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Entrepreneurship Promotion in Mozambique: The Role of Higher Education Institutions

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To my parents, Edmundo Enoque Libombo and Glória da Felicidade A.Mondlane;
My sons, **Celso** Reinaldo Luís, and, **Paz Libombo** James Humbane;
My sister **Ilunde Libombo**, my brother in law Miguel Gonçalves and my nephews Miguel,
Edmundo, Josué and Ilka;

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Abstract

With the current globalization and intense competition of nations, entrepreneurship is seen as fundamental to wealth and job creation and especially to economic and social development. For this reason, in developing countries the entrepreneurship theme is of particular importance and is receiving growing attention from both politicians and academics.

In recent years, the interest in entrepreneurship education, particularly at the higher education level, expanded worldwide. In the context of developing countries, Higher Education Institutions (HEI) are increasingly seen as tools for the development of entrepreneurial culture and as promoters of innovative or systemic entrepreneurship.

In the case of Mozambique, in the last decade, initiatives to promote entrepreneurship multiplied. Such interest is reflected in the National Agenda to Combat Poverty, a governmental program for poverty reduction and creation of new jobs for the 2006-2009 period, where one of the main vectors was the promotion of entrepreneurship through the education system with emphasis in entrepreneurship support at the level of HEIs, including new business incubation. Since then, entrepreneurship education and promotion in Mozambican HEI is becoming a reality.

Despite the fact that initiatives related to entrepreneurship education are beginning to multiply in developing countries, most studies refer only to developed countries' realities, with few describing and focussing on HEIs entrepreneurship education in other parts of the world. If, as is argued by several authors, in the entrepreneurial phenomena "context matters", a different context can represent a different configuration of factors and processes.

Thus, this study intends to contribute to fulfilling this gap. It focuses on the issue of entrepreneurship promotion and the role of HEIs as a support instrument in the context of developing countries. More specifically, based on the Mozambican case, it aims to understand the effectiveness of this instrument, identifying the main progresses and barriers in HEI's entrepreneurship education and the factors that affect its effectiveness. This purpose is translated in the following research questions: I) What factors influence positively and/or negatively entrepreneurial attitudes, intentions and behaviours? and Do these factors differ according to the level of economic development of the countries? II) Are the HEIs cooperation networks decisive for the development of teachers' and students' skills and for the promotion of entrepreneurship? III) What are the main achievements and barriers to the creation of

companies promoted/incubated by HEIs? IV) Do entrepreneurship education programmes in HEIs influence students' entrepreneurial (personal) characteristics, attitudes, perceptions and intentions? What other factors affect students' entrepreneurial characteristics, perceptions, attitudes and intentions?

The study includes both qualitative and quantitative methodologies. Qualitative methodologies were used to assess aspects related with the organization of HEIs and their entrepreneurship curriculum offer and support. Quantitative methodologies were used to study the importance of the context and the aspects related with the students, namely the impact/effectiveness of entrepreneurship education and other factors that affect students' entrepreneurship. In the first case, secondary data from Global Entrepreneurship Monitor (GEM) 2010 - Adult Population Survey (APS), Global Individual Level Data was used. In the second case, primary data was collected including a survey of 572 students that attended an entrepreneurship course and 149 students that did not attend in a sample of 10 HEI establishments with entrepreneurship education in a universe of 34 establishments. Qualitative analysis included analysis of documental sources, interviews and observation; quantitative analysis was done using Statistic Programme for Social Sciences (SPSS) and several techniques related with multiple regressions, ANOVA and comparison of means (T-test and qui-squared test)

The work is organized in three parts. The first provides the justification for the study, introduces the general theoretical framework and the purposes of the study and explains the structure of the thesis. The second part includes four chapters in the format of articles answering to the four research questions. The third part is a general conclusion, including limitations, further lines of research and implications of the study.

Keywords

Entrepreneurship promotion; Entrepreneurship education; Higher Education Institutions; Students Entrepreneurial intentions; Developing countries; Mozambique.

Resumo Alargado

Com a atual globalização e intensa competitividade entre nações, o empreendedorismo, é visto como fundamental para a criação de riqueza e mais postos de trabalho e sobretudo para o desenvolvimento económico e social. Por esta razão, nos países em via de desenvolvimento a temática do empreendedorismo assume particular importância e por isso tem vindo a suscitar um crescente interesse por parte das comunidades académicas e política.

Nos últimos anos, o interesse pelo ensino do empreendedorismo, sobretudo ao nível do ensino superior, expandiu-se por quase todo o mundo. No contexto de países em desenvolvimento, as Instituições de Ensino Superior (IES) são cada vez mais vistas como instrumentos para o desenvolvimento da cultura empreendedora e como promotoras de um empreendedorismo sistémico e inovador.

No caso de Moçambique, nos últimos anos têm-se multiplicado iniciativas de apoio ao empreendedorismo, quer por parte do Governo que por parte de outras organizações da sociedade civil. Tal interesse reflete-se na Agenda Nacional de Luta Contra a Pobreza, um programa Governamental para a redução da pobreza, para o período de 2006-2009, onde um dos desafios colocados é a promoção do empreendedorismo através do sistema educativo, em que destaca-se o apoio ao empreendedorismo ao nível das Instituições de Ensino Superior, incluindo a incubação de empresas. Desde então, o ensino e promoção do empreendedorismo nas IES tem-se vindo a tornar uma realidade nas Instituições de Ensino Superior Moçambicanas.

Apesar das iniciativas relacionadas com o ensino do empreendedorismo se começarem a multiplicar pelos países em desenvolvimento, a maior parte dos estudos centra-se nas realidades dos países desenvolvidos e poucos estudos descrevem e se focam na educação e promoção do empreendedorismo por via das IES naquela parte do mundo. Se, tal como defendido por vários autores, no fenómeno empreendedor “o contexto importa”, um contexto diferente, poderá também significar uma diferente configuração de fatores e processos.

Este estudo pretende contribuir para colmatar esta falha. O estudo centra-se na promoção do empreendedorismo e no papel das IES como instrumento de apoio nesse processo, no contexto dos países em desenvolvimento. Mais especificamente, baseado no caso de Moçambique, pretende identificar os principais progressos e barreiras no ensino e promoção do empreendedorismo pelas IES, compreender qual a eficácia deste instrumento e os factores que afetam essa eficácia. Este objetivo traduz-se nas seguintes questões de investigação: i) Que fatores influenciam positiva e/ou negativamente as atitudes, intenções e comportamento empreendedor)? Esses fatores diferem de acordo com o nível de desenvolvimento económico dos países? II) As redes de cooperação das IES são decisivas para o desenvolvimento de competências de docentes e discentes e para a promoção do empreendedorismo? III), quais são as principais realizações e os obstáculos à criação de empresas promovidas/incubadas por IES com educação para o empreendedorismo nos seus currículos? IV) a participação dos

estudantes em programas de educação para o empreendedorismo nas IES influencia as suas características (psicológicas), atitudes, percepções e intenções empreendedoras? Que outros fatores afetam as suas características, atitudes, percepções e intenções empreendedoras? O estudo inclui metodologias quantitativas e qualitativas. As metodologias qualitativas foram usadas para estudar os aspetos relacionados com a organização das IES ao nível da oferta curricular e apoio ao empreendedorismo. As metodologias quantitativas foram aplicadas para estudar a importância do contexto, e os aspectos relacionados com os estudantes, nomeadamente o impacto/eficácia da educação empreendedora e outros factores que afectam o empreendedorismo dos estudantes. No primeiro caso, utilizaram-se dados secundários do Global Entrepreneurship Monitor (GEM) 2010 - Inquérito à População Adulta (APS), Dados Globais de Nível Individual. No segundo caso, recolheram-se dados primários através de questionários a 572 estudantes que frequentaram disciplinas de empreendedorismo e 149 estudantes que não tiveram educação em empreendedorismo nas IES com ensino de empreendedorismo. A análise qualitativa incluiu a análise de fontes documentais, entrevistas e observações; a análise quantitativa foi desenvolvida com a ajuda do Programa Estatístico para as Ciências Sociais (SPSS) envolvendo um conjunto de técnicas relacionadas com regressões múltiplas, ANOVA e testes de comparação de médias (t-test e teste do qui-quadrado).

O trabalho está organizado em três partes. A primeira inclui a justificação, introduz o quadro teórico geral para a investigação bem como os propósitos do estudo e explica a estrutura da tese. A segunda parte inclui quatro capítulos no formato de artigos, procurando dar respostas às questões de investigação. A terceira parte, é uma conclusão geral do trabalho, incluindo limitações, linhas para futuras investigações e implicações do estudo.

O primeiro capítulo, procura evidenciar a importância do contexto nos processos empreendedores. Usando dados do Global Entrepreneurship Monitor (GEM) 2010 - Inquérito à População Adulta (APS), Dados Globais de Nível Individual - de três países com diferentes níveis de desenvolvimento económico, mas com uma história e uma língua comum; criou-se um índice quantitativo de atitudes, intenção e comportamento empreendedor (Índice Empreendedor), e pela aplicação de regressão linear múltipla, foi possível identificar os determinantes das intenções, atitudes e comportamento empreendedor e sua importância em diferentes contextos, tais como (i) género, (ii) educação, (iii) redes empreendedoras, (iv) motivação por oportunidade e necessidade, e (v) percepção de oportunidade na área de residência. Mais especificamente, os resultados mostram que os indivíduos do sexo masculino, com níveis de educação mais elevados e com redes pessoais empreendedoras tendem a apresentar índices mais elevados de empreendedorismo. Além disso, o estudo empírico evidencia a importância da percepção de oportunidades para a formação de atitudes, intenções e comportamento empreendedor. Os resultados também mostram que o nível de desenvolvimento económico afeta não só as atitudes, intenções e comportamentos empreendedores, mas também a importância/peso dos seus determinantes.

O segundo capítulo, centra-se na identificação dos principais obstáculos à criação de empresas promovidas / incubadas por IES com educação para o empreendedorismo nos seus currículos. O estudo empírico é baseado numa amostra de 10 estabelecimentos das diferentes 5 IES existentes com educação para o empreendedorismo (antes do ano de 2014). A coleta de dados foi feita através de uma entrevista exploratória com os diretores das IES e consulta de fontes documentais. Os resultados mostram que as barreiras estão relacionadas com a falta de professores formados/qualificados em empreendedorismo, as deficientes redes com empresários e outras instituições e má relação com a comunidade empresarial, tanto devido a dificuldades materiais para implementar atividades práticas (por exemplo, visitas a empresas) como pela falta de receptividade do lado da comunidade empresarial. Apesar da existência de algum material educativo, mencionado como o principal recurso para a educação para o empreendedorismo, algumas IES indicam que o material disponível não é suficiente, considerando tanto a quantidade como a qualidade. A inexistência de outros recursos educacionais e infra-estruturas de apoio, como incubadoras, laboratórios e bibliotecas, muitas vezes associada com a falta de recursos financeiros também foi mencionado como um importante obstáculo à criação de empresas por alunos e professores das IES. O ambiente político e de negócios foi também referido como uma importante barreira à criação das empresas, nomeadamente no que diz respeito aos sistemas financeiros e fiscais.

O terceiro capítulo centra-se na importância das redes de cooperação entre as IES para o desenvolvimento de competências dos professores e para a promoção do espírito e competências empresariais dos alunos, em especial no contexto dos países em desenvolvimento. São apresentados dois artigos com natureza exploratória e descritiva.

Num primeiro artigo, o estudo empírico inclui uma amostra de 10 estabelecimentos das 5 IES com educação para o empreendedorismo (antes do ano 2014) existentes em Moçambique. A recolha de dados foi feita através de entrevista exploratória com os diretores das IES e consulta de fontes documentais. Os resultados mostram que uma estratégia assente em redes de cooperação está presente sobretudo em IES públicas, que, tendem a apresentar melhores resultados em matéria do número de professores com formação específica em empreendedorismo e número de negócios criados. Este estudo também mostra alguns sinais promissores relativos ao desenvolvimento coordenado e global de esforços para promover a qualidade da educação para o empreendedorismo. Destaca-se também o papel dos parceiros públicos no envolvimento de outras organizações privadas nacionais e internacionais no processo. Apesar do fato de que a maioria dessas iniciativas está ainda numa fase inicial e de que não é possível neste momento prever totalmente o que será o seu impacto ou resultado, este estudo representa uma primeira tentativa nesse sentido.

O segundo artigo apresenta, com mais algum detalhe, o caso da Escola Superior de Negócios e Empreendedorismo de Chibuto - (ESNEC), uma das cinco escolas da Universidade Eduardo Mondlane e uma das poucas instituições de ensino superior dedicada especificamente a educação para o empreendedorismo em Moçambique. Os dados sobre este estudo de caso

resultaram de uma observação participante da pesquisadora e os dados foram coletados entre fevereiro e junho de 2013 através de fontes documentais e uma entrevista exploratória com o diretor da escola. O estudo mostrou que as redes de cooperação universitárias têm sido usadas como ferramentas para o desenvolvimento das competências empresariais de professores e alunos e como veículo de disseminação de conhecimentos dentro da comunidade. Mais especificamente, a cooperação com outras universidades vem sendo usada para promover a mobilidade dos recursos para o propósito específico de melhorar o conhecimento e competências de empreendedorismo dos professores; outros projetos de cooperação, têm sido implementados, a fim de promover a inovação e a difusão de conhecimento do negócio entre estudantes e empresários da comunidade local envolvente.

