measurements of entrepreneurship yield few studies. Dostiyarova (2012), Dvoulet and colleagues (2018) and Meyer and Meyer (2019), all utilized the Business Ownership Rate (BOR) to assess the impact of entrepreneurship on GDP. While the results of Dostiyarova (2012) and Meyer and Meyer (2019) are similar with those of the aforementioned research, Dvoulet and colleagues (2018) is the only study to indicate a negative correlation. The authors discovered that entrepreneurial activity had a negative influence on a nation's GDP and Gross National Income (GNI), both immediately and over time. According to their perspective, there are a huge number of replicative entrepreneurs in emerging nations who do not substantially contribute to the economic prosperity of the country. Therefore, the impact of entrepreneurial activity on the country's development cannot be beneficial overall. In addition, they believe that emerging nations are at the pinnacle of technical advancement, which makes it difficult for MSMEs to innovate and expand.

A study by La Porte and Shleifer (2014) concentrated on the informal sector which refers to the engagement in the economy that occurs outside of the official legal and regulatory framework. (Adusei, 2016). Contrary to the results by Dvoulet and colleagues (2018), La Porte and Shleifer (2014) found that the overall effect of entrepreneurship is favourable and innovation is not a major determinant since the informal sector lacks technical access and innovation. Both samples include a large number of developing nations (48 and 68, respectively) spanning a period of 15 (2000-2015; Dvoulet et al., 2018) and 22 years (1990-2012; La Porta & Shleifer, 2014). Similar to La Porte and Shleifer (2014), Spremo and Mii (2015) explore entrepreneurship using metrics of (self-)employment. It is stated that small businesses are more immune to economic downturns than their larger counterparts, and that, over the investigated time period, SMEs saw a lower employment decrease. Small enterprises are the backbone of economic development and unemployment reduction. However, it is difficult to generalize these results since the sample size is confined to the Republic of Srpska, one of Bosnia and Herzegovina's two states. Finally, Salehizadeh (2005) analyzed venture capital investments on GDP and showed that increased investments lead to higher entrepreneurial activity which in return increases GDP per capita.

Impact of entrepreneurship on social and environmental welfare in developing countries

Notwithstanding the well-studied benefits of entrepreneurship on employment and GDP, the implications on social and environmental well-being have received less attention. This review of the literature contains just four studies that explored the impact of entrepreneurship on measures of social well being. With three articles using the HDI as a measurement, it is considered the most reliable indication. Amorós and colleagues (2021) argued that entrepreneurship is positively correlated to the HDI in underdeveloped nations. Using TEA as their independent variable, Dhahri and Omri (2018) discovered equivalent results. Dvoulet and colleagues (2018), in contrast to these findings, observed no substantial effect of TEA on HDI.

In addition, Amorós and colleagues (2021) examined the correlation between TEA and poverty reduction by presenting evidence of the importance of entrepreneurship in emerging countries. When looking at the Gini coefficient as an indicator of social welfare, their findings suggest that a country's entrepreneurial activity is linked to a decrease in poverty between 2010 and 2019.

Empirical studies on the impact of new business ventures on environmental well-being have revealed that entrepreneurship may have notable drawbacks. Dhahri and Omri (2018) and Youssef and colleagues (2018) found that the establishment of new businesses significantly increases national CO^2 emissions. Youssef and colleagues (2018) reported that this adverse impact on CO^2 emissions is so considerable that new businesses reduce adjusted net savings. Furthermore, they found that this effect is even more pronounced for informal new business formations. This conclusion is consistent with the findings of prior studies which found the impact of informal entrepreneurship on CO^2 emissions to be lower in industrialized nations with usually lower rates of informal entrepreneurship (Omri, 2017).

Discussion

Numerous studies have investigated the factors that drive entrepreneurial activity, the formation of new enterprises, and the introduction of new businesses. Insightful knowledge on entrepreneurship and the entrepreneurial process has also been obtained from these and other research avenues. However, the great majority of research were generated from the observations of small businesses functioning in a developed economy. There is currently a paucity of published research on entrepreneurship in developing nations, and this body of knowledge becomes much more restricted when it is narrowed to examine the socio-economic consequences of entrepreneurship in developing countries. Entrepreneurship is one of the most

important economic phenomena in developing nations that has gotten the least amount of attention. This lack of variability in research is attributable to the misconception that global entrepreneurship is identical to that of developing countries (Lingelbach et al. 2005). Yet, the present literature review indicates that entrepreneurship has a significant influence on socio-economic development in these nations.

It has been widely recognized as a key driver of economic development, with the potential to contribute to GDP growth, employment, and socio-economic factors. However, the impact of entrepreneurship on socio-economic development can vary significantly depending on various factors, including the regional context, level of informality, and social measures (Neumann, 2021). This discussion will put the impact of entrepreneurship on socio-economic development in developing countries into perspective. Various indicators of entrepreneurship, such as GDP, unemployment, HDI, Gini coefficient, and CO2 emissions, are used thereby. Furthermore, the present discussion section will consider regional differences between and within countries as well as the role of informality.

GDP

The impact of entrepreneurship on socio-economic development has garnered significant attention in the literature, with a focus on GDP or GDP per capita (Neumann, 2021). That is because entrepreneurship is often seen as a key driver of economic growth and development, potentially leading to the creation of new businesses, encouraging innovation, and creating jobs. One study by Urbano and colleagues (2019b) indicated that entrepreneurial activity has a favorable impact on economic development since it increases the number of new enterprises and a corresponding increase in GDP. This is backed by other research, such as that of Feki and Mnif (2016), who discovered that technical innovation coming from entrepreneurship, is positively connected with economic growth.

In addition to the GDP, the GDP per capita is an important indicator of economic progress since it reflects the average income and wealth of the people. Arouri and colleagues (2016) discovered that in Tunisia entrepreneurship is positively correlated with GDP per capita, demonstrating that entrepreneurship might contribute to increases in living standards. Similarly, Salehizadeh (2005) discovered that venture capital investments in developing nations relate to greater levels of GDP per capita, indicating that entrepreneurial activity might result in a rise in wealth and income.

However, the connection between entrepreneurship and GDP is not always straightforward. Adusei (2016) revealed that the influence of entrepreneurship on economic growth in Africa is mediated by a number of variables, such as the degree of economic development, the availability of financial resources, and the innovativeness of entrepreneurship.

Entrepreneurship has been an important area for research within economics due to its potential to drive innovation and create new opportunities for employment. Dvoulet and colleagues (2018) further advanced this field by categorizing entrepreneurs into two predominant types: replicative and inventive. Replicative entrepreneurs are those who replicate existing business models without introducing any significant innovations or improvements. On the other hand, inventive entrepreneurs are those who introduce new products or services through innovative ideas which have not been seen before in their respective markets. The findings suggest that entrepreneurial activity can be beneficial for African economies overall, while it may also depend upon what type of entrepreneur is prevalent within a specific nation's economy. Therefore, policy makers should endeavor to promote more creative forms of entrepreneurship when formulating strategies aimed at driving long-term sustainable development in developing countries.

In conclusion, the GDP and the GDP per capita are significant measures of economic progress, with entrepreneurship having the ability to contribute to GDP growth. Nevertheless, the link between entrepreneurship and these metrics is complicated and requires further analysis, especially when it comes to developing countries.

Employment Measures

Besides GDP unemployment is an additional essential indication of socio-economic growth, with entrepreneurship having the capacity to combat unemployment by generating new jobs. Small businesses are a vital source of employment and economic development, and it has the potential to contribute to job creation in South Africa, according to Mahadea (2012). This is corroborated by other research, such as Meyer and Meyer (2017), who discovered that entrepreneurial activity in the BRICS (Brazil, Russia, India, China, and South Africa) nations was positively correlated with economic development and employment. Nevertheless, it is essential to note that the link between entrepreneurship and employment is not always straightforward. Meyer and Meyer (2019), for example, claim that employment statistics are less affected by entrepreneurship and not always clearly significant. Especially when compared

to GDP. Moreover, the quality and durability of the employment provided by entrepreneurship might vary, which can have significant repercussions for socio-economic growth. Amorós and colleagues (2021) warn that entrepreneurship may not necessarily lead to a decrease in poverty and unemployment in developing nations if a less favourable environment, such as COVID-19, influences the overall market.

A further consideration is the gender gap in entrepreneurship, since women are often underrepresented compared to males. Tsyganova and Shirokova (2010) discovered that the gender gap in entrepreneurship is most evident in emerging nations, with severe repercussions for employment and socio-economic growth. Eliminating the gender gap in entrepreneurship might boost employment and economic development. Consequently, entrepreneurship has the ability to combat unemployment and contribute to economic growth and development by creating new jobs. Hence, it is important to consider these factors when evaluating the impact of entrepreneurship on employment and socio-economic development in developing countries.

Human Development Index

The HDI has been developed to estimate the socio-economic measures including but not limited to income, education and health data. It is frequently used to compare the prosperity of nations and offers insights into areas of improvement. Entrepreneurship can have a positive impact on the HDI by adding value to its three pillars which consist of economic, social and environmental factors. Dhahri und Omri (2018) found that entrepreneurship can foster the HDI by creating new business, generating income and wealth within a country. However, it is essential to note that entrepreneurship may not always result in favourable HDI outcomes. As mentioned above, Amorós and colleagues (2021) advise that entrepreneurship may not necessarily lead to a decrease in poverty and unemployment in developing nations, which are significant HDI indicators. To conclude, it can be said that entrepreneurship can impact the HDI in developing countries, but further research is necessary to fully understand the correlation.

CO2 emissions

CO^2 emissions are a primary cause of climate change and have considerable effects on socio-economic development. Entrepreneurship is seen as a significant barrier to reducing CO^2 emissions. Although the adoption of eco-friendly technology and practices by start-ups might cut CO^2 emissions, this impact has not been shown in developing nations. According to Dhahri

and Omri (2018), entrepreneurship boosts CO^2 emissions in undeveloped countries. The authors suggest that the emphasis on sustainability in developing nations is less than in the industrialized world. This is backed by other studies, such as Youssef and colleagues' (2018), who contend that the majority of African businesses attempt to reduce expenses by avoiding taxes, social security payments, and sustainability considerations. Conversely, if the outcome of CO^2 emissions depends on harmful technology or practices, entrepreneurship may also lead to a decrease in CO^2 emissions. Over the last decade, entrepreneurs and policymakers in industrialized nations have placed a greater emphasis on CO^2 emissions, and the current findings reveal a clear need to increase its significance in developing countries (Neumann, 2021).

CO^2 emissions are a key measure of socio-economic growth, and entrepreneurship has the ability to reduce CO^2 emissions via the adoption of environmentally friendly technology and practices. However, the significance and level of research of the impact of entrepreneurship on CO^2 emissions in emerging nations are not sufficient.

Gini Coefficient

The Gini coefficient is a measurement of income inequality that is used on a regular basis to evaluate the distribution of wealth and income within a nation (Amorós et al., 2021). A low Gini coefficient suggests that there is a more equal distribution of wealth and income, while a high Gini coefficient shows that there is a significant degree of income inequality. Through the establishment of new firms and the accumulation of wealth, entrepreneurship has the potential to make a contribution towards the achievement of economic equality.