Finalmente, no quarto capítulo procura-se compreender i) se a participação dos estudantes em programas de educação para o empreendedorismo nas IES influencia as suas características (psicológicas), atitudes, percepções e intenções empreendedoras; e também ii) se existem outros fatores que afetem as suas características, atitudes, percepções e intenções empreendedoras. Mais especificamente, tem como objetivo compreender a influência do género, antecedentes familiares, do tipo/fonte de recursos financeiros preferencialmente utilizados e das redes nas suas características, atitudes, percepções e intenções empreendedoras. Após uma revisão de literatura focada na educação para o empreendedorismo e determinantes da intenção empreendedora, atitudes e comportamentos, o estudo empírico é apresentado. Este inclui uma amostra de 10 estabelecimentos IES, seleccionados a partir de um universo de 34 com a educação para o empreendedorismo. A recolha de dados foi realizada em 2015 por meio de questionários a (n=721) estudantes dos 2º, 3º e 4º anos, dentre os quais (n=572) frequentaram o ensino de empreendedorismo e os restantes (n=149) não participaram em qualquer programa de ensino de empreendedorismo. A análise estatística, incluindo a regressão linear múltipla, ANOVA e comparação de médias (Teste-t e teste qui-quadrado). O estudo conclui que i) a atitude pessoal e o controlo comportamental percebido influenciam a intenção empreendedora; ii) a educação para o empreendedorismo tem influência positiva no controlo comportamental percebido. Quanto aos estudantes com educação para o empreendedorismo, conclui-se que iii) existem diferenças significativas em termos de atitudes, percepções e intenções empreendedoras dos estudantes entre as escolas; iv) o género, os antecedentes familiares e as redes empreendedoras afectam as atitudes, percepções e intenções empreendedoras dos estudantes.

Palavras-chave:

Empreendedorismo; Educação para o empreendedorismo; Instituições de Ensino Superior; Intenção empreendedora; Países em Desenvolvimento; Moçambique.

Contents

Part 1	1
Background	2
Main theories applied to the study of entrepreneurship promotion through the HEIs	6
Research questions and objectives	11
Thesis structures, Model and Design.....	13
References	17
Part 2	27
Chapter 1 -Determinants of entrepreneurial attitudes, intentions and behaviours in diverse geographic regions with different levels of economic development: A study with Portuguese-Speaking Countries (Angola, Brazil and Portugal)	29
Chapter 2 - Entrepreneurship education in the context of developing countries: study of the status and the main barriers in Mozambican Higher Education Institutions	59
Chapter 3 - Cooperation networks for entrepreneurship education in Higher Education Institutions: Strategies for skills development in Mozambique ..	87
Chapter 4 - Entrepreneurship education in Higher Education Institutions (HEI) in Mozambique: Impact on students and factors affecting its effectiveness	135
Part 3	175
Conclusions.....	177
Limitations and future lines of research.....	180
Implications for policy and HEI.....	182

Part 1

Background

The study of entrepreneurship (creation and development of companies) as well as possible measures for its encouragement is becoming increasingly and particularly important in the development of various regions and countries (GEM, 2012). This is due to the recognition of entrepreneurship as one of the factors influencing the economic and social development of regions and countries because of its positive impact on job and wealth creation. Thus a growing interest aroused in the business academic and political communities, (Birch, 1987; Reynold et al., 1994; CCE,2003; Lee et al., 2004; Dahl and Reichstein,2007; Sarkar,2007; Praag and Versloot,2007; Reynolds and White, 1997; Litan,2008; Hisrich,2009; Valá,2009; Kane, 2010; Crisculo,et al., 2012).

Especially in developing countries, such as the countries of sub-Saharan Africa, entrepreneurship is presented as a life and livelihood solution for different segments of the population: from unemployed individuals to the public and private employees dissatisfied with their current employment situations. Entrepreneurship is also envisaged by policy makers as the solution for inclusive economic growth and for social inclusion (Valá, 2012; Feliciano and Fonseca-Statter, 2008).

Small and Medium Enterprises (SMEs) are the dominant form of business In most countries of this region, integrating about 90% of business operations and creating over 50% of employment (Legatum Institute, 2011). However, little is known about the entrepreneurial process. The business landscape of sub-Saharan Africa is a particular context, quite different from the context of the most developed countries, because there is an unfavourable business environment due to factors such as inadequate legal, regulatory and financial systems, insecurity, corruption, insufficient and poor infrastructures and low level of education in entrepreneurship (Weimer, 2012; Legatum Institute, 2011; Rebecca and Benjamin, 2009; Valá, 2009; William, 2009; Ugwushi, 2009; Okpara and Wynn, 2007; Kauffmann, 2005; ECA, 2001). Entrepreneurship is mainly based on local markets and it is characterized by an underdeveloped regional integration, (Lucky et al., 2012; Legatum Institute, 2011; Valá,2009)and high level of informal businesses.

Recently, in Sub-Saharan Africa, Governments have become aware of the importance of promoting entrepreneurship through several programmes directed to entrepreneurs but also to the several institutions that can improve business environment and culture. (Kaffmann, 2005; Okpara and Wynn, 2007; Rebecca and Benjamin, 2009; Valá, 2009; William, 2009; Ugwushi, 2009; Lucky et al., 2012; Legatum Institute, 2011). In this context, where entrepreneurship is seen as a vector of change and development, HEIs are emerging as a fundamental tool for the development of entrepreneurial culture and competencies (Rengiah and Sentosa, 2015).

Indeed, in Sub-Saharan Africa HEIs emerged under the sign of the recovery of the identity and dignity of Africa and its culture after a prolonged colonial experience. The African university emerges as a possibility of meeting science, development and vast cultural heritage thus constituting the symbol of the rebirth of black Africa (Ki-Zerbo, 1972), except for rare cases in which the history of modern university in Africa's sub-Saharan zone is recent (Court, 1991).

Since most Sub-Saharan Africa countries have experienced troubled times in its history characterized by social upheavals, civil wars, coups, natural disasters that have affected the lives of citizens, governance and the functioning of institutions, universities were not immune to these events.

Most universities in Sub-Saharan Africa, assumed as change agents in the transition to the post-colonial era in the sixties of the last century, had the role of contributing to the elimination of poverty and underdevelopment, which generated the idea of "developmental university" (Court 1991: 329). With some exceptions - the University of Cairo and Algiers, created in 1909, the Senegal university created in 1918 and the Victoria College of Cape Town, South Africa, created in 1916 - the vast majority of universities in this region broke out after 1960 (Thompson, 1977). They were characterized by a lack of resources, decontextualisation from local reality, and overdependence on a foreign faculty. Only about 10% of these institutions' academic staff was indigenous and it was formed abroad (Court, 1991). In fact, every new country intended to protect at least two national symbols of independence: a national flag and a national university (Hughes and Mwiria, 1991).

In spite of the diversification of educational areas in Sub-Saharan Africa, there is, in many cases, a disconnection between higher education and the labour market outside the universities because the students are prepared for work in the public sector and not in the private sector and because many courses tend to focus on providing training in bureaucratic areas instead of innovative ones. College students have little grasp on how to apply their training in areas such as entrepreneurship and problem solving in the communities where they live. So this scenario resulted in: I) unemployment or informal work, even for students with training in higher education because the public sector is unable to meet the demand for employment; II) throughout the continent, in all levels of education, there are huge discrepancies between the profiles of job seekers and the characteristics required by employers; III) the proliferation of innovation centres in Africa that can be seen as a sign of failure of the higher education system (Kelly, 2014).

In the case of Mozambique, the higher education system has periodised its philosophical transformations, vision and mission, and societal and structural function in three periods:

- i) the colonial period, from 1962-1975, with the prevalence of General Studies and University of Mozambique (EGUM) who went to University status in 1968, becoming University of Lourenço Marques (ULM);
- ii) The Mozambique Independence/post-colonial period from 1977 to 1987, where the ULM was renamed in honour of the founder and first president of the Mozambique Liberation Front (Frelimo), becoming the Eduardo Mondlane University (UEM) and was characterized by socialist societal vision and centrally planned State. Also in this period the number of institutions increased. In 1985 the Higher Pedagogical Institute (ISP) was created, and was later elevated to university status, becoming the Pedagogic University (UP). In 1986 the higher institute for training diplomats, the Institute of International Relations (ISRI) was created. The decline of this period occurs following the global failure of the socialist project in Mozambique and symbolically culminates with Samora Machel's death in 1986 (The Rosary, 2012; Langa, 2011; Beverwijk, 2005).
- iii) In The third and current period, which began in 1990 with the collapse of the project to create a socialist society, Mozambique adopts a new Constitution of the Republic open to the introduction of multi-party democracy and liberalization of the economy, thus ending the civil war that lasted sixteen years and decimated the lives of more than a million Mozambicans (Langa, 2006). Higher education began to be characterized by the emergence of private providers and by the continued expansion of public institutions at national level. In 2013, the first data collection phase and information for the development of the present study, according to the Ministry of Education, Mozambique had forty-four higher education institutions- including universities, academies, higher schools, higher institutes- revealing a degree of differentiation and diversification of the system and teaching areas (Republic of Mozambique, 2012).

In Mozambique, as in other developing countries, the entrepreneurship theme is of particular importance and so it has been giving rise to a growing interest in the scientific, academic and political communities. A sign of this is the fact that in recent years initiatives to support entrepreneurship, by the Government and by other civil society organizations, have multiplied in order to improve the level of development (looking for a poverty reduction and inclusion social). Since the theme of promoting entrepreneurship in Mozambique is particularly important, the Government of Mozambique implemented the National Fight Agenda Against Poverty as a poverty reduction measure, One of the challenges of this Agenda is the promotion of entrepreneurship through the education system, especially through Higher Education Institutions (PARPA II, 2006-2009: 108; Valá, 2012).

In the context of developed countries, the literature has shown that entrepreneurship education has been expanding. For instance, Katz (2008) refers that the number of

entrepreneurship courses grew tenfold in the US in the period from 1979 to 2001 and Gwynne (2008) mentions that investment in entrepreneurship programmes is still on the growing. More recently, in developing countries, entrepreneurship education has also become a central concern and initiatives related to entrepreneurship education are beginning to multiply (e.g. North, 2002, Bawuah et al., 2006; Robb et al., 2014). Despite that, most studies refer to developed countries' realities and few describe and focus on HEIs' entrepreneurship education in those parts of the world. I, as argued by several authors (Boettke and Coyne, 2009. Welter, 2011), in the entrepreneurial phenomena "context matters". Then, studies concerning the specific reality of developing countries are needed.

This study intends to contribute to fulfilling this gap. It focuses on the issue of entrepreneurship promotion and the role of HEIs as support instruments in the context of developing countries. More specifically, being Mozambique a case of recent HEIs' entrepreneurship education boom in Sub-Saharan Africa, this study addresses the role of Higher Education Institutions and entrepreneurship education as one of the main instruments of entrepreneurship promotion in this country. It aims to understand its effectiveness identifying the impact in students and the main progresses and barriers to the creation of companies promoted by or incubated in HEIs with entrepreneurship education in their curricula.

Main theories applied to the study of Entrepreneurship Promotion through HEIs

As mentioned before, entrepreneurship is actually seen as one of the main solutions for the problem of unemployment and as one of the most important factors responsible for economic and social progress of a region or a country.

Despite the fact that the discussion around entrepreneurship ideas began centuries ago, in terms of scientific research it only took large proportions in the eighties, (Hisrich, 1988; Stevenson and Harmelin, 1990; Bouwen and Steyaert, 1992; Veciana, 2006; Hisrich, et al., 2009). This happened due to the oil crisis that occurred in this period, which showed that large companies were very vulnerable to sudden changes in the surroundings, making the failure of planning systems and the inability to adapt quickly to new situations evident. By this time, a phase of restructuration and reallocation of multinationals started, with the consequent destruction of jobs (Veciana, 2006). Since that time, studies by some researchers show that: (i) the majority of the new jobs created in this period resulted from the creation of new firms (Fothergill and Gudgin 1979; Birch, 1981; Lumpkin and Ireland, 1988; Veciana, 2006). In many countries, the creation of new businesses is seen as an important factor in the setting of recovery strategies and economic growth (Birley, 1989); (ii) in a knowledge society where the dominant production factor is the knowledge itself, the competitive edge of the economy depends on innovative activity and new business creation (Veciana, 2006). This is why business creation remains throughout the ages as a very important area for researchers: because it contributes to the introduction of new technologies, new products, new services and forms of organization. This is reported in the literature on entrepreneurship as one of the basic factors for economic growth and for the creation of qualified jobs and market efficiency (Birch, 1981; Reynolds et al., 1995; Sarkar, 2007).

The fields of entrepreneurship studies of interest to this study, as well as major related theories are those presented in Table 1, according to different levels of analysis (Veciana, 2006, 2008).

Table 1: Fields of study and main theories in entrepreneurship by levels of analysis

Level of analysis	Micro level (individual)	Middle level (organisation)	Macro level (Local/regional/ national/global economy)
Fields of study	The entrepreneur: a person who creates a new business or firm; Activities of business creation, entrepreneurial decisions and business functions Personal factors that promote or hinder the creation of new businesses.	Organisational factors that promote or hinder the creation of new businesses and business innovation.	The role of new enterprises in economic growth and local or regional development Policies for fostering entrepreneurship and SMEs.
Main theories	Theory of personal traits (Traits approach); Behavioural Theory ; Networks Theory (individual)	Networks Theory (organisational) Incubator Theory	Schumpeter's Theory of economic development ; Institutional Economic Theory

Adapted from Veciana (2006,2008).

According to table 1, the first level of the analysis of entrepreneurship is the micro level which focuses on the individuals who perform entrepreneurial activities. According to Veciana (2006.2008), the theories underpinning this field of study are mainly the theory of personality traits, behavioural theory and (personal) networks theory. In this study, this level of analysis is considered by focusing in HEIs' students as (potential) entrepreneurs. They are understood as persons who identify opportunities, create new businesses and are able to gather the necessary resources to face risk and uncertainty, in order to profit and make business grow (Scarborough and Zimmerer, 1993). In order To be a potential successful entrepreneur, it is fundamental to develop entrepreneurial intentions and skills for entrepreneurship, that is, that certain individual features necessary to the performance the business function are developed.

In the second level of analysis (middle level), studies are concerned with the factors that, in organisations, promote or hinder the creation of new businesses. According to Veciana (2006, 2008), the theories underpinning this field of studies include the Transaction Costs Theory, the Incubator Theory, and Cooperation and Networks Theory. These last two theories are those of interest for the purpose of this study. The study focuses on how HEIs promote the creation of new businesses by their students both through entrepreneurship courses and business incubation. The authors who study the relationship between business creation and entrepreneurship education in HEIs report that this relationship is supported by network creation and knowledge sharing based on interdependence between the two parties and

reciprocity of benefits and costs, and by increased regional economic development as well as implementation, growth and development of business promoted through the HEIs (Smith, 2003; Felman et al., 2006; Khademian and Weber, 2008).