In the present literature review only one study incorporated the Gini coefficient in their research. Amorós and colleagues (2021), came to the conclusion that there is a negative correlation between entrepreneurship and income inequality in emerging nations. Because of this, the income in a nation is more fairly divided when there is a greater level of entrepreneurial activity. Despite this, the emphasis of the paper is on HDI rather than the Gini, and other studies in developed countries have shown contradictory conclusions (Neumann, 2021). A more in-depth investigation is required, particularly since the link between Gini and other variables is not straightforward, and the present literature review only contained one research.

Informality

The term "informality" refers to the engagement in the economy that occurs outside of the official legal and regulatory framework, and it poses a significant problem in a large number of developing countries (Adusei, 2016). The informal nature of an organization is often linked to low levels of production, deplorable working conditions, and restricted access to financing and other resources. The formation of informal enterprises in developing nations that function outside of the official legal and regulatory framework is one way entrepreneurship contributes to the prevalence of informality in these countries.

According to La Porta and Shleifer (2014), informality is more widespread in developing nations and is often connected with low levels of economic growth and poor-quality institutions. The shift to formality is driven by economic development, but it is very gradual and much more so when labour force expansion is rapid (La Porta & Shleifer, 2014). This is corroborated by other research: Adusei (2016) argue that informality is more frequent in underdeveloped nations and that data constraints restrict the possibility of doing an analysis about the full impact. However, Adusei (2016) also contends that entrepreneurship has the ability to drive economic development in Africa, and that this growth is somewhat related with informality. In other words, the author believes that informality is partially associated with economic progress. In addition, Amorós and colleagues (2021) point to the informal sector as a factor that contributes indirectly to economic development.

In conclusion, the available literature give few and rather undesirable assertions regarding the association between informal businesses, entrepreneurship, and economic development in developing countries. Nevertheless, the primary issue of informality and its impact on socio-economic development is the availability of vague data, making it nearly impossible or too costly to investigate.

Regional Differences

In many nations, it is typical to find significant cultural and resource disparities across different regions. This discrepancy might potentially lead to varied outcomes for entrepreneurial endeavours, and therefore, variations in the growth of the economy as a whole. Thereby, the influence of regional differences already starts with the area that is being examined within studies. For example, a study may investigate a whole continent, considering the many nations as regional variances, or a study may zoom in and examine a single nation's proximity to the sea, mountains, infrastructure, and urbanization. Although a number of studies

with distinct regional conceptualisations have shown variances in regional development, the determinants, that contribute to these differences have not been examined (Dvoulet et al., 2018; Meyer & Meyer; 2019). It should be emphasized once again that the number of long-term panel data that are now available to assess the impact of regional differences is very limited to nonexistent - especially when analyzing developing countries.

Other measures

Entrepreneurship may contribute to socio-economic development in a variety of ways, including by raising GDP, providing employment, and enhancing living standards. Nevertheless, the link between entrepreneurship and socio-economic progress is complicated and impacted by a number of variables, including the degree of economic development, the quality of institutions, and the regulatory environment (Neumann, 2021). Other indicators, such as ecological footprint, crime rates, health data, and education, are often neglected in the research on business and development. These factors are significant socio-economic development indicators that need additional consideration. For instance, ecological footprint assesses the environmental effect of human activities and is essential for sustainable development.

Similar to lowering CO^2 emissions, entrepreneurship has the ability to minimize the ecological footprint via the adoption of eco-friendly technologies and practices (Morris et al., 2010). This association has not been fully researched in the literature in developing countries.

Similarly, crime rates reflect the amount of social cohesiveness and trust in a community, and entrepreneurship may help reduce crime rates by creating employment opportunities and providing community-based goods and services (McDaniel et al., 2021).

The delivery of healthcare services and the use of health-promoting technologies and practices may enhance health statistics, which are an additional key indication of socio-economic development.

Education is a vital indicator of socio-economic progress since it indicates the amount of human capital and a population's adaptability to changing situations. Through the supply of educational services and the utilization of education-enhancing technologies and practices, entrepreneurship may further improve education (Catford, 1998).

In conclusion, although GDP, GDP per capita, employment, and HDI are significant measures of socio-economic growth, the literature on entrepreneurship and development should also evaluate other factors like ecological footprint, crime rates, health data, education,

and other measures. These factors are major socio-economic growth indicators that need intensive research.

CHAPTER 3: Empirical Study

As seen above, several studies investigated the correlation between entrepreneurship and socio-economic development in developing countries. The results show a positive relation between these two variables, leading many governments worldwide to invest heavily in the development of entrepreneurship and SMEs to improve their economies. However, one major criticism of recent macroeconomic research is the disconnection between the *homo economicus* model and actual human behaviour. Most theories continue to rely on the assumption of a homo economicus who maximizes a utility function using rational forecasts and all available information. These models, usually center on superior agents gifted with enormous cognitive capacities that allow them to comprehend the complexity of the environment, and eventually acting rational as predicted. The models are criticized because they are built on a variety of implausible assumptions about rational, self-interested, atomistic behaviour. These assumptions do not align with real-world behaviours and fail to account for individual intention and behaviour towards entrepreneurship. Therefore, this chapter offers a change in perspective, moving from a macroeconomic focus to a behavioural economic one. This change has resulted in a greater emphasis on understanding individual behaviour and how entrepreneurial intention is formed. To foster entrepreneurship in a country, it is crucial to have a large number of individuals with an entrepreneurial intention. Accordingly, it is important to create an entrepreneurial environment that encourages individuals to pursue business opportunities and develop innovative solutions. Countries have tried to realize this is through educational programs, aimed at fostering an entrepreneurial mindset among youth (Mukhtar et al., 2021; Li & Wu 2019).

The success of initiatives fostering entrepreneurial mindsets depends on how well the innitiatives can cultivate the right attitude towards entrepreneurship among participants (Dhliwayo & Van Vuuren 2007). This requires the creation of a learning environment that instills values like creativity and risk-taking, while also providing practical skills related to managing finances or developing marketing plans (Mansor & Othman 2011). Furthermore, these entrepreneurial educational interventions should focus not only on teaching theoretical concepts but also on helping students understand the real-world implications of their decisions, such that they can make informed choices when pursuing their own ventures (Liñán 2020). This type of education emphasizes hands-on, real-world experiences to better understand the business world and build confidence (Mansor & Othman, 2011). Correspondingly, the relationship between institutions teaching about entrepreneurship and eventual entrepreneurial

activity is crucial for understanding economic growth (Bjørnskov & Foss, 2013). Institutions that lower transaction costs positively influence the ease, speed, and flexibility of resource allocation by entrepreneurs. Effective regulations and a strong judicial system are considered the key drivers of effective institutions (Bjørnskov & Foss, 2013).

Furthermore, the environment plays a crucial role in both innovation and entrepreneurship (Dewi et al., 2019). Literature has examined the influence of clusters of enterprises, the physical proximity of other firms or universities, and the effect of knowledge spillovers that frequently accompany these clusters on innovative entrepreneurship. The innovation policy of a country can also be viewed as an environmental factor for inventive entrepreneurs. Correspondingly, inasmuch as environment plays a role for entrepreneurial activity and as also explained in chapter 1, the present chapter focuses on specifically on Kenya. Cultural, institutional, or resource variations of different countries are aimed to be ruled out by this approach.

Having clarified the general focus of the chapter at hand, the remaining chapter is organized as follows. Firstly, a review of existing literature will be outlined and hypotheses formulated accordingly. Second, the research objectives and framework of the present empirical study, aiming to answer the formulated hypotheses, are outlined. Thirdly, a description of the data, variables, and methods utilized will be provided. Fourthly, the findings of the conducted empirical study, including statistical findings and an assessment of the hypotheses will be given. Finally, the chapter will address the theoretical and practical consequences of the research findings.

Literature Review

Entrepreneurial potential and prospective entrepreneurs impact entrepreneurship of a country. Because it is difficult to measure actual behaviour of these prospective entrepreneurs, intentions have been adopted as a predictor instead (Ajzen, 1991, 1998). This emphasizes the importance of analyzing and comprehending entrepreneurial intentions, a topic that has been extensively studied for many years (e.g., Arranz, Arroyabe, & Arroyabe, 2019; Hattab, 2014). Particular emphasis has been made on the research of entrepreneurial intentions among university students (eg. Ahmed, 2020; Arranz et. al., 2019; Hattab, 2014). Hereby, research has demonstrated that entrepreneurship education and business courses increase students' entrepreneurial intention (eg. Hattab, 2014). Entrepreneurship education provides students with options for growth and innovation, as well as employment prospects as small business owners

or with existing firms. Entrepreneurial education also offers students with skills and management training that develop their entrepreneurial knowledge, foster entrepreneurial thinking, deepen their comprehension of management, and strengthen their entrepreneurial intention (Hattab, 2014). In addition, Arranz and colleagues (2019) highlighted the importance of culture in entrepreneurship. Cultural variables can influence human behaviour, such as decision-making and entrepreneurial job choices. Therefore, it is essential to foster an entrepreneurial culture among the youth. Moreover, as observed by Bruyat and Julien (2001) the intention to start a business is related to one's way of thinking. Having an entrepreneurial mindset can create cognitive dissonance and reinforce the link between entrepreneurial intention and actions. Furthermore, students must have an entrepreneurial mindset in order to be capable of adapting and developing creative thinking in response to new economic circumstances (Pirhadi and Feyzbakhsh, 2021).

Considering the importance of culture, education, and suitable mindsets for entrepreneurial intention, the purpose of this dissertation's chapter is to assess the effect of *Entrepreneurial Culture* (EC) and *Entrepreneurial Education* (EE) on *Entrepreneurial Intention* (EI). Thereby, *Entrepreneurial Mindset* (EM) is taken into account as a mediator for the relationship between EC respectively EE and EI. Previous research on this subject has predominantly focused on an evaluation of entrepreneurship education and intention leaving out a mediator variable. The examination of this topic in context of Kenya offers a distinctive viewpoint, given the recent political advancements supposed to foster entrepreneurial activities.

Entrepreneurial Intention

In order to elaborate the key concepts of the present research, *Intention* means a thought, idea, or strategy to accomplish a certain goal. It includes different elements, including ethics, needs, desires, and beliefs. (Lee & Wong, 2004). The first investigation on intention as a predictor for behaviour has been done by Ajzen (1991, 1998). Since then, intention is recognized as an immediate predictor of behaviour and has been adapted by multiple studies (Mukhtar, Wardana, Wibowo & Narmaditya, 2021; Ahmed, 2020; Hattab, 2014). Consequently, the current research employs intention rather than actual behaviour as a variable. EI may be described as a state of mind that directs and guides an individual's activities towards the creation and execution of a predetermined objective, especially the establishment of a new firm (Hattab, 2014). It is considered a crucial predictor of entrepreneurial activity. EI may be

a formal or informal plan or decision and may or may not be implemented in the future (Arranz, Arroyabe, & Arroyabe, 2019). In general, it can be said that individuals with EI are delighted and engaged in entrepreneurial endeavours. Recent empirical research revealed that the relationship of cultural and institutional views impact entrepreneurial behaviour and EI (Bae, Qian, Miao & Fiet, 2014). Therefore, a greater comprehension of cultural and educational variables is required.