Finally, the third level of analysis, the macro level (including local/regional/national/global levels of economy) is focused on the role of entrepreneurship in economic growth and development. It also includes studies about policies for promotion of entrepreneurship and Small and Medium Enterprises (SMEs). Several authors believe that entrepreneurship is a key factor for development and economic welfare (Veciana: 2006, 2008; Dahl and Reichstein, 2007) and that the effectiveness of entrepreneurship support policies depends on the circumstances of the country or region (Veciana: 2006 2008; Storey, 2008). The main theories that support this field of studies are the Schumpeter's Theory of Economic Development and Institutional Economic Theory. At this level, this study is focused on two different settings - the context of Sub-Saharan developing countries and the Mozambican context.

A brief explanation of each theory follows:

The Theory of personal traits (trait approach) focuses on the psychological characteristics of people identified as entrepreneurial and on the personal characteristics of entrepreneurs, and intends to answer the questions: why some individuals create businesses and others not?; and why some entrepreneurs are more successful than others? This theory answers these questions based in the assumption that the differences occur due to certain inherent qualities or characteristics of the individuals (Dinis and Ussman, 2006). This perspective can be recognized in any research seeking to identify traits that distinguish entrepreneurs from non-entrepreneurs (Hoy, 1987; White and Reynolds, 1993; Green and Dent, 1996) or by researchers seeking to identify typologies that relate to personal traits and characteristics of entrepreneurs with business performance (Birley and Westhead, 1994; Dunkelberg and Cooper, 1982; Khan, 1986). The large amount of literature produced under this approach includes the study of the demographic characteristics of the entrepreneur, family history, work experience, education / skills, attitudes, values and motivations (Dinis and Ussman, 2006). In the context of this study, this theory is relevant for the understanding of the factors and characteristics that determine the entrepreneurial intentions of students.

The Behavioural Theory considers that what differentiates the entrepreneur from a non-entrepreneur is the fact that entrepreneurs create businesses while others not, so the focus of attention is on what the entrepreneur does and not on what he/she is (Gartner, 1989; Veciana, 1995; Dinis and Ussman, 2006). The prospect of behaviour theory considers that while in the trait theory the entrepreneur is seen as a set of personality traits in behavioural theory the entrepreneur is seen from the perspective of the activities he/she develops for the creation of an organization. And if the central question is how the entrepreneurs should be seen in relation to the role of making organization/business emergence possible (Dinis and

Ussman, 2006). If entrepreneurship is behavioural, being an entrepreneur is not a fixed state of being but rather a role that individuals take to create organizations (Gartner, 1989), and the behaviours and skills that characterize it can be learned /acquired throughout life gain as they will act (Dinis and Ussman, 2006), such as the ability to identify and evaluate problems (Gartner, 1989) or to develop networks (Johannisson, 1986).

The network theory considers that networks are a set of linked exchange relationships (Håkansson, 1982; Anderson et al., 1994; Anderson et al., 1994; Holm et al., 1999; Rossiter, 2003; Lemieux and Ouimet, 2012). In the network, the different positions of the individuals or organisations represent different opportunities for each player's access to resources and new knowledge that is critical for the development of new products or innovative ideas (Felman et al., 2006; Marouf, 2007; Suire and Vicente, 2008).

At the *individual* level network theory focuses on the entrepreneur's personal network, consisting in individual contacts including family, friends, acquaintances, business contacts, other companies, universities and other institutions, that promote or facilitate the entrepreneurial process (Filion, 1991; Holm et al., 1996; Johannisson, 1998; Holm et al., 1999).

At the *organizational* level, network theory focuses on the relationship between organizations assuming that this interdependence and reciprocity allows benefits and reduction of costs for the parties involved (Smith, 2003; Felman et al., 2006; Khademian and Weber, 2008). This approach also focuses on the organisation's strategy for the establishment of partnerships and cooperation networks for the development of sustainable skills (Vale and Lopes, 2010; Lemieux and Ouimet, 2012). From the perspective of cooperation, network theory also considers that cooperation is beneficial for: the reduction of the cost of technological developments and of the time of development and commercialization of new products; the decrease of the risk of market entry; the achievement of economies of scale in production (Moreira and Corvelo, 2002; Lemieux and Ouimet, 2012); the process of integration of resources or learning (Lemieux and Ouimet, 2012; Bramwell and Wolfe, 2008). In this investigation this approach is useful to study the relationship between a HEI and other institutions (university networks) in order to promote entrepreneurial competences and the creation of new businesses. In fact, the literature refers that, in developing countries, the connections between the different actors in society is dysfunctional and weak, with special emphasis on the link between universities and the private sector (Lalkaka, 2001). Chapman et al (2014) distinguish university networks from university-to-university partnerships. According to these authors "while university-to-university partnerships generally involve two institutions collaborating to accomplish a particular activity, university networks typically involve a larger number of institutions and focus on a broader set of activities organised around a particular issue or goal" (p.619).

The Incubator theory is focused on organizations that support businesses in their start-up stages (NBIA, 1997). Incubators are generally organisations that provide low-cost, property-based facilities and shared services to nurture the development of new firms (OCDE, 1997). The incubator's main characteristics are: the availability of modular and expandable space to let for a limited period; access to shared costs services, especially in administrative functions; access to technological or management support, such as privileged access to scientific communities and business networks; and, a place for interaction between companies and "moral" support coordinated by management team (Albert and Gaynor, 2001). Although the classifications and types of incubators are not homogeneous, it should be noted that Allen and McCluskey (1990) developed a theory based on the idea of added value "continuum", a scale whose extremes are property development and business development, and refer to four types of incubators that are distributed along the value added "continuum" from the least added value to the greatest added value: (i) development of incubators property for profit, (ii) business development incubators non-profit, (iii) university incubators and (iv) seed capital incubators for profit. The type and incubator approach with greater relevance for the present study, are the university incubators. Several authors have addressed this type of incubator and consider that these are integrated into the set of incubators classified as public incubators, whose main objective is to reduce input costs in business, providing new businesses with a wide range of services, from the provision of space for installation, infrastructure and logistical support to more specialized services of technical assistance, management support, preparation of business plan, etc., (Allen and McCluskey 1990; Soetanto and Geenhuizen, 2005; Grimaldi and Grandi, 2005; and von Carayannis Zedtwitz, 2005; Phillips, 2002). The University incubators emerged as a result of the development of scientific and technological knowledge at the end of the twentieth century, and the need for universities to interact with the business community plays a significant role in the transfer of technology from universities to businesses, providing support and advanced services for the new knowledge-based companies (Aerts et al., 2007; Hackett and Dilts, 2004; Aernoudt, 2004; Grimaldi and Grandi, 2005). These incubators play an important role in the initial business concept definition and in the start-up of new companies resulting from the applied research (Grimaldi and Grandi, 2005).

The theory of economic development present in the works of Schumpeter focuses on the action and the importance of the entrepreneur (innovator) and considers him/her the agent responsible for the introduction of new combinations of available resources i.e.: new products, services or new organizational methods (Schumpeter, 1982). The Innovations and the wealth generated are introduced in societies by the entrepreneur (innovator) through the creation of new organizations, the introduction of new products and new methods of production; the opening of new markets; or the use of new sources of supply of raw materials or intermediate goods (Schumpeter, 1942). This entrepreneurial process was called by Schumpeter "creative destruction", highlighting the role of the entrepreneur as disrupter of

market stabilities (Schumpeter, 1942). In fact, this theory associated entrepreneurship to economic development and also demonstrated how innovative practices introduce discontinuities in the cyclical economy (Schumpeter, 1942). For this author and his followers (e.g. Drucker, 1985) the entrepreneur and the entrepreneurial/innovation process are the drivers of economic development.

The Institutional Economic theory appears as a reaction to the organizational models supported by rationalistic conceptions, benefiting the relations between the organization and the surrounding environment (internal and external) as well as the consideration of the role of culture in shaping the organizations and individuals behaviours (Carvalho and Vieira, 2003). This theory integrates economic, political and socio-cultural aspects influencing the performance of entrepreneurs and organizations. Institutions are multifaceted social life structures consisting of symbolic elements, social activities and material resources that impose limitations on human agency through the creation of borders and legal, moral and cultural boundaries (Scott, 2001). According to North (1990), Institutions in society (including governments and other organizations besides firms) are a key to economic performance, therefore affecting, positively or negatively, the economic performance of companies through incentive structures and opportunities that determine economic performance in the long term (North, 1993). Thus, the Institutional Economic Theory explains the links between economic, social and business institutions (Garrido and Urban, 2007). Toyoshima (1999), for instance, argues that institutional framework directly influences the economic performance of countries by reducing transaction costs and reducing processing (or production) costs that together add up total costs. Thus Institutions are essential for the understanding of the interrelationship between politics and the economy and the consequences of this relationship for growth, stagnation or economic decline (North, 1993).

Research questions and objectives

In accordance with the background set out above and the main theories used to explain entrepreneurial processes the research question for this study concerns three levels of analysis: the context (macro level); the HEIs (organizational level) and the students (individual level) as follows (table 2):

Table 2: Research questions at the three levels of analysis

<p><i>Macro level:</i> Influence of context in entrepreneurial processes</p>	<p>I) What factors influence positively and/or negatively entrepreneurial attitudes, intentions and behaviours? and do these factors differ according to the level of economic development of the countries?</p>
<p><i>Mezzo level:</i> Organizational factors that promote or hinder the creation of new businesses and business innovation</p>	<p>II) What are the main achievements and barriers to the creation of companies promoted /incubated by HEIs with entrepreneurship education in their curricula?</p>
	<p>III) Are HEIs cooperation networks decisive for the development of teachers' and students' skills and for the promotion of entrepreneurship?</p>
<p><i>Micro level</i> Impact on students and personal factors affecting impact.</p>	<p>IV) Does entrepreneurship education programmes in HEIs influence students' entrepreneurial (personal) characteristics, attitudes, perceptions and intentions? What other factors affect students' entrepreneurial characteristics, perceptions, attitudes and intentions?</p>

Based upon these four research questions, this thesis correspondingly presents the following objectives:

1. To identify and compare the determinants of entrepreneurial attitudes, intentions and behaviours among Portuguese-Speaking Countries (PSC) with different levels of economic development: Portugal - an innovation driven economy, Brazil - an efficiency driven economy and Angola - a factor driven economy;
2. To understand how entrepreneurship education is being implemented in Mozambique and to identify the main achievements and barriers to the creation of businesses promoted/incubated by HEIs with entrepreneurship education in their curricula;
3. To understand how HEIs' cooperation networks can be decisive for the development of teachers' skills and for the promotion of entrepreneurship in the context of developing countries and specifically in Mozambique;
4. To assess the impact of HEIs' entrepreneurship programmes on students in Mozambique and to understand what factors determine the (in)effectiveness of entrepreneurship education in HEIs. More specifically, to understand the influence of gender, family history, financial resources and networks in the outcomes of entrepreneurship education.

Thesis Structure, Model and Design

This thesis is structured in three core sections. On this first part an introduction of the problem, a brief overview of the research framework and the overall research questions and objectives of the studies are presented. This section also features a description of the thesis' structure.

The second section is made up of four chapters, corresponding to the four research questions/objectives and containing five empirical studies: **Chapter 1**, composed by a research that identifies and compares the determinants of entrepreneurial attitudes, intentions and behaviours among Portuguese-Speaking Countries (PSC) with different levels of economic development: Portugal - an innovation driven economy, Brazil - an efficiency driven economy and Angola - a factor driven economy; **Chapter 2** includes two studies and show how HEIs' cooperation networks can be decisive for the development of teachers' skills and for the promotion of entrepreneurship, in particular in the context of developing countries; **Chapter 3**, composed by a research that uses an effectiveness perspective to show how entrepreneurship education is being implemented in those countries and identifies the main barriers to the creation of companies promoted/incubated by HEIs with entrepreneurship education in their curricula. **Chapter 4** shows what factors determine the (in)effectiveness of entrepreneurship education in HEIs, and demonstrates the influence of gender, family history, financial resources, networks and type of entrepreneurship curricula (more or less focused on business creation) in the learning outcomes of entrepreneurship education, in terms of intention / attitude / entrepreneurial behaviour (locus of control, propensity to take risks, need of achievement, tolerance to ambiguity, innovativeness, perceived behavioural control, personal attitude, entrepreneurial Intention).

The third and last section provides the final thesis considerations and puts forward the core conclusions and contributions generated by the study. A summary of the issues analysed in this thesis is provided in Figure 1.