Entrepreneurial Culture

The term *Culture* represents a shared set of values and beliefs that determines what a group of people considers to be socially acceptable behaviour (Hofstede, 1980). Thus, EC is described as the values, abilities, and capacity of individuals or groups who engage in creative and innovative activities. (Kang et al., 2016; Danish et al. & Ali, 2019). Referring to the stages of development of emerging economies and the impact of entrepreneurs, EC in Kenya can play a vital role in youth development by promoting self-employment over employment (Arranz et al., 2019). Hence, existing literature illustrates the favorable relationship between EC and EI. However most previous studies have concentrated on the American, European or Asian environment. Therefore, research on the topic is particularly required in the context of entrepreneurship in Africa (Danish et al., 2019; Arranz et al., 2019).

Apart from EI, EC in communities or organizations also fosters EE. After the 2008 financial crisis, Blenker and colleagues (2012) identified a substantial increase in the number of entrepreneurial courses at universities. In addition, the authors characterize the educational system as the method through which EE is integrated into the curriculum at all levels of education. Recent strategies in academic institutions to enhance cultural engagement in EE further emphasize this compelled shift in cultural development. Thus, the amount of offered entrepreneurial courses is a significant part of a community's cultural impact.

Recent research additionally emphasizes the relevance of an EM in ECs, alongside EI and EE (Dewi, Nurfajar, & Dardiri, 2019; Yusof, Jabar, Murad & Ortega, 2017). Prior research on the link between EC, EE, and EM revealed that EM is impacted and learnt via interaction with the student's surroundings and current knowledge. In addition, it has been shown that friends, family members, and institutions actively promote entrepreneurial thinking by modeling or encouraging entrepreneurial conduct (Danish et al. 2019). Because of the interrelation between EC, EE, EM and EI, the present study offers the following hypotheses:

H1*: Entrepreneurial culture predicts entrepreneurial intention*

H2*: Entrepreneurial culture predicts entrepreneurial education*

H3*: Entrepreneurial culture predicts entrepreneurial mindset*

Entrepreneurial Education

Several studies from the twentieth and twenty first century demonstrate the role of entrepreneurship in economic progress (Gürol & Atsan, 2006; Wu, 2009; Israel & Johnmark, 2014). Prior to the current period of research, however, it was commonly considered that entrepreneurs possessed distinct characteristics such as inventiveness, creativity, high intellect, positivism, risk-taking, and a high-risk perception (Kuratko, 2005). Later, researchers started to focus more on demographic variables including gender, age, personal background or race. For long decades, the importance of education has been largely disregarded (Barnir, Watson & Hutchins, 2011; Martin, McNally & Kay, 2013). Only a few decades ago, educational institutions incorporated entrepreneurship initiatives within their curricula to help students develop with regard. (Audia, Locke & Smith, 2000; Hindle & Rushworth, 2002; Sidhu, Johnsson, Singer & Suoranta, 2015; Nyadu-Addo, & Mensah, 2017). Liñán (2004) defines EE as any form of education or training, that aim to enhance the entrepreneurial intention of individuals. This includes but is not limited to factors that influence that intention such as knowledge, desire, and feasibility of carrying out entrepreneurial endeavors. Correspondingly, EE has also become more relevant to a broader spectrum of students in higher education, not only to those with entrepreneurial ideas. It has been recognized as a useful instrument for promoting entrepreneurial activity in general. (O'Brien, Cooney & Blenker, 2019; Li & Wu, 2019).

Contrastingly to the perspective of EE to enhance entrepreneurial activity, Chou and colleagues (2010) demonstrated that EE at colleges and universities did not enhance entrepreneurial endeavors significantly. To put it differently, an increase in entrepreneurial courses does not result in an increase in entrepreneurial rates right away. That is because there appears to be a time lag of up to ten years between the period of entrepreneurial schooling and the actual firm start (Chou et. al, 2010). As a result and as already mentioned, the majority of recent research has focused on studying EI rather than analyzing entrepreneurial activities as the primary emphasis. Intentions have been demonstrated to be a good predictor of long-term behaviour and are thus regarded as a well-fitting variable for the research at hand (Li & Wu,

2019; Morwitz & Munz, 2021). Hence, even though EE might only unfold its visible effect in form of entrepreneurial activity after some years, it seems to impact EI more directly.

The underlying reasons for EE to affect the realization of entrepreneurial goals presumably trace back to EE impinging on people's attitudes, talents, and mindsets (Hattab, 2014; Bae et al., 2014). According to cognitive research on entrepreneurship, desired entrepreneurial outcomes may arise from an EM. Such a mindset in turn may be enhanced through educational learnings (Krauss, Frese, Friedrich & Unger, 2005; Haynie, Shepherd, Mosakowski & Earley, 2010). Further research has been carried out to look at the potential of habit formation within cognitive processes that may be learned and shaped. (Yan, Thai, & Bjork, 2014). Thus, in light of impact of EE on both EM as well as EI the study at hand proposes the following hypotheses:

H4: *Entrepreneurial education predicts entrepreneurial mindset*

H5: *Entrepreneurial education predicts entrepreneurial intention*

Entrepreneurial Mindset

Turning to the concept of EM now, it is actually difficult to define what it exactly entails. That is due to the interdisciplinary nature and multiple definitions associated with EM. Bruyat and Julien (2001), who are considered as the pioneers of EM research, define it as a certain state of mind which drives individuals towards creating value or output. The authors proposed that entrepreneurs have three key characteristics: they possess an open-minded approach, they embrace risk-taking behaviour, and they display creative problem-solving abilities when faced with challenging situations or tasks. These attributes are essential for successful entrepreneurship, warranting them with the right mindset for innovation or progress to blossom within any given venture. In addition, Lackéus (2016) defines EM as the capacity to think unconventionally. Withal, EM appears to serve as a mediator between EE, EC and EI. That is, considering the Social Cognitive Theory (SCT) by Albert Bandura (2001), SCT asserts that observing others' behaviours and their actions' results can have direct correlations with individual knowledge acquisition processes. The theory posits when humans observe someone else engaging in an action and then witnessing the outcome of this actions, they remember it in order to apply it towards their own future conduct if necessary. Hence, SCT suggest essentially learning through observation rather than experience itself. Therfore, it can be applied to the current research as a culture and education with focus on entrepreneurship can already create

an EM by the obervations in the community or educational institution. For instance, Cui and colleagues (2021) identified an individual's educational experience (e.g., observational learning), as a component that impacts an individual's EM. In addition, the authors demonstrated a favourable correlation between EE, EM, and entrepreneurial inspirations, with entrepreneurial inspiration being comparable to EI.

These findings are enhanced by the findings of Pirhadi and Feyzbakhsh (2021), who state that fostering EM and entrepreneurial abilities can effectively build the capacity to judge the attractiveness and viability of business opportunities, thereby increasing individuals' EI. Moreover, Winkler and Case (2014) investigated cultural, non-academic elements that positively influence self-efficacy, motivation, and cognitive thinking, resembling an EM. Hence, it can be argued that both EC and EE have a favourable influence on EM, which in turn has a positive influence on EM. EM appears to function as a mediator between EE and EI. In fact, utilizing EM as a mediator between these interrelations adds value to the current level of research by trying to further explain the relation between EC, EE and EI. Consequently, the following hypotheses are proposed:

H6: *Entrepreneurial mindset predicts entrepreneurial intention*

H7a: *Entrepreneurial mindset mediates the association between entrepreneurial culture and entrepreneurial intention*

H7b: *Entrepreneurial mindset mediates the association between entrepreneurial education and entrepreneurial intention*

Research Objections & Framework

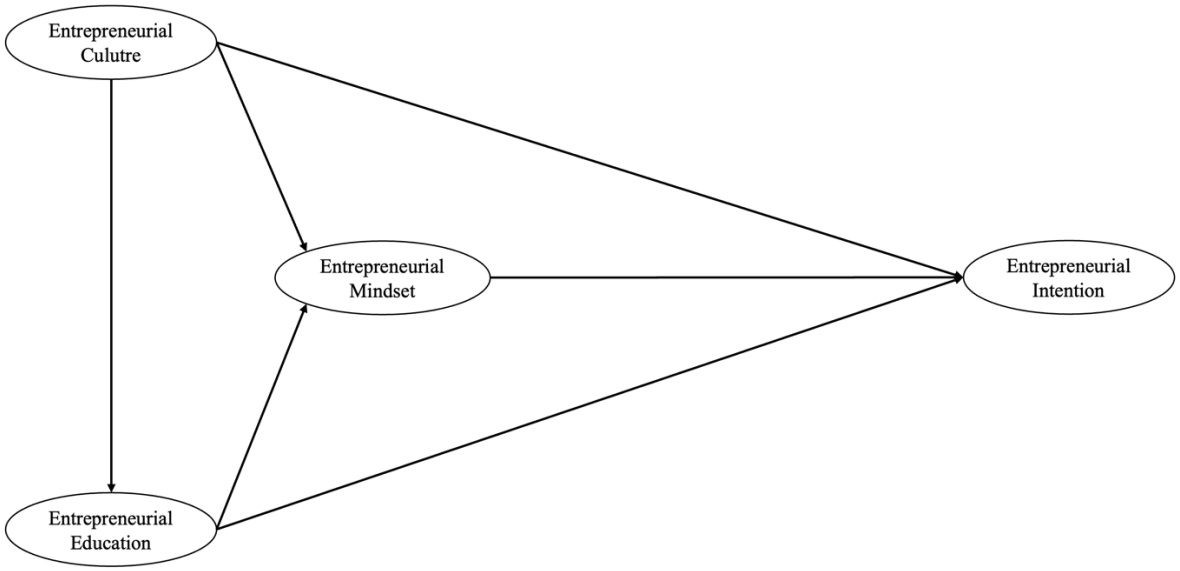
In light of the aforementioned research gap and resulting hypotheses, the primary objective of this work is to give a better understanding of how EI might be fostered. The generated hypotheses suggest that EC and EE are positively correlated.

Integrating the SCT, the current study proposes that EM further mediates relation between EC respectively EE and EI. Consequently, the second objective of this article is to examine the function of EM as a mediator between the three variables. It is anticipated that a strong EC and EE would boost EI, which can be explained through an EM.

The third objective of the present study is to elevate the significance of EC and EE research in emerging economies. Despite the increase in EE in recent years and the consensus on the relevance of entrepreneurship in developing countries, there is still a dearth of relevant

research in this area. (Cui et al., 2021). Based on the literature review and the developed hypothesis, figure C.1 presents the conceptual model of the research.

Figure C.1 Conceptual Framework



Method

The section at hand reports the participants, procedure, and measures of the present study.

Participants

The present study collected data from students who had completed at least one entrepreneurial course at the Technical University of Kenya (TUK) in Nairobi. The demographic characteristics of the study participants revealed that out of the 235 participants in the final sample, 56.6% of the respondents were male, and 43.4% were female. Detailed information about the sample demographics is presented in Table C.1.

Procedure

A questionnaire on qualtrics.com served as the data gathering tool. The dean and a professor of entrepreneurship facilitated the distribution of the survey to the students. 283 students enganged in the questionnaire. Prior to beginning the survey, participants were informed of the study's procedures and provided guarantees that their personal replies would not be individually evaluated or made public. Participants confirmed to take part in the study

after being informed that their identities would be protected and that their participation was voluntary. Out of the 283 questionnaires received, 254 were fully completed. Any questionnaire completed in less than five minutes was eliminated to ensure reliability of the data. Additionally, control questions were scrutinized for falsified responses, leaving 235 responses suitable for use in the present research. The study relied on SPSS software version 26 and Smart PLS version 4 to conduct structural equation modeling, testing the proposed hypotheses.

Survey

The survey adopted a quantitative approach to explore the correlations between EE and EC with EI, respectively mediated by EM.

For each latent variable, a corresponding construct has been established through observed variables. As verifying construct measures is vital for knowledge accumulation in research, the observed variables at hand are based on well-established items from earlier research (MacKenzie et al., 2011). This approach ensures that the psychometric qualities of the instruments have been tested and proven to work. Unless otherwise noted, respondents answered all questions using 5-point Likert scales ranging from 1 *strongly disagree* to 5 *strongly agree*.

The questionnaire itself was split into five segments. Section one requested demographic information from respondents. The second section aimed to gather information on students' attitudes towards EI. Hereby, the present study employed six items developed by Robledo and colleagues (2015) and Handayati and colleagues (2020), quantifing participants responses towards EI. In line with the original questionnaire, ensuring the psychometric quality present study's survey, question 3 has been formulated as a reversed question. It reads *I have serious doubts about ever starting my own business.* All other questions were positively framed. In sections three and four, the variables EC and EE were measured. Questions of this section relied on prior studies on EE (Denanyoh et al. 2015; Handayati et al.,2020) and EC (Ahmen, 2021; Mukhtat et al., 2021). Both sections consisted of six individual questions. Section five utilized six questions from Handayati and colleagues (2020) and Cui and colleagues (2021) to assess the latent variable EM. As all questionnaire templates were formulated and conducted in English, no further adjustments were made.

Finally, since an agree-disagree matrix question type squeezes a lot of information into a compact space respondents may not be cautious with their responses. This behaviour is known

as straight-lining. Essentially, straight-lining occurs when a responder advances too rapidly through a sequence of assertions and selects the same response for each. In order to guarantee authentic data collection, an attention question was incorporated in every block. This question prompted the respondents to confirm they were reading each question attentively by compelling them to choose a response option mentioned in the question. For example questions with variable code EC4: *Please select "Strongly Disagree" to demonstrate that you are carefully reading this item.* Appendix C.1 offers a detailed overview of the survey provided to the participants.

Results

In order to analyse the gathered data a predictive model evaluation was implemented first as prescribed by Hair and colleagues (2013). Hence, the present research model was tested on construct validity as well as convergent and discriminant validity. For an approximation of the construct validity, preliminary testing was conducted on the administered scales to confirm their validity even in the Kenyan context. A confirmatory factor analysis was performed, allowing to examine whether the individual items supposed to measure the same construct are indeed related to each other and load on the same factor. Correspondingly, evidence of internal consistency among items measuring similar concepts or ideas was aimed for. In accordance with literature suggestions two items (EM7 & EI3) that only had a factor loading below 0.4 were removed. This way a clean factor structure could be achieved based on appropriate criteria set out by Hair and colleagues (2013). The remaining items were used in the further analysis. Table C.2 summarizes all variables and their factor loadings.

Subsequent to the factor analysis convergent validity was determined by examining the correlation between responses to the various items that were supposed to assess the respective same construct. This ensured that measurements were indeed associated with the latent variables EC, EE, EM, and EI. Strong correlations implied convergent validity. More specifically, the present study used the average variance extracted (AVE) value to establish convergent validity. AVE explains the degree to which items are shared between constructs. Thereby, as an indicator of convergent validity the AVE value had to be greater than or equal to 0.5 (Sanchez et al., 2020; Kock, 2015). Table C.3 presents the final results of the AVE scores.

To ensure discriminant validity, the distinction of one construct from another needed to be established. One way to show discriminant validity is by correlating one construct to

another, with the constructs being represented through the respective items (Sanchez et al., 2020). Discriminant validity thereby helps researchers by looking at how related the two variables are (Kock, 2015). In order to establish discriminant validity, it is necessary for the correlation between two constructs to be lower than the square root of the AVE value from each variable. The results presented in Table C.4 show that this criterion was met. The AVE square root for each variable was higher than its corresponding correlation coefficient with other variables (Kock, 2015). This provides acceptable evidence that divergent validity has been established and suggests there is indeed a difference between the respective sets of data points.

Apart from the validity checks the reliability of the administered instruments was assessed also. Composite Reliability and Cronbach's alpha tests were used for this purpose. The questionnaires administered to measure EC, EE, EM and EI yielded valid results with a Composite Reliability score ranging from .893 to .971. These Composite Reliability scores demonstrate that the measures are reliable and provide robust evidence for internal consistency. In addition, the Cronbach alpha scores for each variable were above 0.7, being an acceptable level of reliability for research instruments (Kock, 2015). These results provide evidence that the instruments utilized in measuring EC, EE EM and EI are accurate and reliable. The results of the reliability and validity tests are presented in Table C.5, while Table C.6 gives an overall overview of the tested measures.

Structural Equation Modeling

Turning to the hypotheses testing now, structural equation modeling (SEM) was used. SEM is a powerful multivariate statistical technique that is widely used in social sciences to examine the relationships among multiple observed and unobserved variables. It combines the principles of factor analysis and regression analysis to evaluate the structural relationship between observed variables and their latent counterparts. The technique has become increasingly popular due to its ability to test multiple and interrelated dependencies within a single analysis (Kock, 2015).

Prior to proceeding with the hypothesis testing, a Kolmogorov-Smirnov test was employed on each measured variable to evaluate the normality of the data distribution. Table C.7 outline the findings of this analysis. The outcomes indicated that the assumption of normality of data distribution cannot be established as the significance level for each variable was less than 0.05. Consequently, SEM was conducted utilizing PLS software instead of

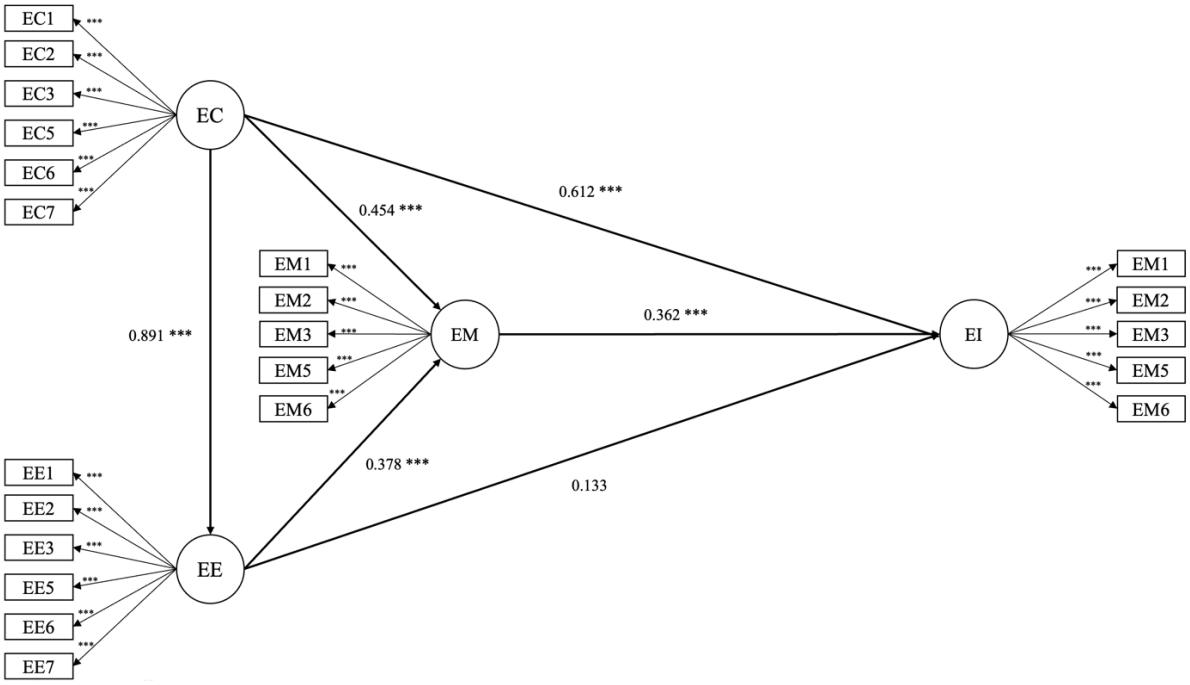
maximization with SPSS Amos to test the research hypotheses. PLS-SEM is an exploratory technique that emphasizes exploring relationships. It does not require a large sample size or specific assumptions on the distribution of the data, accounting for the non-normal distribution of the present data (Kock, 2015; Hair et al., 2013).

The primary parameter utilized in evaluating the adequacy of a structural model is the R^2 statistic. The R^2 parameter measures how much variation in an endogenous variable can be explained by its associated exogenous variables. In this study, the R^2 test adhered to the guidelines set forth by Hair and colleagues (2013). These guidelines classify an R^2 value of 0.75 as substantial, 0.5 as moderate, and 0.25 as weak, implying a model to be substantial, moderate or weak respectively. As seen in table C.8, the R^2 parameter is within the substantial range for EE and the moderately one for EM as well as EI. In addition to determining the individual parameters' fit within a given model, it is also important that the overall fit of the model is tested. Therefore, the goodness of fit (GoF) was used. The GoF quantifies average latent values across studies relative to their respective models. Within the present study the GoF equaled 0.65 indicating robustness and suitability of the overall model tested. Table C.8 provides a summary of the conceptual model fit.

For the assessment of the specific hypothesized interrelation between the variables of the study at hand a path analysis was applied, still relying on the SEM-PLS approach.

Path analysis is a statistical technique used in the evaluation and interpretation of data. It helps researchers understand how multiple variables interact with each other to affect an outcome. The present research employed multiple criteria for evaluating the constructed model thereby, with t-values being foremost and fundamental. These coefficients are essential in determining whether a given path has any significant effect on an outcome variable. To assess the t-statistic and t-values with a path analysis SEM-PLS approach, bootstrapping stages have been initiated. The outcome is presented in Figure C.2 as structural equations, while Table C.9 provide the results of the hypothesis testing in more detail. Out of eight hypotheses tested, seven were supported while H5 was rejected with a t-statistic of 1.548 and a p-value of 0.124. Thus, the outcome suggest that there is no significant direct relation between EE and EI. Moreover, apart from the direct relationships, the results indicate that EM adopts a crucial and significant mediating function in the association between EC and EI (H7a), as well as EE and EI (H7b). Accordingly, it can be inferred that the relationship between EC and EI is partly mediated through EM. In contrast, the association between EE and EI appears to be fully mediated via EM as there seems to be no direct relation between EE and EI.

Figure C.2 Structural Equation Modeling: Path Coefficients and p-values



*** p<0.001

Discussion

The aim of the present study was to investigate the impact of EC and EE on EI, with EM mediating these relations. Each developed hypothesis will be discussed individually in the section at hand.