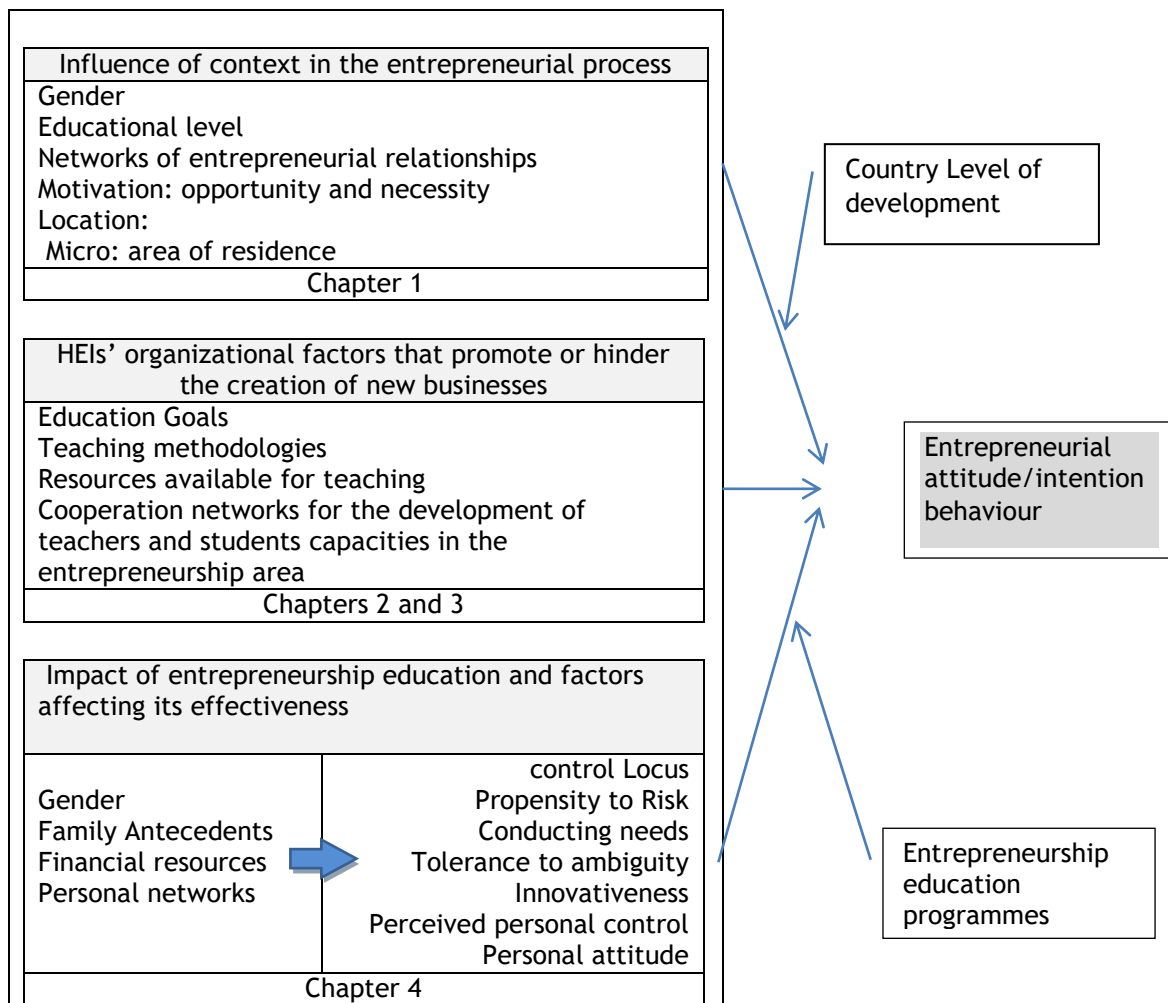


Figure 1. Doctoral Thesis model

Given the nature of the research questions, the research adopted both quantitative and qualitative methodologies (Morais, 2010). Thus, the design and the conception of this study was developed through triangulation of the different methodological (quantitative and qualitative) procedures summarized in Table 3.

Table 3: Thesis design

Chapter	Paper	Purpose and main theories	Methodology
1	<i>Determinants of entrepreneurial attitudes, intentions and behaviours in diverse geographic regions with different levels of economic development: a study with Portuguese-Speaking Countries (Angola, Brazil and Portugal).</i>	Identify and compare the determinants of entrepreneurial intentions among Portuguese Speaking Countries (PSC) with different levels of economic development <ul style="list-style-type: none"> • Schumpeter's Theory of economic development; • Institutional Economic Theory • Traits Theory • Behavioural • Networks Theory (individual) 	-Quantitative approach (using secondary data). -Descriptive statistical analysis of GEM-2010 database -Multiple linear regression. - Objective analysis
2	<i>Entrepreneurship education in the context of developing countries: study of the status and the main barriers in Mozambican Higher Education Institutions.</i>	Understand how entrepreneurship education is being implemented in these countries and to identify the main barriers to the creation of companies promoted by /incubated HEIs with entrepreneurship education in their curricula. <ul style="list-style-type: none"> • Schumpeter Theory of economic development; • Institutional Economic Theory; • Incubator Theory 	Qualitative approach based on a sample of 10 establishments of the 5 existing HEIs with entrepreneurship education before 2014. Exploratory interview with the HEIs' directors and consultation of documental sources. - Content analysis - Subjective analysis.
3	<i>Cooperation Networks for entrepreneurship education in HEIs: Strategies for Skills Development in Mozambique.</i>	Identify how HEIs' cooperation networks can be decisive for the development of teachers' skills and for the promotion of entrepreneurship in particular within the context of developing countries. <ul style="list-style-type: none"> • Networks Theory (organizations) 	Qualitative approach based on a sample of 10 establishments of the 5 existing HEIs with entrepreneurship education before 2014. Exploratory interview with the HEIs directors and consultation of documental sources. - Content analysis. - Subjective analysis.
	<i>Promoting Entrepreneurship Education through University Networks: A case study in Mozambique.</i>	Identify how the university cooperation networks can be decisive for the development of teachers' skills and for the promotion of entrepreneurship in particular within the context of developing countries. <ul style="list-style-type: none"> • Networks Theory (organizations) 	Case study: -Qualitative approach based on a case study -Participant observation of one of the researchers; Exploratory interview with the director (network manager); Documental Sources. - Content analysis; - Subjective analysis
4	<i>Entrepreneurship education in Higher Education Institutions (HEIs) in Mozambique: Impact on students and factors affecting its effectiveness</i>	Understand the impact of entrepreneurship education and the influence of gender, family history, financial resources, networks in the learning outcomes of entrepreneurship education <ul style="list-style-type: none"> • Theory of personal traits (Traits approach); • Behavioural Theory; • Networks Theory (individual) 	Quantitative approach (using primary data). - Questionnaires: (n=572) students attending 2 nd , 3 rd and 4 th years of higher education with an entrepreneurship curricula, and students who did not attended (n = 149) Statistical analysis, including multiple linear regressions, ANOVA, t-test; qui-square test. - Objective analysis

The five empirical researches in this thesis have all been submitted to conferences and/or submitted to be published, in accordance with the content of the works and the core interests of the Book editor, the International conference or Journal as shown in Table 4.

Table 4: Thesis empirical chapter book and papers

Chapter book/ Paper	Reference	Status
Paper	Libombo, D. and Dinis, A. (2015). <i>Determinants of entrepreneurial attitudes, intentions and behaviours in diverse geographic regions with different levels of economic development: a study with Portuguese-Speaking Countries (Angola, Brazil and Portugal).</i>	- Presented in the International Conference of the International Council for Small Businesses ICBS 2015 - Undergoing peer review for publication in a scientific journal
Paper	Libombo, D. and Dinis, A. (2015). <i>Entrepreneurship education in the context of developing countries: study of the status and the main barriers in Mozambican Higher Education Institutions</i>	- Presented in the international Conference INTED 2015 - <i>9th International Technology, Education and Development Conference</i> - Published in <i>Journal of Developmental Entrepreneurship</i> , 20(3), 2015. [26 pages] 1550020 DOI: 10.1142/S108494671550020X
Chapter book	Libombo, D., Dinis, A. and Franco, M. (2015), <i>Promoting Entrepreneurship Education through University Networks: A case study in Mozambique.</i>	Published In book: " <i>Entrepreneurship Education and Training</i> ", book edited by Jose C. Sanchez-Garcia, ISBN 978-953-51-2029-2, Published: March 25, 2015 under CC BY 3.0 license. Available on line: http://www.intechopen.com/books/entrepreneurship-education-and-training DOI: 10,5772 / 59344
Paper	Libombo, D. and Dinis, A. (2015). <i>Cooperation Networks for entrepreneurship education in HEIs: Strategies for Skills Development in Mozambique.</i>	- Presented in International Conference ECIE 2015, - Undergoing peer reviews for publication in a scientific journal
Paper	Libombo, D. and Dinis, A. (2015). <i>Determinants of the effectiveness of entrepreneurship education in Higher Educations Institutions (HEI) in a developing country - Mozambique.</i>	- Accepted for presentation in international Conference ICERI 2015 - <i>8th International Conference of Education, Research and Innovation</i> , November, Seville. - Undergoing peer reviews for publication in a scientific journal

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Part 2

Chapter 1 -Determinants of entrepreneurial attitudes, intentions and behaviours in diverse geographic regions with different levels of economic development: A study with Portuguese-Speaking Countries (Angola, Brazil and Portugal)

Determinants of entrepreneurial attitudes, intentions and behaviours in diverse geographic regions with different levels of economic development

Abstract

This paper aims to identify and compare the determinants of entrepreneurial Attitudes, Intentions and Behaviours (AIB) among Portuguese-Speaking Countries (PSC) with different levels of economic development. A descriptive statistical analysis was developed based on Global Entrepreneurship Monitor (GEM) 2010. Analysis includes the creation of a quantitative index for entrepreneurial AIB (Entrepreneurial Index) and multiple linear regressions in order to assess which factors affect the entrepreneurial index. It was concluded that gender, education, entrepreneurial networks, the perception of opportunities in the place of residence and motivation, are determinants of entrepreneurial AIB. Results also indicate that the level of development of the countries affects the weight of each factor.

Keywords: Determinants of Entrepreneurial Intention, attitudes and behaviours; Entrepreneurial Index, Portuguese Speaking Countries, Context, GEM.

1. Introduction

Increasingly, entrepreneurship is seen as a factor of economic and social development of regions and countries (Chen and Ravallion, 2008; Naudé, 2010). Thus, entrepreneurship has been receiving growing interest from business and academic communities as well as politics, particularly because of its potential positive impact on competitiveness, jobs creation, including self-employment, and wealth's creation in general, (Birch, 1981, 1987; CEC, 2003; Acs and Audretsch, 2005; Dahl and Reichstein, 2007; Reynolds and White, 1997; Hisrich, 2009; Kane, 2010; Horrel and Litan, 2010). The theme of entrepreneurial intention, has received particular attention because it is a predictor of entrepreneurial activity (Ajzen, 1991; Krueger and Carsrud, 1993; Davidsson, 1995) Entrepreneurial intention is a necessary and crucial element of entrepreneurial behaviour (Fayolle and Gailly, 2008; Turker and Selcuk, 2009), but intention to perform a particular behaviour depends on the personal attitudes to face this behaviour (Ajzen, 2008; Fayolle and Gailly, 2008; Turker and Selcuk, 2009). Several studies have attempted to relate personal characteristics, behaviours and attitudes with entrepreneurial intention (e.g Bird, 1988, Matthews and Moser, 1995; Liñán et al., 2011; Fayolle and Gailly, 2015). However this studies are in great extend carried out with samples of students and/or based in one single country. Comparative studies with data from an adult population are scarce. This study fulfills this gap. Based in GEM 2010 Adult Population Survey (APS) Global Individual Level Data, it focuses on the identification and comparison of the

determinants of entrepreneurial intentions among Portuguese-Speaking Countries (PSC) with different levels of economic development: Portugal - an innovation driven economy, Brazil - an efficiency driven economy and Angola - a factor driven economy. Using the common language and history as a control factor, the study intends to answer two questions: (i) what factors influence positively and/or negatively entrepreneurial attitudes, intentions and behaviours in these countries? and (ii) Does these factors differ according to the level of economic development of the countries?

The comparison of the three countries with different levels of economic development but with common language and history makes this comparison more reliable. The study includes a theoretical revision on entrepreneurial intention and factors affecting it, from where hypotheses are derived. Then, the methodology section describes the sample and variables used, as well as the statistical methods employed. Section fourth is dedicated to analysis and discussion of the results. Finally, in conclusions, implications of the study, limitations and lines for further research are presented.

2. Literature Review and hypotheses

The entrepreneurship concept still does not have a single or consensual definition (Blanker et al., 2006; Gibb, 2005; Licht and Siegel,2006) because it vary according to the purposes, objectives, questions asked, the unit of analysis, theoretical and methodological perspective on the phenomenon (Low and MacMillan, 1988).

However, frequently, the entrepreneurship concept is associated with the individual who buys, transforms and sells raw materials, identifying a business opportunity and assuming the risks it involves (Cantillon,1755); the one who manages the production work, is the center of many connections; generates income based on what others know and do not know, and all accidental advantages of production (Say,1803); the entrepreneur has the ability to do new things, or (innovate) do things that had already been made in a new way (Schumpeter,1937). There are several authors who associate special characteristics: of the entrepreneur: persistence; commitment; enhance the quality; take risks; set goals; search for information and opportunities; planning and systematic monitoring; persuasion and network of contacts; independence and self-confidence (McClelland,1961) and create something new, different, change or transform values (Drucker,1986).

Traditionally, literature about entrepreneurship is centred in the phenomena of new business creation either as a new independent company or within an existing company (Veciana: 1999, 2008, Davidsson,1995); by an individual or a team of individuals. This approach is the one that fits the purpose of this study, and thus it is assumed the entrepreneurship concept is related with attitudes, intentions and behaviours related with the creation of a new business or

ventures which may involve self-employment.

Since the approach of intentions is central to the study of human behaviour (Tubbs and Ekeberg, 1991), in some instances, entrepreneurship literature considers that the idea of creating a company is preceded by intention, which, in turn, can be planned but not always coincides with the entrepreneurial behaviour. Thus, analysis of entrepreneurial intention can be a good predictor of the entrepreneurial behaviour of an individual (Ajzen, 1991; Krueger and Carsrud, 1993, Davidsson, 1995). Entrepreneurial intention is a necessary and crucial element of entrepreneurial behaviour (Fayolle and Gailly, 2008; Turker and Selcuk, 2009), but intention to perform a particular behaviour depends on the personal attitudes to face this behaviour (Ajzen, 2008; Fayolle and Gailly, 2008; Turker and Selcuk, 2009).

The approach of entrepreneurial intention has been supported by several models described by Guerrero et al (2008). These authors identify six main models developed in this field during the eighties and nineties and empirically tested since then:

The Entrepreneurial Event Model (Shapero, 1982), that considers the business creation as an event that can be explained with the interaction between initiatives, abilities, management, relative autonomy and risk. According to this model, the decision to start a new venture depends on three elements: (a) perception of the desirability, (b) the propensity to act, and (c) the perception of feasibility,

The Theory of Planned Behaviour (Ajzen, 1985,1987,1991) which considers that intentions are determined by attitudes and these in turn are affected by individual and contextual variables (indirect predictors of intent). According to this theory intentions to perform behaviours can be predicted with high accuracy from attitudes toward the behaviour, subjective norms, and perceived behavioural control; and these intentions, together with perceptions of behavioural control, in turn, influence behaviour (Ajzen, 1991);

The Entrepreneurial Attitude Orientation model (Robison et al., 1991) which explains the attitude prediction through four different sub-scales (achievement, self-esteem, personal control and innovation) and three types of reactions (affective, cognitive or conative);

The Intentional Basic Model (Krueger and Carsrud, 1993), that examined the relationship between attitudes and entrepreneurial intentions using a scale to “permit greater flexibility in the analysis of exogenous influences, attitudes and intentions” (Guerrero et al., 2008:37). According to this model, start a new business is an intentional process influenced by attitudes and behaviours;

The Entrepreneurial Potential Model (Krueger and Brazeal, 1994) based in on the previous models of Shapero (1982) and Ajzen (1991) and

Davidsson Model (Davidsson, 1995), which contains elements similar to *perceived self-efficacy* included in previous approaches developed by Krueger and Carsrud (1993) and Krueger and Brazeal (1994).

As these models and other contributors for entrepreneurship literature (for example Bird, 1988) stress, there is a set of factors affecting entrepreneurial intention and behaviours, both in the individual and contextual domain. The individual domain factors include demographic data, personal characteristics, psychological characteristics, individual knowledge and skills, networks and social ties. Contextual domain factors, includes environmental support, environmental influences and organizational factors. Also, literature makes evident intention is related with the attitudes, more concretely concerning the perceived desirability and feasibility (Gatewood, Shaver, and Gartner, 1995).

For the purposes of this study we will focus on that factors available in the Global Entrepreneurship Monitor, more specifically in GEM 2010 Database - APS Global Individual Level, namely, gender, education level, motivation, entrepreneurial networks and Location.

Gender: Entrepreneurship literature considers that there are differences in psychological and/or contextual characteristics between men and women, who can affect the ability of individuals to create companies (Rubio et al., 1999; Linán and Chen, 2009; Brenner, et al. 1991). Statistically men have a greater propensity for business creation (Wit and Winden, 1990; Peñaloza et al. 2008; Brenner, et al., 1991). Therefore, it is considered that the creation of companies is related to gender. Thus, the following hypothesis ensues:

H1 - Entrepreneurial attitudes, intentions and behaviours are affected by gender of the individual with men presenting more attitudes, intentions and behaviours than women.

Educational Level: Several authors consider that the level of education can influence the entrepreneurial capacity/intention (Wilson et al., 2007; Oosterbeek et al., 2010; Olomi and Sinyamule, 2009; Souitaris et al., 2007) individuals. Although there is no unanimity in the literature on the relationship level of education and entrepreneurship (Fayolle and Gailly, 2008, 2013), this study considers that there is a positive relationship between the level of education and entrepreneurial intention and behaviours, and proposes the following hypothesis.

H2 - Entrepreneurial attitudes, intentions and behaviours are positively influenced by the level of education of the individuals.

Networks of entrepreneurial relationships: Literature is plenty of studies stating that there is a positive relationship between certain variables concerning the individual's relationships (personal networks) and entrepreneurial behaviour (Autio et al., 2001;

Johannisson, 1988; Johannisson and Nilsson,1989; Shane, 2004; Liñan and Santos, 2007; Gaspar,2008; Liñán and Chen, 2009; Liñán and Cohard, 2010; Startfeld, 2010), because the entrepreneur does not work alone, relate to other people and takes the most out of their personal contacts and knowledge. Thus, several authors assume that individuals who personally know some enterprising people whether, family member, friend, boss, etc., will have a higher propensity to become entrepreneurs. Thus, the following hypothesis is proposed:

H3 - Entrepreneurial attitudes, intentions and behaviours are positively influenced by the presence of entrepreneurs in the personal networks of the individuals.

Motivation: Several studies have examined motivation to become an entrepreneur. Some highlighted psychological reasons (personality), while others pointed sociological (constraints, incentives) ones. The former pertain to personal principles and beliefs that lead people to create and manage their own businesses; The latter instead, encompass community codes, morals, rules, and norms that encourage the creation of business (Álvarez Herranz A, Valencia de Lara P, 2011). Reflecting these different points of views, a key point of debate emerges concerning the different types of motivator factors. Several authors classify motivations using the terms “pulled”, “pushed”, intrinsic, extrinsic motivations (for example Choukir and Baccour Hentati, 2013). Other authors main motivations that drives entrepreneurial intentions/ and behaviours entrepreneurial are related to the opportunities and entrepreneurial needs (Shane and Venkataraman, 2000; York and Venkataraman, 2010). GEM studies make popular the distinction between the motivations related with opportunities and necessity. Business opportunities are often driven by knowledge, skills, individual skills, while the entrepreneurial needs are often related to the need for independence, personal development and social approval. In this sense entrepreneurship by opportunity arises for the opportunity that the individual had to start a business, and, entrepreneurship by necessity arises the need that the individual satisfy certain needs or make a living (Shane and Venkataraman , 2000; Shane, 2004; York and Venkataraman, 2010; Álvarez Herranz A, Valencia de Lara P, 2011).

In spite of the fact that, opportunity relates closely to the individual entrepreneur’s characteristics, like perceptive skills and common sense, relevant experience that enables them to detect opportunities where other people cannot (Kirzner, 1995; Craig and Lindsay, 2001; Ardichvili et al., 2003; Shane, 2004; Carolis and Saporito, 2006; Alsaaty, 2007), GEM reports persistently indicate positive relationships between the per capita GDP or the level of economic development of a given country and the relevance of opportunity vs necessity (Acs et al. 2005; Singer et al., 2015). In fact, these reports show that low per capita income countries tend to contain a significantly higher proportion of businesses that start out of need.

From the above, emerges the following hypothesis:

H4. Entrepreneurial attitudes, intentions and behaviours are affected by a combination of necessity and opportunity motivations, however the weight of necessity motivation is higher in countries with lower levels of economic development.

Spatial context/location: From the discussion above the opportunity driver clearly depends on the environment, such that it must offer an entrepreneur a chance to start a new business. The location of the individual (for example in country, region or organisation with entrepreneurial culture) can positively influence entrepreneurial intention and contributes to creating a successful company (Hisrich, 2009; Dahl and Reichstein, 2007). The importance of context was highlighted by Welter (2011). According to this author, context simultaneously provides individuals with entrepreneurial opportunities and sets boundaries for their actions, That is, individuals may experience it as asset and liability. Furthermore, context is not only multi-faceted, but it also cuts across levels of analysis. The higher level of analysis (the political and economic system) interacts with the phenomenon on lower level (opportunities identified by the entrepreneur) and results in a context-specific outcome. Thus, this study proposes to analyse two levels of the context: the higher level of analysis (the country) and the lower level (perception of opportunities in the area where the individual lives), resulting in the following hypotheses:

H5: The perception of opportunities in the area of residence influence positively entrepreneurial attitudes, intentions and behaviours.

H6a: Entrepreneurial attitudes, intentions and behaviours differ between countries with different levels of development.

H6b: The importance of the determinants of entrepreneurial attitudes, intentions and behaviours differ between countries with different levels of development.

Presented the theoretical framework and research hypotheses, the study proposes the conceptual model of determining factors of entrepreneurial intentions and behaviours shown in Figure 1.

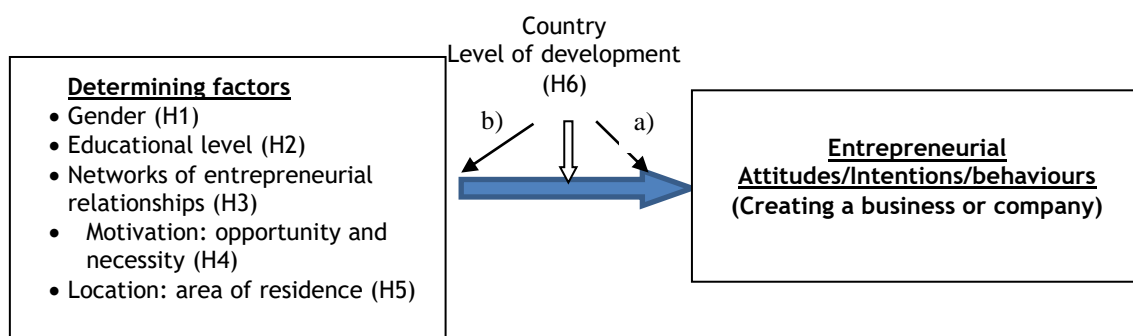


Figure 1: Conceptual model.

3. Methodology and data

The study is based on Global Entrepreneurship Monitor (GEM) 2010 - Adult Population Survey (APS), Global Individual Level Data of three countries - Brazil, Angola and Portugal- countries with a common language and, in part, a common history - they greatly vary in their levels of economic development. In GEM terminology Portugal is an innovation driven economy, Brazil an efficiency driven economy and Angola a factor driven economy. The differences in their level of development are also evident in the following table (Table 1), where some social and economic indicators concerning each country in 2010 are presented (when possible):

Table 1 - Social and Economic indicators about Portugal, Brazil and Angola

	Portugal	Brazil	Angola
Population Growth (2010)	0.05	0.88	3.23
Poverty headcount ratio at \$1.25 a day (PPP) (% of population)- 2008	n/a	7.18	43.37
GDP growth (annual %) - 2010	1.90	7.57	3.41
GDP per capita, PPP (current international \$) -2010	26 924	14 363	6 905
Unemployment, total (% of total labour force) (modelled ILO estimate) -2010	10.8	7.9	6.9
Unemployment, youth total (% of total labour force ages 15-24) (modelled ILO estimate) - 2010	22.3	17.2	10.8

Source: Extract from World Bank, *World Development Indicators*, available in <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>

Using the GEM-2010 manual, and the statistical data available in the Global Entrepreneurship Monitor / GEM 2010 Data base - APS Global Individual Level, several variables were selected in order to address the dimensions of the research model.

As independent variables (determining factors), four categories of variables were selected:

- *Demographic variables*: gender and educational level;
- *Entrepreneurial Network*: “Personally knows someone who started a firm in the past two years”;
- *Entrepreneurial Motivation*: “Opportunity-driven early-stage entrepreneur” and “Necessity-driven early-stage entrepreneur”;
- *Location*: Country and “Perception of good opportunities to start a business in the area where lives in the next six months”.

As dependent variables, reflecting the entrepreneurial Attitude/Intentions/Behaviours construct, the following variables were selected:

- *Entrepreneurial attitudes*, defined as the positive or negative evolution of entrepreneurial skills/capacities or career, measured by the following variables: “Perceives to have the knowledge, skills and experience necessary to start a new business”; “Fear of failure will not prevent from starting a new business”; “Perception that most people think that starting a new business is a desirable career choice” and “Perception that successful entrepreneurs have a high status in their country”.
- *Entrepreneurial Intentions*, defined as the purpose or expectations to become an entrepreneur, represented by the following variables: “Expectations of starting a new business in the next three years” and “Sees good opportunities to start a new business in the next 6 months”.
- *Entrepreneurial Behaviours*, defined as actions taken to start a new business or venture, measured by the following variables: “Be trying to start a new business, including any self-employment or selling any goods or services; “Be trying to start a new business or a new venture for the employer as part of the normal work”; “Be nascent entrepreneur or owner manager of a new business”; “In the last 12 months to do something to start a new business”; “Be informal investor in the last three years”.

All these variables, except, *country* and *education*, are binary variables, as described in table 1A in appendix.

Given the nominal qualitative indicators of entrepreneurial Attitudes/Intentions/Behaviours present in the database used, factor analysis to reduce the original variables on a small number of latent factors is not applicable. So, to get a single measurement in order to quantify the Attitudes/Intentions/Behaviours of respondents, we opted for the creation of an index that results from the sum of the responses of respondents to the set of variables described in Table 3. Thus, the analysis/statistical treatment include the creation of a quantitative index for entrepreneurial attitudes, intention and behaviours (Entrepreneurial Index) and multiple linear regressions in order to asses which factors affect the entrepreneurial index. Other complementary statistic were performed in order to assess the reliability of the analysis, namely KR-20 test (internal consistency of the index); Kolmogorov-Smirnov test (normality of distribution), Kruskal-Wallis and multiple comparison of means (to compare differences between countries); ANOVA and t-student tests in order to assess the reliability of the regression models and analysis of the residuals, to test the assumptions of the regression. Data was analysed using SPSS (Statistical Package for the Social Sciences).

4. Results and discussion

Characterization of the sample

The study refers to a sample of 5, 977 individuals, 51.9% of males and 48.1% of females aged between 18 and 64 years, with a mean age of approximately 36 years with a standard deviation associated 13 years. With regard to the educational level is found that about 49% of all respondents did not complete secondary education, 35% had completed secondary education and only 15.8% had post-secondary education (see table 2A in appendix). The distribution of individuals by nationality is similar: around 2,000 per country. The level of education, as well the age of individuals, tends to be higher in Portugal and lower in Angola.

Entrepreneurial Index

In order to develop the Entrepreneurial Index (EI), descriptive statistics associated with the independent variables (absolute frequencies concerning, central location and measures of variability, were performed and presented in table 3A in appendix. Due to the low number of responses in variable *Suact*, this variable was excluded from the following analysis, remaining 10 variables.

With this variables it was performed an internal consistency analysis through KR-20 coefficient, an indicator developed by Kuder and Richardson in 1937 (Vallejo, 2007), used to measure the degree of reliability of dichotomous responses. Table 2 presents the KR-20 coefficient. The values of this coefficient are similar to Cronbach's alpha coefficient ranging between 0 and 1 considering: very good - values greater than 0.9; good - alpha values between 0.7 and 0.8; reasonable - for alpha values between 0.6 and 0.7; and weak or inadmissible values less than 0.6. The value obtained for the set of 10 questions was 0.657 indicating a reasonable internal consistency.