H1 aimed to determine the relationship between EC and students' EI. The present results confirmed the hypothesis that EC can significantly influence students' EI to become entrepreneurs. This impact of EC on EI presumably comes about because an EC encourages students to learn and improve their confidence levels with regards to entrepreneurship. This in turn leads to an open-mindedness to new information and knowledge required for entrepreneurial activities. The established relation between EC and EI further emphasizes the significant role of EC in supporting EI, as highlighted in previous studies by Sesen and Pruett (2014), and Adekiya and Ibrahim (2016).

H2 of this study focused on the positive correlation between EC and EE. The findings indeed suggest that EC can foster social legitimation, creating an environment that is supportive of teaching and learning entrepreneurship. Moreover, the values associated with EC may influence psychological attitudes relevant for EE. A favorable EC within the academic setting may encourage students to have an open mindset, making them more receptive to new

information and knowledge. These results align with the findings of earlier studies, including Sesen and Pruett (2014), and Adekiya and Ibrahim (2016), who also identified a positive correlation between EC and EE.

H3 of the study at hand predicted a positive relationship between EC and EM, being supported by the collected data. This finding is consistent with the SCT (Bandura, 2001) which emphasizes the interrelation between of cognitive variables, environmental factors, culture and individual behaviour. Considering this theory it can be said that exposure to EE or EC shapes an individuals EM. Further research conducted by Cui and colleagues (2019) supports these findings as well since they suggest that an EM can be developed through exposure to current cultural and situational factors.

H4 considered the effect of EE on EM. Indeed, a positive and significant impact of EE on EM was found. The results are consistent with the findings of Cui and colleagues (2021), who also reported a positive influence of EE on EM. Hence, EE appears to have a particular impact on students' cognitive ability to engage in class activities related to entrepreneurship. EE also seem to create an environment conducive for active entrepreneurial learning experiences. Such environments provide students with opportunities to develop their creative thinking skills and knowledge base related to starting up businesses or managing existing ones more effectively. Bandura's SCT (2001) further supports this finding by highlighting the role of education in shaping an individual's mindset.

H5 of the current study aimed to investigate the relationship between EE and the EI of Kenyan students. Surprisingly, the findings of the present research indicate that EE failed to explain the intention of Kenyan students to become entrepreneurs. This result contradicts majority of previous studies like the one of Li and Wu (2019) or Hattab (2014), which suggest that EE can enhance EI. However, it aligns with the study by Mukhtar and colleagues (2021). One possible explanation might be the level and quality of EE, which has not been specified for the study at hand. Considering this interpretation, the failure to find evidence for the relation between EE and EI is groundbreaking insofar as it suggest Kenyan government and colleges to design more effective and practical entrepreneurship education programs. To enhance the positive consequences of EE, it would be essential that, in addition to the traditional aspects of knowledge transmission of educational courses (i.e., cognitive component), the emotional and behavioural aspects should also be focused, since only acting at a cognitive, affective and behavioural level can promote attitude change.

H6 is centered on investigating the impact of EM on EI. Confirming the hypothesis, the findings revealed a substantial and favorable impact of an EM on EI. This outcome supports

the argument presented by Pirhadi and colleagues (2021) that behavioural intentions are first formed through an eligible cognitive mindset. Likewise, Cui and colleagues (2019) have stressed that one of the determinants of EI is an EM, with EM including factors such as risk-taking tendencies or awareness of opportunities. Furthermore, the current study robustly supports the previous investigations conducted by Adekiya and Ibrahim (2016) that highlight the interdependence between EM and EI.

H7a and **H7b** suggested that the relationship between both EC as well as EE and EI is partially mediated by EM. Withal it is to note that the present study's results revealed the link between EC and EI to come about directly as well as indirectly via EM. The connection between EE and EI, however, became only significant through the the mediator EM, disclosing a full mediation. Previous studies have primarily considered EM as a dependent variable (Daspit et al., 2021), but this research sheds light on its mediating role in promoting the development of EI. Hence, the consideration of EM as a mediator highlights the value and importance of EM in the research field of entrepreneurship. The cultivation of EM through EE is a vital step towards the understanding of EI. In summary, both EC and EE contribute to a shift in EM, ultimately influencing EI.

Conclusively, this study provides a comprehensive understanding of the process through which EI is formed in Kenya. The study has significant implications for the promotion of EC and EE in the Kenyan context. Specifically, the investigation of the influence of EM on EI confirms its crucial role in shaping EI. Thus, the study suggests that educators should prioritize the cultivation of students' EM through appropriate EC and EE in order to eventually enhance the students' EI.

Implications

The present study, which measures both the direct and indirect impact via EM of EC and EE on EI, carries substantial theoretical and practical implications. These implications are expounded upon in section at hand. Specifically, the theoretical implications pertain to the understanding of the relationship between EC, EE and EM, and their effect on EI. The practical implications, on the other hand, relate to the development of effective policies and interventions that can encourage entrepreneurial activity. Thus, the present section will begin by discussing the theoretical implications of the study, followed by an exploration of its practical implications.

Theoretical Implications. The present study holds significant theoretical implications. On one hand, it validates prior research on the crucial role of EC in promoting EI (e.g., Sesen & Pruett, 2014; Adekiya & Ibrahim, 2016). Furthermore, the investigation uncovers a positive correlation between EC and EE, drawing attention to the characteristics of a conducive environment for teaching and learning entrepreneurship.

Additionally, this study contributes to the existing literature on the relationship between EE and EM. It supports the notion that EE has a favorable impact on EM (Cui et al., 2021), underscoring the importance of structured and directed learning in creating a favorable learning environment and, thus, EM. Contrary to previous research, the results of this study suggest the need for further research on the relationship between EE and EI, particularly in the context of Kenya. That is because this direct relationship was not found within the present study, contradicting previous studies (e.g., Li & Wu (2019; Hattab, 2014).

Finally, the current research sheds light on the mediating role of EM in the association between EC respectively EE and EI. EM plays a crucial role in shaping EI, and further research is warranted to deepen the understanding of eventual intention formation. Therefore, these established interrealtions between culture, education, mindsets and intention might also be transferable to other research fields beyond the entrepreneurship industry.

Practical Implications. Yet, the study at hand not only bears theoretical implications. There are also practical implications particularly essential for educational institutions and the government. The findings provide valuable guidance for educational institutions in the Kenyan context to design more effective and practical entrepreneurship education programs. That is, considering the absent direct association between EE and EI, the present study suggests that the entrepreneurship curriculum needs to be updated in order to be more effective in shaping students' EI. Previous research has proposed that experiential approaches to EE are an effective way of developing students' EI and EM, allowing them to identify areas where they can add value through their own experiences within their environment. Correspondingly, the current study suggests to provide scaffolded experiences as part of the entrepreneurial focused curriculum. This practical experience allows students a greater understanding of what it means to be an entrepreneur while still being able to learn from structured classroom sessions about business concepts. Additionally, hands-on activities will help foster critical thinking skills by giving participants meaningful tasks such as designing prototypes or engaging in customer interviews. These practical tasks could lead them closer towards achieving success in their ventures later on down the line if they choose so pursue one after graduating from school. Thus,

with high quality EE the positive association between EE, EM and EI found within present study can unfold.

Turning to the practical implication for the government, policymakers in Kenya should recognize the significance of EC and EE in shaping students' EI. Policies should be designed that encourage the development of a favorable EC and provide structured and directed EE. Adequate facilities and trained teachers regarding entrepreneurship should also be prioritized and supported. Furthermore, the research at hand highlights the importance of governmental support for young entrepreneurs by making it easier for various business establishment permits that promote their success. For example, through the implementation of reduced bureaucratic hurdles associated with starting up businesses or the provision of tax incentives. Hereby, tax incentives would allow entrepreneurs to better use the capital during initial stages of development. Both are key components in helping budding startups succeed on a larger scale than they might otherwise be able to achieve without governmental assistance.

While considering the practical implications, it also needs to be mentioned that this study was conducted in Kenya. Kenya exhibits a relatively unique context for entrepreneurs in emerging countries, due to its recent presidential election and development ministry dedicated towards MSMEs. The presented results may also hold relevance for culturally similar countries like Tanzania or Uganda. However, these countries may face more significant challenges in identifying and taking advantage of entrepreneurial opportunities due to limited resources and technology.

CHAPTER 4: General Discussion

The present thesis commenced with a clarification of its focus and discussed the pertinent meta scientific context with regard, eventually outlining the goals and objectives to be accomplished within the thesis at hand. In this concluding chapter, the interconnection between Chapter 2 and Chapter 3 will be expounded. A framework ranging from EC and EE to socio-economic development is presented therefore. Furthermore, Chapter 4 provides a list of recommendations for forthcoming research. Within a conclusion section the preceding chapters are scrutinized in context of the objectives stipulated in the introduction.

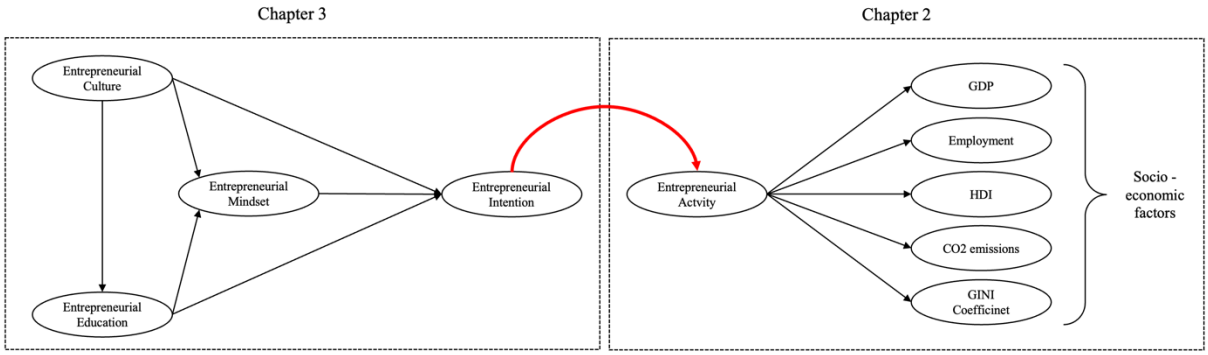
To start with the EC repectively EE to socio-economic development framework, some background information merits revision. In the realm of traditional macroeconomic research, rational behaviour and rational expectations set the foundation for any analysis. These assumptions usually result in simple models, in which the outcome is often predetermined, ignoring the influencing potential of external factors. However, research conducted by cognitive psychologists and behavioural economists provides robust evidence of significant deviations from the economic man assumption. People apparently do not always act rationally as assumed in traditional macroeconomic approaches (Thaler, 1980). Furthermore, it has been observed that the restrictive outcomes of traditional macroeconomic models are frequently the result of oversimplified modeling assumptions. Despite this, merging the research fields of macro- and behavioural economy pose a considerable challenge, given the inherent intricacy of economic behaviour and outcomes. In most cases, it is only possible to account for a few behaviours and mechanisms satisfactorily, apart from the existence of numerous factors that influence economic behaviour. In addition, in complex situations, which are typical in macroeconomics, agents may not be able to anticipate the equilibrium outcome. Therefore, a rational expectations outcome, where humans act like predicted, is very unlikely when analyzing behaviour.