However removing the variables *nofearfail*, *nbgoodc*, *nbstatyy* and *busangyy*, improves the reliability of the scale (0.722), yielding an internal consistency value above 0.70, that is, a good internal consistency.

Table 2. Reliability Statistics of the Entrepreneurial Index

KR-20	N de Items
0.657	10
0.722	6

The EI, composed by six items presented in table 3, is the result of the sum of the answer to each item. The resulting score is a quantitative variable assuming values between 0 and 6. Table 4 presents the results of this score as well as some descriptive statistics associated to this variable. This index presents an average value of 1.90, with a standard deviation of 1.685 associated to the 4 458 valid cases. The Kolmogorov-Smirnov (K-S) test (Maroco, 2011; Pestana and Gageiro, 2005) was applied to test the normality of the distribution. Since the hypothesis of normality of the distribution was rejected (significance of K-S was 0.000), a non-parametric test - Kruskal-Wallis - was applied, to compare the entrepreneurial scores between the three countries. This test reveals significant differences in entrepreneurial scores between at least two countries (P=0.000).

Table 3 - Composition of the Entrepreneurial Index

Variables	
Attitudes	
“Perceives to have the knowledge, skills and experience necessary to start a new business”	
Intentions	
“Expectations of starting a new business in the next three years“	
“Sees good opportunities to start a new business in the next 6 months “	
Behaviours	
“Be trying to start a new business, including any self-employment or selling any goods or services”	
“Be trying to start a new business or a new venture for the employer as part of the normal work “	
“Be a nascent entrepreneur or owner manager of a new business”	

Table 4. Entrepreneurial Index (Attitudes, Intentions and behaviours): descriptive statistics and normality tests

		Total	Angola	Brazil	Portugal	p-value
N	Valid	4458	1248	1884	1326	
	Missing values	1519	731	112	676	
Mean		1.90	3.34	1.61	0.97	0,000*
Mode		1	5	1	1	
Standard deviation		1.69	1.86	1.27	1.03	
Minimum		0	0	0	0	
Maximum		6	6	5	6	
Percentiles	25	1	2	1	0	
	50	2	3	1	1	
	75	3	5	2	1	
Kolmogorov-Smirnov Test						
					Statistic	0,200
					gl	4458
					sig	0,000

The multiple comparison of means, illustrated in the Error-bar (figure 2), allows to conclude with 95% of confidence that there is a higher entrepreneurial score in Angola and a lower in Portugal.

These results support hypothesis that *entrepreneurial attitudes, intentions and behaviours differ between countries with different levels of development (H6a)* and show that low income countries present higher entrepreneurial scores.

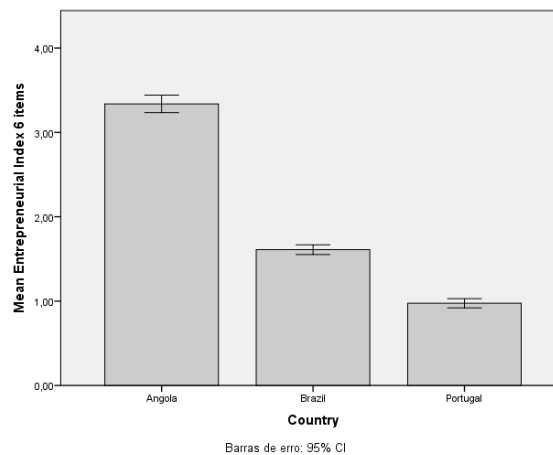


Figure 2. Entrepreneurial Index: mean scores by country

Determinants of Entrepreneurial Attitudes, Intentions and Behaviours

In order to understand which factors affect the entrepreneurial intention in each country multiple linear regressions were performed, considering the six item EI as the dependent variable. ANOVA tests showed that in the three regressions, there is a statistical significance at .000 level, suggesting a linear relationship among the variables.

This model is highly significant explaining 62%, 67% and 56%, in Brazil, Angola and Portugal, respectively, of the variability of the entrepreneurial scores (see table 5). Some tests were also performed in order to validate the assumptions that fall on the error component of the model (residual analysis). The Durbin-Watson statistics allows assuming the independence of the error (last column table 5). This statistic allows to evaluate the error independence assumption or the absence of autocorrelation. According Maroco (2007: 587) there is autocorrelation between residues when the values of this statistic move away much of 2. Values obtained for this statistic were 1.714, 1.855 and 2.063 for the three models estimated. Since these values are not very different than 2, it is concluded that there is no autocorrelation between the residues.

To assess the assumption of normality of the error, P-plots were draw for each regression (see

figures 1 to 3A in appendix). In the figure most of the points are more or less on the main diagonal, Thus it can be concluded that the residues have at least approximately normal distribution confirming the assumption of normal distribution of the errors.

Table 5: Summary of Regression Models by Country (adjusted model)

Country	R ² _a	Standard error of estimate	Durbin-Watson
Brazil	0.619	0.786	1.714
Angola	0.665	1.075	1.855
Portugal	0.561	1.688	2.063

Finally, it was measured the cook distance to assess the influence of atypical observations. It considered the detection of influential observations when this distance is greater than 1. Cook distance, reveal the outliers did not affect the model (see table 6). These results show that values of Cook distance vary between 0.000 and 0.083, less than 1, and therefore do not diagnose the influence of some outlier in the estimated regression model.

Table 6. Error Statistics: Cook distance

Cook distance	Minimum	Maximum	Average	Standard deviation	N
Brazil	0,000	0,010	0,001	0,001	1872
Angola	0,000	0,010	0,001	0,001	1211
Portugal	0,000	0,083	0,001	0,006	1285

Results in table 7 show the values of the standardized coefficients of the regression in each country, as well as the level of significance for each variable. In order to test the existence of multicollinearity among the dependent variables, the VIF test was also performed (see last column of table 7). Since all VIF < 3, it is possible to conclude about the inexistence of multicollinearity.

In face of the results of the regression obtained (table 7), it can be concluded that in these PSC all the select independent variables are significant.

Entrepreneurial attitudes, intentions and behaviours are, on average, higher for **male** than for female respondents. This result is aligned with other studies, as those presented Linān and Chen (2009) and Wilson et.al. (2007), and supports the hypothesis “*Entrepreneurial attitudes, intentions and behaviours are affected by gender of the individual with men presenting more attitudes, intentions and behaviours than women (H1) .*”

Education appears also as a factor that contributes to explain entrepreneurial attitudes,

intentions and behaviours, with higher levels of education affecting positively higher levels of the entrepreneurial index. This relationship is consistent with Bakotic and Kruzic, (2010); Fayolle et al., (2006) and supports the hypothesis that *“Entrepreneurial attitudes, intentions and behaviours are positively influenced by the level of education of the individuals (H2)”*.

Entrepreneurial networks, is also a determinant of entrepreneurial attitudes, intentions and behaviours as stated by several other authors (Autio et al., 2001; Johannisson, 1988; Startfeld, 2010; Linan et al., 2009; Gaspar, 2008; Liñán and Cohard, 2010), supporting the hypothesis *“Entrepreneurial attitudes, intentions and behaviours are positively influenced by the presence of entrepreneurs in the personal networks of the individuals (H3)”*. ();

Besides the above, *motivational* (both by necessity and opportunity) factors and *perception opportunity in the area residence* are the most relevant determinants of entrepreneurial attitudes, intentions and behaviours.

Concerning motivational factors, the weight of “opportunity motivation” is higher than “necessity motivation” in all the analysed countries; however necessity motivation is higher in Angola, followed by Brazil. These results allow confirming that *“Entrepreneurial attitudes, intentions and behaviours are affected by a combination of necessity and opportunity motivations; however the weight of necessity motivation is higher in countries with lower levels of economic development (H4)”*. This is consistent with other results in literature (Michelacci and Silva 2007; Krueger and Brazeal 1994) that state that motivations (opportunity and necessity) are determinants of entrepreneurial attitudes, intentions and behaviours and with GEM studies that indicate a positive positive relationships between the per capita income of a given country and the relevance of opportunity (Acs et al., 2005; Singer et al., 2015), or, in other words low per capita income countries tend to contain a significantly higher proportion of businesses motivated by necessity..

The perception of opportunity in the area of residence is the factor that presents the higher score in all the analysed countries, which, according to the assumption of this study, represents the influence of location and supports the hypothesis that *“The perception of opportunities in the area of residence influence positively entrepreneurial attitudes, intentions and behaviours (H5a)”*. This result is consistent with authors like Michelacci and Silva (2007), Stam (2007) Hisrish, (2009); Dahl and Reichstein, (2007), Sieger et al. (2014), that considers that residence area is a factor that affects the entrepreneurial intention.

Furthermore is worth to note the *opportunity* element - reflected both in “motivation by opportunity” and “perception of opportunity”, which constitute the variables with higher scores in all the analysed countries - seems to be a central aspect in the entrepreneurial process, as stated by Hansen et al., 2011; Jamali, 2009.

Comparing the three countries, it is possible to state that the highest scores for both types of motivation are for Angola and lowest scores for Portugal. This can be explained by two angles: (i) from the need of the individual and (ii) from the market potential. From the perspective of the individual, in developing countries there is a lack of structured employment¹ and thus individuals need to create their own sources of income (self-employment) which represents a necessity motivation. On the other hand, from the market side, in developing countries with high rates of population and GDP growths, there is still many market needs to explore, which can result in an opportunity motivation to become an entrepreneur. This interpretation is consistent with Sieger et al.(2014) results who state that despite a few exceptions, the share of entrepreneurial intentions is higher in developing countries, when compared with developed and industrialized countries.

Furthermore, Portugal, comparing with the other two countries, but especially with Brazil, presents the higher score concerning the influence of gender and education. This means that to be a male and to have higher level of education influence more entrepreneurial attitudes, intentions and behaviours in Portugal than in the other two countries. This can be related with the type of entrepreneurship more prevalent in each country: in more structured/formal entrepreneurship, as is the case of Portugal compared with the other two countries, the level of education seems to be more relevant.

Angola, in turn, presents the lowest value relative to the influence of entrepreneurial networks. These results support the hypothesis that *“the importance of the determinants of entrepreneurial attitudes, intentions and behaviours differ between countries with different levels of development (H5c)*, supporting also the idea that “context matters” in what concerns entrepreneurial matters (Welter, 2011). However the specific results of this analysis are striking. In fact it would be expected that gender issues and entrepreneurial networks would be more relevant in a developing country, as stated by authors like Goltz et al., 2015; Yousafzai et al., 2015 (concerning gender) and Su et al.,2015; Nowiński and Rialp, 2015; Semrau et al., 2012; Semrau, et al.,2012 (concerning entrepreneurial networks), however these results are contrary to this expectation and thus it deserves further research.

¹ In spite of the fact that in the official numbers presented in table 1 shows Portugal with the highest rate of unemployment two notes must be done: First, in developing countries there is a greater probability that a large segment of the population is not included in the official statistics, since the statistical collection system is more incipient. Second, the high level of unemployment in Portugal is a conjectural situation, consequence of the crises that affects the European countries in this period. Traditionally the rates on unemployment were lower in Portugal. For instance, the rate of unemployment in Portugal in 2000, according to the same source in table 1, was 3,9%, compared to 6,9% in Angola and 9,5 % in Brazil.

Table 7: Regression results

Country	Independent Variables	Coefficients B (SD)	Standardized Coefficients B	T- test Sig.	Collinearity Statistics	
					Tolerance	VIF
Brazil	Constant	0.480(0.036)	-	0.000	-	-
	Gender	0.124(0.037)	0.048	0.001	0.975	1.026
	Education	0.062(0.027)	0.033	0.023	0.955	1.047
	Entrepreneurial network	0.358(0.038)	0.139	0.000	0.912	1.096
	Opportunity motivation	1.625(0.058)	0.411	0.000	0.956	1.047
	Necessity motivation	1.554(0.081)	0.275	0.000	0.978	1.023
	Opportunity in localization	1.263(0.037)	0.495	0.000	0.942	1.061
Angola	Constant	0.925(0.078)	-	0.000	-	-
	Gender	0.205(0.063)	0.054	0.001	0.979	1.021
	Education	0.173(0.052)	0.057	0.001	0.936	1.068
	Entrepreneurial network	0.236(0.072)	0.057	0.001	0.915	1.093
	Opportunity motivation	2.182(0.078)	0.490	0.000	0.909	1.100
	Necessity motivation	2.360(0.100)	0.405	0.000	0.948	1.055
	Opportunity in localization	1.892(0.069)	0.474	0.000	0.933	1.072
Portugal	Constant	0.318(0.036)	-	0.000	-	-
	Gender	0.218(0.039)	0.105	0.000	0.951	1.051
	Education	0.103(0.024)	0.083	0.000	0.960	1.042
	Entrepreneurial network	0.340(0.043)	0.155	0.000	0.907	1.103
	Opportunity motivation	1.912(0.108)	0.332	0.000	0.975	1.026
	Necessity motivation	2.249(0.173)	0.241	0.000	0.999	1.001
	Opportunity in localization	1.265(0.050)	0.489	0.000	0.938	1.066

Legend: B=Beta; SD=Standard Deviation

5. Concluding remarks

This study discusses the determinants of entrepreneurial intentions, attitudes and behaviours and its importance in different contexts. Using data from the Global Entrepreneurship Monitor (GEM) 2010 - Adult Population Survey (APS), Global Individual Level Data - from three countries with different levels of economic development but with a common history and language, a quantitative index for entrepreneurial attitudes, intention and behaviours (Entrepreneurial Index) was created. Then, multiple linear regressions were performed in order to assess which factors affect this entrepreneurial index.

Results indicate that (i) gender, (ii) education, (iii) entrepreneurial networks, (iv) opportunity and necessity motivation and (v) perception of opportunities in the area of residence, are positive determinants of entrepreneurial attitudes, intentions and behaviours in the Portuguese Speaking Countries (PSC) under analysis.

More specifically, results show that men, individuals with higher levels of education and with entrepreneurial personal networks tend to present higher entrepreneurial scores. Furthermore, the empirical study makes evident the importance of perception of opportunities for the formation of entrepreneurial attitudes intentions and behaviours. Results also show that the level of economic development affects not only entrepreneurial attitudes, intentions and behaviours but also the weigh/importance of its determinants.

From the theoretical side, this study confirms the importance of gender studies applied to entrepreneurship and in different contexts. The fact that gender is more determinant in a European (developed) country than in developing countries is, somehow, surprising and deserves further research. The study also confirms the centrality of opportunity (Tumasjan and Braun, 2012). How the perception of opportunity corresponds to an objective reality or to an individual perception is a discussion that already inspired several researches, but that is beyond the purpose of this research. However since this perception reveals to be fundamental for trigger entrepreneurial processes in all the three different economic contexts, it reinforces these concepts as a central and challenging research field in the entrepreneurship domain.

The study also highlights the importance of networks in the entrepreneurial process as already discussed by others (Johannisson and Nilsson, 1989; Liñán and Cohard, 2010; Liñán and Chen, 2009) but, more, it shows that its importance is not the same in all contexts, as already implicit in Johannisson and Montsead (1997) discussion. But, surprisingly, they seem to be more important in more developed countries. This is also a matter for further research. Furthermore, this study also reinforces the importance of “contextualizing entrepreneurship theory” as argued by Welter (2011:127). According to this author, “context is important for understanding when, how, and why entrepreneurship happens and who becomes involved” (p.127). The exploration of these issues under a contextual approach is a venue for further research.

From the practical side, this study highlights that gender issues, the promotion of entrepreneurial networks and the promotion of visibility/perception of opportunities are aspects that should be incorporated in policies that aim to increase entrepreneurship. Furthermore, it shows that there is not a single recipe for all countries concerning entrepreneurship policies since the determinants of entrepreneurship do not have the same importance in every context.

This study has some limitations. First, it only analyse the level of education. It would be interesting to analyse the impact of entrepreneurship education and if this impact differs between countries with different levels of development. Second, the study uses data from only one country in each developmental stage. As a line for further research, it is proposed to replicate the study with more countries at each stage of economic development, to understand whether the identifiable differences between countries are widespread or limited to these specific countries.

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Appendix

Table 1A- Independent and Dependent Variables

Variables	Type of scale	Values of the variable
Demographic variables		
<i>Gender</i>	Dichotomous	0- Female 1- Male
<i>Edu_r</i> = Education (three categories)	Ordinal	0- Below secondary school 1- Secondary school 2- Above secondary school
Entrepreneurial networks		
<i>Knowent</i> = Personally knows someone who started a firm in the past two years	Dichotomous	0- No 1- Yes
Motivations		
<i>Teayyopp</i> = Opportunity-driven early-stage entrepreneur	Dichotomous	0- No 1- Yes
<i>Teayynec</i> = Necessity-driven early-stage entrepreneur	Dichotomous	0- No 1- Yes
Location		
<i>Opport</i> = Perceives good opportunities to start a business in the area where you live	Dichotomous	0- No 1- Yes
<i>Country</i>	Qualitative (Nominal)	55- Brazil 244- Angola 351- Portugal
Entrepreneurial attitudes, intentions and behaviours		
Attitudes		
<i>Suskill</i> = Perceives to have the required knowledge and skills to start a business	Dichotomous	0- No 1- Yes
<i>Nofearfail</i> = Fear of failure would not prevent you from starting a business?	Dichotomous	0- No 1- Yes
<i>Nbgoodc</i> = People consider starting a business a desirable career choice	Dichotomous	0- No 1- Yes
<i>Nbstatyy</i> = In my country those successful at starting a business have a high level of status and respect	Dichotomous	0- No 1- Yes
Intentions		
<i>Futsupply</i> = Entrepreneurial intentions - expecting to start a new business in the next three years (correction)	Dichotomous	0- No 1- Yes
<i>Opportyy</i> = Perceives good opportunities to start a business	Dichotomous	0- No 1- Yes
Behaviours		
<i>Bstart</i> = Currently setting up a business, individually	Dichotomous	0- No 1- Yes
<i>Bjobst</i> = Currently setting up a business, sponsored	Dichotomous	0- No 1- Yes
<i>Teayy</i> = Involved in early-stage entrepreneurial activity	Dichotomous	0- No 1- Yes
<i>Suacts</i> = Active in the past 12 months	Dichotomous	0- No 1- Yes
<i>Busangyy</i> = Respondent is informal investor	Dichotomous	0- No 1- Yes

Note: This set of variables is available on the GEM manual.

Table 2A - Characterization of the sample: demographic data

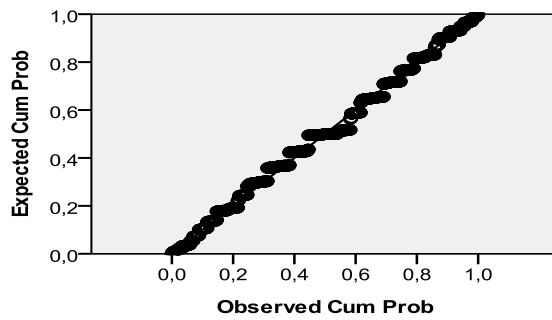
		Country			
		Brazil	Angola	Portugal	Total
Individuals	n	1996	1979	2002	5977
	%	33.4%	33.1%	33.5%	100%
Gender					
Male	n	948	1116	1040	3104
	%	47,50%	56,40%	51,90%	51.9%
Female	n	1047	863	962	2872
	%	52,50%	43,60%	48,10%	48.1%
Education					
Did not attend secondary school	n	660	380	317	1357
	%	33,10%	19,40%	15,80%	23%
Attended secondary school	n	192	827	546	1565
	%	9,60%	42,20%	27,30%	26%
Completed secondary education	n	865	639	582	2086
	%	43,40%	32,60%	29,10%	35%
Attended Post-Secondary Education	n	220	109	557	886
	%	11,00%	5,60%	27,80%	15%
Higher Education	n	54	5	0	59
	%	2,70%	0,30%	0,00%	1%
Age					
Average		37,01	30,12	40,49	
Standard deviation		13,287	10,43	12,891	
Maximum		18	18	18	
Minimum		64	64	64	

Table 3A - Frequencies of Entrepreneurial Attitudes/Intentions/Behaviours variables

Variables		Frequncies (n)	Relative frequencies (%)
<i>bstart</i> : Are you trying to start a new business, including any self-employment or selling any goods or services?	No	4733	79,8
	Yes	1195	20,2
	Total	5928	100,0
<i>bjobst</i> : Are you trying to start a new business or a new venture for your employer as part of their normal work?	No	5129	86,6
	Yes	792	13,4
	Total	5921	100,0
<i>teayy</i> : Are you nascent entrepreneur or owner manager of a new business?	No	4915	82,2
	Yes	1062	17,8
	Total	5977	100,0
<i>suact</i> : Over the past 12 months have you done something to start a new business?	No	513	39,2
	Yes	795	60,8
	Total	1308	100,0
<i>busanggy</i> : Informal investor in the last three years	No	5625	94,1
	Yes	352	5,9
	Total	5977	100,0
<i>futsuppy</i> : Expect to start a new business in the next three years?	No	3706	67,7
	Yes	1769	32,3
	Total	5475	100,0
<i>opportunity</i> : Sees good opportunities to start a new business in the next six months?	No	2747	55,1
	Yes	2235	44,9
	Total	4982	100,0
<i>nofearfail</i> : Fear of failure will not prevent you from starting a new business	No	2087	37,6
	Yes	3466	62,4
	Total	5553	100,0
<i>suskill</i> : Do you have the knowledge, skills and experience necessary to start a new business?	No	2204	39,6
	Yes	3360	60,4
	Total	5564	100,0
<i>nbgoodc</i> : In my country, most people consider that starting a new business is a desirable career option.	No	1538	28,4
	Yes	3886	71,6
	Total	5424	100,0
<i>nbstatyy</i> : In my country, successful entrepreneurs have a high status?	No	1224	22,5
	Yes	4218	77,5
	Total	5442	100,0

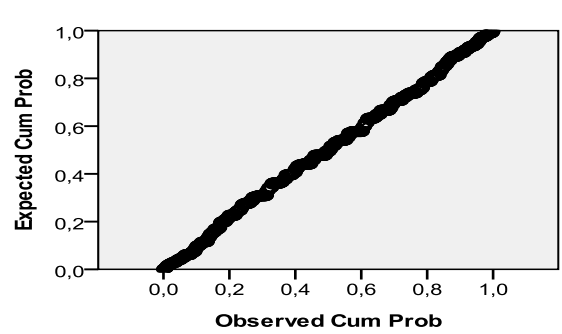
Normal P-P Plot of Regression Standardized Residual

Dependent variable: Entrepreneurial index
Country: Brazil



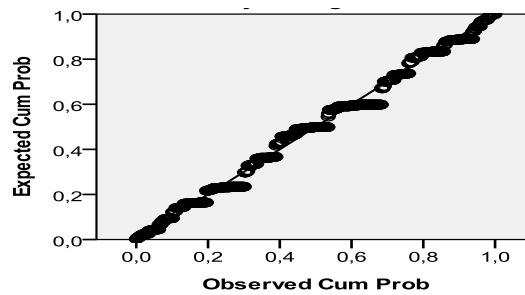
Normal P-P Plot of Regression Standardized Residual

Dependent variable: Entrepreneurial index
Country: Angola



Normal P-P Plot of Regression Standardized Residual

Dependent variable: Entrepreneurial index
Country: Portugal



Figures 3-5A. Normal Probability Plot of Errors

Chapter 2 - Entrepreneurship education in the
context of developing countries: study of the status
and the main barriers in Mozambican Higher
Education Institutions

Entrepreneurship education in the context of developing countries: study of the status and the main barriers in Mozambican Higher Education Institutions

Abstract

This study focuses on the issue of entrepreneurship education and the role of Higher Education Institutions (HEI) in the context developing countries. More specifically it aims to understand how entrepreneurship education is being implemented in Mozambique and to identify the main barriers to the creation of companies promoted by/incubated in HEI with entrepreneurship education in their curricula. The paper includes theoretical discussion and the presentation of a case study. It begins with a literature review analysing the relationship between entrepreneurship and development and entrepreneurship education in the context of developing countries followed by a discussion about entrepreneurship education provided by HEI. The empirical study is focused in Mozambique. After a contextualization of entrepreneurship education in Mozambique, Mozambican HEI with entrepreneurship education are identified and their situation and difficulties concerning the implementation of entrepreneurship education are discussed. Data collection includes documental sources and interviews with HEI representatives of a sample of ten establishments of the universe of five public and private HEI with entrepreneurship education in Mozambique. Results indicate that lack of resources, trained/qualified teachers and cooperation networks with the business community and other relevant actors are the main barriers.

Keywords: Higher education institutions; entrepreneurship education, developing countries, Mozambique.

1. Introduction

Entrepreneurship education is growing as a concern of politics and academia. There has been a large number of initiatives developed worldwide to promote a broad range of entrepreneurial activities within educational institutions. This is even truer for developing countries where entrepreneurship is frequently presented as a solution for different segments of the population and for inclusive economic growth. However, the business landscape of these countries is quite different from the context of more developed countries; it is mainly based on local markets (local entrepreneurship) with an underdeveloped regional integration and high level of informal businesses (Sautet, 2013). Furthermore, in these countries, the business and entrepreneurial environment is particularly adverse because of legal barriers,

regulations, insecurity, corruption, inadequate infrastructures and poor financial systems. Given the unfavorable conditions for entrepreneurship and the weak quality of local businesses, some governments and institutions of these countries are beginning to invest in public policies and programs to promote entrepreneurship, including several initiatives in the domain of entrepreneurship education concerning different levels of education (Bawuah *et al.*, 2006; Kaijage and Wheeler, 2013). This is also the case of Mozambique, where one of the vectors in the framework of its National Agenda to Combat Poverty (a program for poverty reduction and creation of new jobs) is the promotion of entrepreneurship through the education system with emphasis in entrepreneurship support at the level of Higher Education Institutions (HEI) including incubation of new businesses (Valá, 2009). In fact, entrepreneurship education in HEI has been considered, for both academia and political instances, as a key driver for economic growth and wealth creation because of the talents of students, graduates and researchers, and their drive to knowledge creation and innovation. This, in theory, would facilitate the birth and growth of innovative companies, i.e., innovative or systemic entrepreneurship (Petridou *et al.*, 2009; Sautet, 2013).

Despite the fact that initiatives related to entrepreneurship education are beginning to multiply in developing countries, there are few studies that describe and focus on the impact and difficulties of entrepreneurship education in these parts of the world (Bawuah *et al.*, 2006; North, 2002). This study intends to contribute to fill this gap. It focuses on the issue of entrepreneurship promotion and the role of HEI as a support instrument in the context of developing countries. More specifically, based on the Mozambican case, it aims to understand the effectiveness of this instrument, identifying the main progresses and barriers to the creation of companies promoted by/incubated in HEI with entrepreneurship education in their curricula.

The paper includes theoretical discussion and presentation of the case study. Theoretical discussion includes a literature review about the relationship between entrepreneurship and development and about entrepreneurship education in the context of developing countries; it follows with the discussion about entrepreneurship education provided by HEI. The presentation of the case begins with a contextualization of political circumstances that led to the introduction of entrepreneurship education in Mozambique, following with the presentation of some results about entrepreneurship education in Mozambican HEI. Finally, some considerations, limitations of the study and lines for further research are presented.

2. Literature Review

2.1. Entrepreneurship and development: What is the relationship in developing countries?

The concept of entrepreneurship does not have a unique or consensual definition depending on the purposes, the unit of analysis and the theoretical and methodological perspective applied to the study of entrepreneurship phenomenon (Baron and Shane, 2007). The definition of entrepreneurship can be associated with the individual entrepreneur, with the process, but also with the results in terms of new products or firms. In his book *Theory of Economic Development*, Schumpeter (1934) includes all these elements. He considers the entrepreneur the one who creates innovations that enable profit, assuming the inherent risks. Schumpeter believes that the entrepreneur is the trigger for change in the production processes and the agent economic development, and his creativity is the main endogenous force of change (development) in the economy, through a process he called “creative destruction” (Schumpeter, 1942).