The present research contributes to two different fields of research by focusing on both macroeconomic and behavioural economic perspectives. Chapter 2 explored the macroeconomic perspective, while Chapter 3 provided valuable information on the behavioural economic perspective. Withal, the dependent variable in Chapter 3 was represented through EI, which is known to be a reliable predictor of actual behaviour and entrepreneurial activity according to previous literature (Ajzen, 1991, 1998; Hattab, 2014; Arranz et al., 2019). In Chapter 2, entrepreneurial activity was used as the independent variable, and the systematic literature review shows that it is a significant indicator for socio-economic development in

emerging countries. Figure D.1 presents a framework that combines the findings of both chapters to provide a comprehensive view of the relationship between EI, entrepreneurial activity, and socio-economic development.

Within the developed framework combining intention, activity and socio-economic development it is important to note that it is based on the assumption that EI leads to entrepreneurial activity. Regrettably, time and resource constraints implied that neither chapter presented in this dissertation attempted to prove this relationship. Future research is recommended to explore this association further.

Figure D.1 Combining Behavioural Economics and Macroeconomics



By evaluating the proposed framework and validating the association between EI and entrepreneurial activity, the suggested application of behavioural economic principles can potentially advance the comprehension of macroeconomic phenomena. This approach can potentially provide a more comprehensive explanation of actual behaviour compared to the conventional theoretical frameworks adopted by most economists previously. Therefore, integrating a behavioural economics viewpoint in macroeconomic research could enhance the explanatory capability of economic models.

Regardless of the outlined benefits of merging macroeconomics with behavioural economic, this combination is not exempt from challenges. While there is substantial evidence for specific behavioural characteristics, the integration of both subjects may result in increased complexity and difficulties in synthesis. Subsequently, the following section will expound on these limitations and provide suggestions for future research.

Limitations and Further Research

To enhance clarity, the limitations and recommendations are categorized into three distinct domains according to the chapters presented in this dissertation: (1) systematic

literature review (i.e, Chapter 2); (2) empirical study (i.e., Chapter3); and (3) general recommendations for future research combining both perspectives (i.e., Chapter 4).

Systematic Literature Review

For the literature review in Chapter 2 various decisions framed the selection process of articles, aiming to manage the vast number of articles and display them in a logical sequence. However, some of these selection technique criteria might be questioned. For example, the selection of databases was dependent on university access. Other limitations include an initial emphasis on studies with long-term panel data. Even qualitative or cross-sectional research were omitted. Yet, this constraint of omitted qualitative or cross-sectional research may also be interpreted as a quality requirement. On the other hand, it is plausible that it has led to the omission of significant contributions that emerged through other methodologies. A further limitation regards the fact that the author scanned the papers on his own during the original search. As the literature evaluation was a component of a master thesis, there was no research team present. However, a tight working relationship with the supervisor and a comprehensive first review of all articles should have mitigated the risk. Furthermore, it must be reiterated that the focus of the literature review is confined to entrepreneurship in developing countries. Studies that examined entrepreneurship in both developed and developing countries were disregarded. Since these publications often present an overview and do not vary their conclusions based on the country's development status, the author chose this approach to ensure the focus on developing countries. Excluding any study with developed countries is a valid procedure. However, it is somewhat weakened by the frequent assumption that entrepreneurship is the same everywhere around the globe (Lingelbach et al. 2005).

Apart from the limitatins concerning the selction process of articles, the quality and comparability of data is another obstacle to be aware of. In developing nations, few firms maintain accurate records, and informal businesses continue to dominate. Consequently, it is difficult to get cohesive data since information is often obscured. Improving the quality and comparability of micro- and small-business data necessitates to systematically address these concerns to the fullest degree feasible.

Finally, even though it is not explicitly highlighted in the review, identifying, and verifying causality is a significant obstacle. This problem is somewhat theoretical and partly empirical. Entrepreneurship, for instance, may be both a cause and a result of economic growth and socio-economic development. Indeed, as demonstrated by the literature review, current

empirical research indicates that entrepreneurial activity promotes economic growth and development. Several research, on the other hand, indicate that entrepreneurship responds favorably to economic development, because a growing economy provides more opportunities – the reverse causal association (cf. Gindling, & Newhouse, 2014; Caceres & Caceres, 2017; Mahadea & Kaseeram, 2018). There are also causality difficulties in the relationship between institutions and entrepreneurship. Entrepreneurship may be endogenous to institutions, or the other way around (Pacheco et al., 2010). Hence, further research on the topic is suggested.

Empirical Study

As with any empirical study, the research presented in Chapter 3 is not exempt from certain limitations. Firstly, the sample used in this study was limited to students exclusively from the Technical University of Kenya. Those students constitute a homogeneous group. Consequently, the generalizability of the study's findings to the wider population of Kenya is uncertain, let alone to other East African nations. To address this generalizability issue, the author recommends future scholars in the field to focus on larger and more diverse populations, involving multiple universities and acquiring more heterogeneous subjects.

Secondly, the research did not take into account the quality of education. The efficacy of education may be influenced by the disparities between different types of education like non-academic entrepreneurship training or university courses. To advance our understanding, future researchers could investigate the differences in quality between academic and non-academic courses. Additionally, they could explore which specific elements of EC and EE are responsible for the development of an EM and EI, respectively.

Thirdly, the research exclusively focused on EI as a dependent variable. As such, the study's variables could be examined alongside other critical factors such as entrepreneurial alertness, entrepreneurial adaptability, entrepreneurial self-efficacy, or entrepreneurial attitude rathter than EI as the depedent variable.

Lastly, it is unclear whether the results may be affected by students having prior work experience as it is assumed that their point of view regarding employement or entrepreneurship might be affected. To address this issue, future researchers should select participants, both with and without work experience.

General Recommendations

The general recommendations based on the outcomes of the present thesis trace back to the framework at the outset of Chapter 4 (Figure D.1). As this basis of this framework also include some flaws worth noting, they are delinated first. Firstly, there is a divergence in scope and research focus between Chapters 2 and 3. While Chapter 2 provides an in-depth examination of multiple developing countries, Chapter 3 narrows its scope to solely Kenya. This decision was made to account for cultural and geographic differences among developing countries. Additionally, data limitations for macro-level analysis of individual countries further highlighted the challenges. Future research could address these limitations by adopting longitudinal research designs focusing on a specific country or group of countries. Focuisnf on specific countries on a specific countriy would enable a more comprehensive understanding of the relationship between entrepreneurial intention and entrepreneurial activity, as well as a measurement of their impact.

In light of the outlined flaws of the framework basis, the integration of behavioural economics and macroeconomics, while promising, requires caution. There is a risk that behavioural features included in simple macroeconomic models lead to wrong conclusion as results may be driven by other mechanisms. Unfortunately, there is a lack of knowledge on the appropriate approaches and assumptions to combine both research fields. Hence, more research is needed to guide the selection of specification in this regard. One of the key challenges is the complexity of synthesizing findings from cognitive psychology with macroeconomic models. While certain behavioural characteristics, such as anchoring, framing, will-power problems, and status quo, have been established in behavioural research, their integration into macroeconomic models could result in increased complexity and difficulties in synthesis. Therefore, there is a need for more in-depth research to better understand these behavioural characteristics and how they can be incorporated into macroeconomic models in a meaningful way. Such research can contribute to enhancing the explanatory power of the models and provide new insights into the behaviour of individuals and economy related institutions. To overcome these limitations and further advance the understanding of the interplay between behavioural economics and macroeconomics, several alternative approaches could be pursued. One such approach is to develop fundamentally different macroeconomic models that draw upon insights from behavioural economics. De Grauwe's (2012) attempt at developing such a model is one example. Finally, to enhance the understanding of the interplay between behavioural economics and macroeconomics, economists should also consider using other types of information, such as case studies and historical episodes or qualitative studies. By

considering these alternative approaches and sources of information, researchers can potentially overcome the limitations of integrating behavioural economics into macroeconomic models and enhance the explanatory power of macroeconomic models.

Conclusion

The primary objective of the thesis at hand was threefold (see Appendix A). Firstly, it was aimed to offer a comprehensive overview of the impact of entrepreneurship from a macroeconomics perspective (Objective 1.1). Secondly, contributions to empirical and theoretical inquiry regarding entrepreneurship intention from a behavioural economics perspective were a concern (Objective 1.2). Lastly, the thesis strived to combine the research fields of macroeconomics and behavioural economics and to provide recommendations for future research (Objective 1.3).

In the first chapter, a brief review of the meta scientific background concerning entrepreneurship was presented as well as the different perspectives within economic research explained. The distinction between behavioural and macroeconomics was highlighted, along with the challenges of combining them. The systematic literature review in Chapter 2 focused on providing a deeper understanding of how entrepreneurial activity impacts socio-economic development in developing countries. A list of coded studies used within the present study was presented in Table B.1, being accessible to future researchers for their own purposes (Objective 1.1.1). The 18 studies included in the final review were additionally coded for several characteristics (Objective 1.1.2). These coded studies provide a summary of the main findings and present the research level concerning entrepreneurial activity outcomes in developing countries. As such, objectives 1.1.1. and 1.1.2 effectively achieved the overarching aim of 1.1., providing an organized and comprehensive set of studies for future research and conducting a thorough review and analysis of existing literature.

Chapter 3 of the present dissertation centered on an empirical study about some antecendents for EI from a behavioural economic perspective. More specifically, the study aimed to test the impact of EC and EE on EI with EM acting as a mediator. The results showed a significant impact of EC on EI (Objective 1.2.1). However, surprisingly and contrary to existing literature, the study did not find a significant impact of EE on EI (Objective 1.2.2). Considering the mediating inquiry of EM, the study found a significant mediating role of EM for the relation between EC respectively EE and EI. Thus, the study presented in Chapter 3 and its findings have fulfilled the overarching aim 1.2 by canging to a behavioural economics

perspective and contribute to empirical and theoretical inquiry of entrepreneurship intention formation.

The last aim of this dissertation was a) to explain the relationship and differences between macro and behavioural economics, b) to critically evaluate the level of current research in developing countries, and c) to make recommendations for future research. This third objective was achieved through various sections of this dissertation. The general introduction in Chapter 1 provided a background on behavioural and macroeconomics as well as their relationships. The systematic literature review in Chapter 2 critically evaluated the current research level of the impact of entrepreneurship in developing countries and provided a critical evaluation. Finally, the General Discussion integrated all the previous work into an overall framework, presenting the interrelation between behavioural and macroeconomics. In addition, Chapter 4 provided a list of recommendations for future research. As such, the overarching aim 1.3 to explain the relation and differences between behavioural and macroeconomics and make recommendations future research was fully achieved.

To sum it up, the present thesis has successfully achieved its predetermined aims and objectives, making a valuable contribution to behavioural and macroeconomics research. In addition, it has laid a foundation for future research regarding entrepreneurship in developing countries. The dissertation provides a list of recommendations that highlight the limitations and gaps in the current level of entrepreneurial research. Hence, the master thesis at hand bears potential by increasing the focus on research in developing countries and contributing to the advancement of knowledge in this area.

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APPENDIX A

Table A.1 Aims, Objectives, and Dedicated Chapters of this Dissertation.

General Aim	Specific Aim(s)	Objective(s)	Dedicated Chapter
1. Contribute to the literature on the effect of Entrepreneurship in Developing Countries from a macro- and behavioural economics perspective	1.1 Shed light from a macroeconomics perspective	1.1.1 Identify and list studies that analyze the effects of entrepreneurship on socio-economic factors in developing countries	Chapter 2
		1.1.2 Summarize main findings of these studies	
	1.2 Changing to a behavioural economics perspective and contribute to empirical and theoretical inquiry	1.2.1 Conduct and report an empirical study testing the effect of entrepreneurial culture on entrepreneurial intention	Chapter 3
		1.2.2 Conduct and report an empirical study testing the effect of entrepreneurial education on entrepreneurial intention	
		1.2.2 Conduct and report an empirical study testing the mediating role of entrepreneurial mindset on entrepreneurial intention	
	1.3 Explain the relation and differences between behavioural- and macroeconomics of the research and critically evaluate current research and make recommendations for improving the quality of future research	1.3.1 Provide a list of recommendations for future research	Chapter 1, Discussion Sections of Chapter 2 and 3, Chapter 4

APPENDIX B

Appendix B.1 The final search string for the search in the databases of EBSCO Business Source Complete and Web of Science was comprised as follows:

AB = (entrepreneur* OR startup* OR “start-up” OR "firm formation" OR "firm creation" OR "venture creation" OR "venture formation" OR “new firm” OR “new venture” OR “business formation” OR “business ownership” OR “self-employ*” OR selfemploy*)

AND

("economic growth" OR "economic welfare" OR "economic wellbeing" OR "economic well-being" OR "gross domestic product" OR GDP OR "gross national product" OR GNP OR "economic benefit" OR "economic benefits" OR “per capita income” OR “per capita real income” OR “total factor productivity” OR “job creation” OR “labour productivity” OR “labour productivity” OR “employment rate” OR “employment rates” OR “unemployment rate” OR “unemployment rates” OR “employment turbulence” OR “employment change” OR “employment growth” OR “employment development” OR “competitiveness index” OR “research expenditures” OR “development expenditures” OR “innovation quantity” OR “innovation quality” OR “innovative capacity” OR “income inequality” OR “socio-economic development” OR “GINI index” OR “Theil Index” OR “physical quality of life” OR “human development index” OR “gross national happiness” OR “ecological footprint” OR externalit* OR “literacy rate” OR “literacy rates” OR “crime rate” OR “crime rates” OR “life expectancy at birth” OR “welfare index” OR “environmental vulnerability index” OR “environmental performance index” OR “environmental sustainability index” OR "genuine savings" OR “genuine progress” OR "adjusted net savings" OR “CO2-emission” OR “CO2 emission”)

AND

(“developing countries” OR “developing country” OR “developing society” OR “developing societies” OR “middle income countries” OR “middle income country” OR “low income countries” OR “low income country” OR “lower middle income countries” OR “lower middle income country” OR “higher middle income country” OR “higher middle income country” OR “low and middle income country” OR “low and middle income countries” OR “less developed country” OR “less developed countries” OR “less economically developed country” OR “less economically developed countries” OR “underdeveloped country” OR “underdeveloped countries” OR “emerging market” or “emerging markets” OR “emerging economy” OR “emerging economies” OR “less industrialized” OR “less industrialised” OR “none industrialized” OR “none industrialised” OR “Africa” OR “African” OR “South America” OR “South American” OR “Asia” OR “Asian” OR “Eastern Europe”)

Table B.1 Empirical Studies on the Impact of Entrepreneurship on Economic Growth Included in the Systematic Review

Author(s)	Sample (Period)	Measure(s) of entrepreneurship	Measure(s) of welfare	Findings	Journal
Adusei, M. (2016).	12 African countries; 2004 -2011	Number of new firm formations	Natural logarithm of annual per capita GDP growth	New firm formations increase GDP growth.	*African Development Review*
Amorós, J. E., Ramírez, L. M., Rodríguez-Aceves, L., & Ruiz, L. E. (2021).	GEM Database; 2010-2019	Total entrepreneurial activitiy (TEA)	HDI and GINI	TEA negatively impacts GINI (reduction in income inequality) and positively impacts HDI	*Journal of Developmental Entrepreneurship*
Arouri, H., Youssef, A. B., & Quatraro, F. (2016).	Tunesia; 2000-2013	Number of new firm formations	Net job creation	Net effect for job creation is positive	*Eurasian Business Review,*
Dhahri, S., & Omri, A. (2018).	20 developing countries; 2001 - 2012	Number of newly registered businesses as a percentage of the working-age population	GDP per capita; per capita CO2 emissions; HDI	New firm formations increase GDPpC, HDI and CO2 emissions	*World Development*

Author(s)	Sample (Period)	Measure(s) of entrepreneurship	Measure(s) of welfare	Findings	Journal
Dostiyarova, A. (2012).	Kazakhstan; 2001-2010	Rate of enterprise change $Rate\ ENTP = (Number\ of\ ENTP\ new - Number\ of\ ENTP\ past \vert Number\ of\ ENTP\ past) * 100\%$	Rate of GDP change $Output\ Rate = (Output\ new - Output\ past \vert Output\ past) * 100\%$	New firms contribute to higher GDP	*Journal of Marketing Development and Competitiveness*
Dvouletý, O., Gordievskaya, A., & Procházka, D. A. (2018).	48 developing economies; 2000-2015	Business Ownership Rate	GDP, GNI and Human Development Index (HDI)	Ngative impact of entrepreneurial activity on country's GDP and GNI No impact measured for HDI	*Journal of Marketing Development and Competitiveness*
Feki, C., & Mnif, S. (2016).	35 developing countries; 2004 - 2011	New firm formations (labour market approach)	GDP per capita	New firm formations increase GDPpC	*Journal of the Knowledge Economy*

Author(s)	Sample (Period)	Measure(s) of entrepreneurship	Measure(s) of welfare	Findings	Journal
La Porta, R., & Shleifer, A. (2014).	68 emerging countries; 1990 - 2012	Change in self employment	Growth in GDP per capita, growth in labour force	Focusing on informal sector, positive correlation between the two measures	*Journal of economic perspectives*
Mahadea, D. (2012).	South Africa; 1994 - 2010	Number of new firm formations	GDP and employment ratio	New firms lead to an increase in employment and GDP	*Journal of Developmental Entrepreneurship,*
Meyer, N., & Meyer, D. F. (2017).	BRICS; 2001-2015	Total entrepreneurial activitiy (TEA)	GDP growth & employment rate	TEA increases GDP growth but is unrelated to employment .	*International Journal of Economic Perspectives*
Meyer, N., & Meyer, D. F. (2019).	Visegrád group of countries in Central Europe; 2006-2017	Established business ownership (EBO) and new business density (NBD).	GDP and employment to population ratio	Positive impact on GDP and employment but less on employment	*Polish Journal of Management Studies*

Author(s)	Sample (Period)	Measure(s) of entrepreneurship	Measure(s) of welfare	Findings	Journal
Pounder, P., & Gopal, N. (2021).	Small Island Developing States (SIDS); 1981 - 2016	Total Entrepreneurial activity (TEA) and Established Business Ownership (EBO)	GDP per capita	Early stage entrepreneurship positively affects GDP per capita	*Organizations and Markets in Emerging Economies*
Sabra, M. M., & Shreteh, D. (2021).	8 MENA countries; 2003 - 2019	Number of new firm formations relative to each country	GDP per capita	Positive effect of entrepreneurship on GDPpC	*International Economic Policy*
Salehizadeh, M. (2005).	19 nations in emerging economies ; 1990-2003	VC investments	GDP per capita and capital inflows	VC investment increase GDPpC and capital inflows	*Journal of Developmental Entrepreneurship*
Spremo, T., & Mićić, J. (2015).	Republic of Srpska; 2008-2014	Employment in SMEs	GDP growth, unemployment ration	Small enterprises have made a greater contribution to economic growth and employment	*Zbornik radova ekonomskog fakulteta u istocnom sarajevu*

Author(s)	Sample (Period)	Measure(s) of entrepreneurship	Measure(s) of welfare	Findings	Journal
Tsyganova, T., & Shirokova, G. (2010).	15 emerging economies; 1990 -2003	Total Entrepreneurial Activity (TEA)	Unemployment Ratio	No clear relation – results not significant	*Organizations and markets in emerging economies*
Urbano, D., Aparicio, S., & Audretsch, D. B. (2019).	18 non OECD countries; 2002 - 2012	Total Entrepreneurial Activity (TEA)	GDP per capita	Positive effect of entrepreneurship on GDPpC	*Institutions, entrepreneurship, and economic performance*
Youssef, A. B., Boubaker, S., & Omri, A. (2018).	17 African countries; 2001 - 2014	New registered firms (labour market approach; formal) & new unregistered firms (labour market approach; informal)	National CO_2 emissions, GDP per capita & negative Genuine Saving	Formal & informal new firm formations increase GDP per capita, CO2 emissions & negative genuine savings. Formal ones have a less negative impact on environment.	*Technological Forecasting and Social Change,*

Table B.2 Journals and Published Articles per Year Regarding Entrepreneurship and Socio-economic Development in Emerging Economies

Journal / Year	2003 – 2007	2008 – 2012	2013 – 2017	2018 – 2022	Total	%
Journal of Developmental Entrepreneurship	1	1		1	3	16,66%
Journal of Marketing Development and Competitiveness		1		1	2	11,11%
Journal of Economic Perspectives			2		2	11,11%
Organizations and Markets in Emerging Economies		1		1	2	11,11%
African Development Review			1		1	5,55%
Eurasian Business Review,			1		1	5,55%
International Economic Policy				1	1	5,55%
Institutions, entrepreneurship, and economic performance				1	1	5,55%
Journal of the Knowledge Economy			1		1	5,55%
Polish Journal of Management Studies				1	1	5,55%
Technological Forecasting and Social Change,				1	1	5,55%
World Development				1	1	5,55%
Zbornik radova ekonomskog fakulteta u istocnom sarajevu			1		1	5,55%
Total	1	3	6	8		
%	5,55%	16,66 %	33,33 %	44,44 %		

Table B.3 Number of Studies per Measured Impact

Measure of economic welfare	No. Of publications		
	Negative	Neutral	Positive
Employment		1	6
GDP	1		14

APPENDIX C

Appendix C.1 Survey Provided to Participants

Introduction

Dear Participant,

the purpose of this study is to better understand the entrepreneurial context of young adults in Kenia. Therefore, this study collects useful information on the effect of entrepreneurial culture and education on entrepreneurial intention.

The study is part of a Master Thesis at the Universidade Catolica Portuguesa in Lisbon, Portugal. Your input into the study is highly appreciated.

If you have any questions, please do not hesitate to contact me: email: s-jknief@ucp.pt

Thank you so much for your cooperation.

Informed consent

Your responses to this questionnaire are strictly confidential, and access to the data will be restricted to the study team. Furthermore, all data will be used only for scientific research and will not be personalized.

Participation in this research project is entirely voluntary on your part. You do not have to participate. If you opt to participate in this research, you are free to withdraw at any time. Simply closing your browser will discontinue your participation in the research study. Whatever decision you make will not punish or harm you in any way. You may also request that all of your personal information be removed from or deleted from research records.

The average time to complete the questionnaire is eight minutes.

The nature and purpose of this study have been sufficiently explained, and by choosing yes, I consent to participate. I am aware that I may leave the program at any time without incurring a penalty.

a. Yes
b. No

For all questions: Please circle your correct answer or specify it as indicated

Demographics

1. Age: How old are you?
    a. _____

2. Gender: What is your sex?
    a. Male
    b. Female
    c. Other

3. What is your nationality
    a. Kenia
    b. Uganda
    c. Tanzania
    d. Other: _____

4. What program are you enrolled in?
    a. Undergraduate
    b. Graduate
    c. PhD
    d. Other: _____

5. Which Faculty are you studying?
    a. Faculty of Engineering and Built Environment (FEBE)
    b. Faculty of Social Science and Technology (FSST)
    c. Faculty of Applied Science and Technology (FAST)

Entrepreneurial Intention

You will now read a series of statements regarding entrepreneurial intention. For each statement, please indicate if you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?

Code Variable	Item	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
EI1	I will be ready to do my best to be an entrepreneur in the near future					
EI2	I will do every attempt to begin and manage my own venture					
EI3	I have serious doubts about ever starting my own business					
EI4	I will initiate to open a business in the near future					
EI5	My final objective is to be an entrepreneur					
EI6	I will do my best to achieve my goal to be an entrepreneur					

Entrepreneurial Culture

You will now read a series of statements regarding entrepreneurial culture. For each statement, please indicate if you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?

Code Variable	Item	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
EC1	People around me are open to changes and new opportunities					
EC2	I was cultivated to trust and respect each other					
EC3	People around me care towards the development of the future					
EC4	Please select "Strongly Disagree" to demonstrate that you are carefully reading this item					
EC5	Students are enthusiastic about the entrepreneurial activities my campus is doing					
EC6	My family and friends would approve my decision to start-up a business					
EC7	I have access to information that will enable me to become an entrepreneur					

Entrepreneurial Education

You will now read a series of statements regarding entrepreneurial education. For each statement, please indicate if you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?

Code Variable	Item	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
EE1	Entrepreneurial education promotes creative ideas					
EE2	The learning model in the classroom provides the required knowledge toward entrepreneurship.					
EE3	The education in school drives skill and ability related to entrepreneurship					
EE4	Please select "Strongly Agree" to demonstrate that you are carefully reading this item					
EE5	The education activities incorporate entrepreneurship matter and allow opportunities to students to begin a business					
EE6	I think that entrepreneurship occasion could be enlarged through education activities.					
EE7	I believe that entrepreneurial education in school drives vocational students to be entrepreneurs					

Entrepreneurial Mindset

You will now read a series of statements regarding entrepreneurial mindset. For each statement, please indicate if you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?

Code Variable	Item	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
EM1	I have thought from both sides (opportunities or challenges) reactions incorporating with the entrepreneurial activities.					
EM2	I have seen time allocation for entrepreneurial matters.					
EM3	I have deliberated the financial chances to be engaged in the entrepreneurial activities					
EM4	Please select “Strongly Agree” to demonstrate that you are carefully reading this item					
EM5	I have evaluated for both opportunities and challenges linked with entrepreneurial activities.					
EM6	I have decided toward ideas for business opportunity in the entrepreneurial activities.					
EM7	I have disserted whether it is beneficial for me to be engaged in the entrepreneurial activities.					

Thank you so much for your time and input. Your aid is highly appreciated.

Table C.1 Sample Demographics

Variable		Frequency	Percent
Gender	Male	133	56.6%
	Female	102	43.4%
	Other	0	0.00%
Age	<18	4	1.7%
Mean: 22.12	18-20	73	31.1%
StDev: 3.65	21-23	94	40%
	24-26	57	24.2%
	27-29	4	1.7%
	>29	3	1.3%
Educational Level	Undergraduate	214	91%
	Graduate	18	7.7%
	PhD	3	1.3%
N = 235			

Table C.2 Item Loadings

Variable	Code Variable	Item Description	Factor Loading
Entrepreneurial Culture	EC1	People around me are open to changes and new opportunities	.813
	EC2	I was cultivated to trust and respect each other	.766
	EC3	People around me care towards the development of the future	.779
	EC5	Students are enthusiastic about the entrepreneurial activities my campus is doing	.609
	EC6	My family and friends would approve my decision to start-up a business	.816
	EC7	I have access to information that will enable me to become an entrepreneur	.750
Entrepreneurial Education	EE1	Entrepreneurial education promotes creative ideas	.847
	EE2	The learning model in the classroom provides the required knowledge toward entrepreneurship.	.848
	EE3	The education in school drives skill and ability related to entrepreneurship	.857
	EE5	The education activities incorporate entrepreneurship matter and allow opportunities to students to begin a business	.774
	EE6	I think that entrepreneurship occasion could be enlarged through education activities.	.770
	EE7	I believe that entrepreneurial education in school drives vocational students to be entrepreneurs	.830

Variable	Code Variable	Item Description	Factor Loading
Entrepreneurial Mindset	EM1	I have thought from both sides (opportunities or challenges) reactions incorporating with the entrepreneurial activities.	.772
	EM2	I have seen time allocation for entrepreneurial matters.	.694
	EM3	I have deliberated the financial chances to be engaged in the entrepreneurial activities	.677
	EM5	I have evaluated for both opportunities and challenges linked with entrepreneurial activities.	.883
	EM6	I have decided toward ideas for business opportunity in the entrepreneurial activities.	.788
	EM7	I have disserted whether it is beneficial for me to be engaged in the entrepreneurial activities.	.382
Entrepreneurial Intention	EI1	I will be ready to do my best to be an entrepreneur in the near future	.800
	EI2	I will do every attempt to begin and manage my own venture	.753
	EI3	I have serious doubts about ever starting my own business	.379
	EI4	I will initiate to open a business in the near future	.926
	EI5	My final objective is to be an entrepreneur	.888
	EI6	I will do my best to achieve my goal to be an entrepreneur	.922

Table C.3 Convergent Validity

Variable	AVE
Entrepreneurial Culture	0.57
Entrepreneurial Education	0.68
Entrepreneurial Mindset	0.59
Entrepreneurial Intention	0.74

Table C.4 Divergent Validity

Variable	EC	EE	EM	EI
Entrepreneurial Culture	0.754	-	-	-
Entrepreneurial Education	0.530	0.824	-	-
Entrepreneurial Mindset	0.380	0.410	0.768	-
Entrepreneurial Intention	0.648	0.604	0.564	0.860

Table C.5 Composite Reliability and Alpha Scores

Variable	Composite Reliability	Cronbach´s Alpha
Entrepreneurial Culture	0.929	0.86
Entrepreneurial Education	0.959	0.88
Entrepreneurial Mindset	0.893	0.79
Entrepreneurial Intention	0.971	0.90

Table C.6 Results of Measurement Outer Model

Variable	Code Variable	Item Description	Loading Factor	CR	α	AVE
Entrepreneurial Culture				0.929	0.86	0.57
	EC1	People around me are open to changes and new opportunities	.813			
	EC2	I was cultivated to trust and respect each other	.766			
	EC3	People around me care towards the development of the future	.779			
	EC5	Students are enthusiastic about the entrepreneurial activities my campus is doing	.609			
	EC6	My family and friends would approve my decision to start-up a business	.816			
	EC7	I have access to information that will enable me to become an entrepreneur	.750			

Variable	Code Variable	Item Description	Loading Factor	CR	α	AVE
Entrepreneurial Education				0.959	0.88	0.68
	EE1	Entrepreneurial education promotes creative ideas	.847			
	EE2	The learning model in the classroom provides the required knowledge toward entrepreneurship.	.848			
	EE3	The education in school drives skill and ability related to entrepreneurship	.857			
	EE5	The education activities incorporate entrepreneurship matter and allow opportunities to students to begin a business	.774			
	EE6	I think that entrepreneurship occasion could be enlarged through education activities.	.770			
	EE7	I believe that entrepreneurial education in school drives vocational students to be entrepreneurs	.830			

Variable	Code Variable	Item Description	Loading Factor	CR	α	AVE
Entrepreneurial Mindset				0.893	0.79	0.59
	EM1	I have thought from both sides (opportunities or challenges) reactions incorporating with the entrepreneurial activities.	.772			
	EM2	I have seen time allocation for entrepreneurial matters.	.694			
	EM3	I have deliberated the financial chances to be engaged in the entrepreneurial activities	.677			
	EM5	I have evaluated for both opportunities and challenges linked with entrepreneurial activities.	.883			
	EM6	I have decided toward ideas for business opportunity in the entrepreneurial activities.	.788			
	EM7	I have disserted whether it is beneficial for me to be engaged in the entrepreneurial activities.	.382			

Variable	Code Variable	Item Description	Loading Factor	CR	α	AVE
Entrepreneurial Intention				0.971	0.90	0.74
	EI1	I will be ready to do my best to be an entrepreneur in the near future	.800			
	EI2	I will do every attempt to begin and manage my own venture	.753			
	EI3	I have serious doubts about ever starting my own business	.379			
	EI4	I will initiate to open a business in the near future	.926			
	EI5	My final objective is to be an entrepreneur	.888			
	EI6	I will do my best to achieve my goal to be an entrepreneur	.922			

Table C.7 Kolmogorov-Smirnov Results

Variable	Code Variable	Average	Standard deviation	Statistic test	Significance Level
Entrepreneurial Culture					
	EC1	4.01	1.064	.805	<.001
	EC2	4.51	.893	.599	<.001
	EC3	4.10	1.020	.793	<.001
	EC5	3.77	1.086	.857	<.001
	EC6	4.38	.977	.667	<.001
	EC7	4.19	1.083	.739	<.001
Entrepreneurial Education					
	EE1	4.47	.984	.601	<.001
	EE2	4.06	1.091	.786	<.001
	EE3	4.08	.999	.800	<.001
	EE5	4.06	1.091	.794	<.001
	EE6	4.33	.956	.704	<.001
	EE7	4.15	.978	.780	<.001
Entrepreneurial Mindset					
	EM1	4.15	.938	.774	<.001
	EM2	3.96	1.053	.831	<.001
	EM3	3.89	1.170	.822	<.001
	EM5	4.15	.974	.779	<.001
	EM6	4.17	1.040	.755	<.001
Entrepreneurial Intention					
	EI1	4.29	1.217	.625	<.001
	EI2	4.24	1.190	.667	<.001
	EI4	4.31	1.114	. 652	<.001
	EI5	4.26	1.083	.706	<.001
	EI6	4.32	1.197	.611	<.001

Table C.8 Conceptual Model Fit

Variable	R^2	AVE
Entrepreneurial Culture	-	0.57
Entrepreneurial Education	0.794	0.68
Entrepreneurial Mindset	0.656	0.59
Entrepreneurial Intention	0.544	0.74
GoF	0.65	

Table C.9 Summary of Testing Results

Hypothesis	Relationship	Path coefficient	T-statistic	P-value	Decision
H1	EC → EI	0.612	8.49	<0.001	Accepted
H2	EC → EE	0.891	19.54	<0.001	Accepted
H3	EC → EM	0.454	11.08	<0.001	Accepted
H4	EE → EM	0.378	9.26	<0.001	Accepted
H5	EE → EI	0.133	1.548	0.124	Rejected
H6	EM → EI	0.362	4.921	<0.001	Accepted
H7a	EC → EM → EI	0.164	4.215	<0.001	Accepted
H7b	EE → EM → EI	0.137	3.394	<0.001	Accepted