This relationship between entrepreneurship and economic development inspired several subsequent works. In fact, some studies reveal that high business creation rates are a necessary condition for economic growth and that there is a statistically significant relationship between the creation of new businesses and the growth of GDP (Tang and Koveos, 2004; Wong *et al.*, 2005). Based on this, in the context of developing countries—such as the countries of sub-Saharan Africa—entrepreneurship is frequently seen as a catalyst for development, the solution for unemployment and a means to inclusive economic growth (Valá, 2012; Feliciano and Fonseca-Statler, 2008; Weimer, 2012). However, there is also evidence that the relationship between entrepreneurship and economic growth is not the same in all countries, depending on the level of per capita income of the countries (Van and Storey, 2004; Koster and Rai, 2008). Actually, GEM reports make evident that the relationship between entrepreneurship and economic development presents a “U” shape, where developing countries (countries with lower levels of GDP per capita) are located in the left wing of the “U”. In those countries, entrepreneurship has a great expression mainly because of the presence of the informal sector, which represents a higher rate of necessity entrepreneurship (Wennekers *et al.*, 2005; Sautet, 2013).

In the face of this, several authors (Giarmatino, 1991, Van and Storey, 2004; Koster and Rai, 2008, Sautet, 2013) argue that the relationship between entrepreneurship and economic development is not straight forward. Departing from Baumol’s (1990) theory of productive vs. unproductive entrepreneurship, Sautet (2013) argues that low-income countries often experience plenty of productive entrepreneurship, but with little consistent economic growth. The incidence of informal markets in the developing world means that entrepreneurs

are vigorous, discovering opportunities to seize advances from trade to improve their quotidian lives. In other words, entrepreneurship in these countries is socially productive but it does not generate a level of wealth that would eliminate mass poverty. Thus a question arises: “How can productive entrepreneurship be omnipresent and yet have such little effect?” This situation seems paradoxical and hard to explain, and it is what he calls “the puzzle of entrepreneurship”. To explain this puzzle, Sautet adopts the terms “local” vs “systemic” entrepreneurship. The term *local entrepreneurship*—defined as “socially productive entrepreneurial activity that is limited to a small number of market transactions (i.e., the exploitation of local gains from trade); does not entail a complex division of labor; does not involve a deep accumulation of capital; and primarily rests on personal and informal relations”—is used to describe what can be casually observed in many developing countries. (Sautet, 2013:392). *Systemic entrepreneurship* refers to “socially productive entrepreneurial activities that go beyond (...) the initial local level through the capture of economies of scale and scope” (Sautet, 2013:393).

Despite the fact that these categorizations are related, *local entrepreneurship* is different from GEM’s category of *necessity entrepreneurship*. According to this author, “the dominance of local entrepreneurship in developing countries could be explained mostly in terms of institutional causes” (Sautet, 2013:395) and not by individual circumstances or motivations, as in the case of necessity entrepreneurship. The fragilities of the business lands cape of sub-Saharan Africa—mainly based in local markets, with underdeveloped regional integration, and, deficient political systems (including legal and regulatory systems) (Valá,2009; Legatum Institute, 2011), low level of education and, insecurity, corruption, inadequate infrastructure and poor, financial systems (Rebecca and Benjamin,2009; Wennekers et al.2005; Okpara and Wynn,2007; Kauffmann,2005; Weimer,2012; Legatum Institute,2011; Ugwushi, 2009)—explain the high rate of businesses that do not grow much beyond the nascent stage, or, in other words, that remain informal. This kind of entrepreneurship does not seem to create knowledge that leads to growth (Saini, 2001; Acs and Varga, 2005; Sautet, 2013).

In sum, although Schumpeter has identified a well-known relationship between entrepreneurship and growth, other authors argue that it applies mostly to developed countries or at least that its application is limited in the case of the developing world. Even though most consider entrepreneurship if not as a panacea for development at least as a part of the solution (Valá, 2012; Feliciano and Fonseca-Statler, 2008; Weimer, 2012), what explains a growing interest in this topic, in the context of developing countries, from both public policies and academia (e.g Kauffman, 2005; Okpara and Wynn, 2007; Rebecca and Benjamin, 2009; Ugwushi, 2009; William, 2009; Legatum Institute, 2011)? The challenge now is to understand how *local entrepreneurship* can be converted into *systematic entrepreneurship* and, in this domain, education seems to have a central role.

2.2. Entrepreneurship education: An emerging sector in developing countries

In line with the discussion in the previous section, Kuratko (2005) states that “entrepreneurship has emerged over the last two decades as arguably the most potent economic force the world has ever experienced.” Furthermore, when Baumol was asked about what are some of the key issues in entrepreneurship that should be addresses in the future, he answered: “How does society provide the right incentives for encouragement of entrepreneurial activity, activity that contributes to economic growth and job creation, as well as improvement in the education of entrepreneurs, particularly entrepreneurs whose focus is innovation” (Griffiths *et al.*, 2012:619). This answer clearly assigns to education a central role and explains why the interest in the field of entrepreneurship education has witnessed explosive growth over the last three decades (Fiet, 2000a). In line with this, in 2012 the European Commission recognized that entrepreneurship education is a means to increased social inclusion; it can increase the number of entrepreneurs (social and commercial) and be a gateway for a greater integration of the framework for key competences for lifelong learning.

Literature reveals different approaches to the problem of entrepreneurship education, regarding the question of whether or not entrepreneurship can be taught (Fiet, 2000a; Kuratko, 2005). In fact, studies in recent decades have proven that entrepreneurship can be taught and learned (Kurato, 2005; Fayolle, 2007a; Woollard *et al.*, 2007).

According to Fayolle (2007b), entrepreneurship education consists of any pedagogical program or process of education for development of entrepreneurial attitudes and skills. Others define entrepreneurship education as the transfer of knowledge regarding how, by whom and with what effects opportunities are discovered, evaluated and exploited to create future goods and services (Fayolle and Gailly, 2008). It includes all actions to promote entrepreneurial spirit or value creation, to stimulate entrepreneurial attitudes and skills, to enhance the image of entrepreneur, to highlight the entrepreneur’s role in society to and propose new career prospects for a part or for all of the students. It also covers a range of aspects such as the promotion of entrepreneurial idea, business creation and, growth and innovation (Fayolle and Gailly, 2008). According to Alberti et al. (2004) the most frequently mentioned goals in entrepreneurship education are: to acquire germane knowledge to entrepreneurship, to acquire skills in the use of techniques in the analysis of business situations and in the synthesis of action plans to identify and stimulate entrepreneurial drive, talent and skill; To undo the risk-adverse bias of many analytical techniques; to develop empathy and support for the unique aspects of entrepreneurship; to revise attitudes towards change; to encourage new start-ups and other entrepreneurial ventures; to stimulate the “affective socialization element”. These objectives can be classified in three categories: i) awareness about

entrepreneurship (as a possible career), ii) teaching techniques and tools to handle business situations and iii) provide support for project holders (Fayolle, 2007b).

In developing countries, where employability is still a historical difficulty and where awareness about entrepreneurship and more encouragement and institutional changes are needed, the interest in entrepreneurship education is also expanding. In the last decade, several experiences and initiatives in the entrepreneurship education field have been implemented in these countries (North, 2002; Niyonkuru, 2005; Bawuah *et al.*, 2006; Kaijage *et al.*, 2013; Robb *et al.*, 2014). However, research of its effectiveness is still scarce and those existing studies are indecisive at best (Wilson *et al.*, 2007).

2.3. Entrepreneurship education in HEI: Discussions and difficulties

Considering that HEI is a basic element of knowledge creation and innovation, entrepreneurship education in HEI constitutes a key driver for economic growth, and wealth creation because it takes advantage of the talents of students, graduates and researchers to promote innovative business and systemic entrepreneurship (Petridou *et al.*, 2009). To understand the phenomenon of creation of new businesses by the HEI students, some authors have studied the link between student's perceptions and entrepreneurial intentions (Rengiah and Sentosa, 2015; Makgosa and Ongori, 2012), the prevalence of business-planning skills (Ebewo and Shambare, 2012; Parsley and Weerasinghe, 2010) and entrepreneurial support by HEI (Yaghoubi, 2010; Woollard *et al.*, 2007) as factors that influence entrepreneurial activity. Furthermore, some authors have focused on the identification of challenges and opportunities to improve entrepreneurship education in HEI.

The literature makes evident that entrepreneurship education program design should consider the following questions: Why (objectives and targets), Who (public), for What results (assessments, examinations), What (content, theories) and How (method, pedagogies) (Fayolle and Gailly, 2008). The effectiveness of the programs varies depending on the consistency and clarity of the answers to the above questions (Fayolle and Gailly, 2008). In fact, there are no standardized methods for assessing the results of entrepreneurship education programs, which is one of the great difficulties in making improvements over time (Niyonkuru, 2005). Furthermore it must be noted that although there is a strong correlation between education and the propensity to engage in entrepreneurship activities, acquiring university education does not necessarily convert an individual into an entrepreneur (Walt and Walt, 2008).

In relation to the above, it is possible to find in the literature some clues about the main difficulties in accessing the results and in obtaining results from entrepreneurship education in HEIs, namely:

1. The development of pedagogical methodology applied in HEIs needs a better understanding. The lack of descriptive details in the programs (Rocha and Bachi, 2010) and poor assessment in structural programs (Yaghoubi *et al.*, 2011) makes it impossible to reach a conclusion and thus, are considered barriers to the assessment of the effectiveness of entrepreneurship education.
2. Inappropriate syllabus, content and educational planning are also mentioned by several authors (Rahimi and Mokhber, 2010; Razavi *et al.*, 2012; Shambere, 2013; Yaghoubi *et al.*, 2011). These aspects result, in great part, from the lack of understanding of the differences between the entrepreneur and the owner-manager, which can induce a similarity in educational practices. This often results in difficulty conveying the view that bankruptcy is a learning process rather than a social stigma, resulting in difficulty in reducing risk aversion (Costa, 2013). According to the European commission (2012), the historical development of entrepreneurship education oftentimes started with small business and management education which lead, in some cases to focus almost exclusively on how to start and run a business in such a way that this type of entrepreneurship education comes at odds with the general objectives of the HEI.
3. Several authors mention inappropriate teaching methods as a difficulty in HEI entrepreneurship education, such as the use of an excessively theoretical methodology and entrepreneurship education based mainly on business plans and preparation (Audet, 2004; Mohammadi *et al.*, 2007; Abranja, 2008, Yaghoubi *et al.*, 2011; Razavi *et al.*, 2012; Shambere, 2013). According to Rocha and Bachi (2010), the frequent application of traditional teaching processes, such as lectures and exercises,—to the detriment of other methods such as recommended reading, entrepreneurs testimonials, theory applied to the reality of the participants, games, cases, popular theatre, among others, i.e., the prevalence of classes and overly theoretical resources,—does not allow a complete formation of an entrepreneur. In conditions where students are not exposed to real business scenarios, they are less likely to be motivated to choose entrepreneurship as a career path (Yaghoubi, 2010; Ebewo and Shambare, 2012; Makgosa and Ongori, 2012; Shambare (2013). In the same line, Rahimi and Mokhber (2010) identified the focus of students on their academic degrees and the lack of attention to applied skills as barriers to the effectiveness of entrepreneurship education., In 2008, the European Commission reported that the perceived lack of relevant experience and self-confidence are the reasons why graduates are not involved in entrepreneurship after graduation. Furthermore, if/when they become entrepreneurs, they face numerous challenges and difficulties when setting up their businesses due to their lack of business experience and technical know-how. According to Kiro and Carrier (2005) the traditional methods of entrepreneurship education do not contain the innovation component. Thus they do not promote entrepreneurial skills in students and inhibit the ability of teachers to take risks and take on new practices to achieve new publics and contexts (Kirby, 2006).

4. In fact, another barriers pointed out in literature regards the shortage of human resources with training in entrepreneurship, the insufficient provision of training to the teachers and weakness in the motivational skills of teachers (Rahimi and Mokhber,2010; Razavi et al.,2012; European Commission,2002,2012).
5. Lack of entrepreneurial support is also mentioned by several authors, both as an objective fact (Shambere, 2013) as well as a subjective perception. In fact, as several authors state (Yaghoubi, 2010; Ebewo and Shambare, 2012; Makgosa and Ongori, 2012; Costa, 2013), barriers perceived by graduate students in creating their own business such as the economic environment, the bureaucracy of government and the difficulties in obtaining private financing (banks and venture capital), are pointed out by graduate students as one of the biggest obstacles to setting up their own business, often for lack of information about the business creation process.

Given the above, some authors agree that learning by doing and through relationships should be promoted, including broader and more diverse teaching in content and activities, which includes, e.g., information on support and funding systems, greater proximity and contact with entrepreneurs and their realities, and beter preparation of teachers (Lima, et.,2012).

All these factors concerning individuals (students and teachers), institutions (HEI) and macro environment (political and cultural aspects) are barriers for entrepreneurship development in the higher education system. However, in the context of developing countries, where entrepreneurship is seen as an important development vector and, entrepreneurship education in HEI plays a key role to promote systemic entrepreneurship, little is known about i) how this process has been implemented, ii) the results and iii) the specific barriers faced by the HEI. This study intends to fill this gap.

3. The case of Mozambique's HEIs: The status and the main barriers in the promotion of entrepreneurship

3.1. The case of Mozambique

Mozambique became independent from Portugal in 1975 when the independence movement, FRELIMO (*Frente de Libertação de Moçambique/ Mozambique Liberation Front*) began to lead a single-party socialist regime. After 1977, Mozambique suffered a devastating civil war, opposing FRELIMO and RENAMO (*Resistencia Nacional Moçambicana/ Mozambican National Resistance*). In 1990, through a new constitution, the country introduced a multiparty democracy and recognized the role of market forces in efficiently allocating resources. The civil war ended in 1992 with an agreement to hold multiparty elections and the country held its first multiparty elections in 1994. FRELIMO was then elected as the majority party in the

parliament. Since then, the country remained relatively stable as a presidential republic, experiencing a sustained economic growth, an increased foreign direct investment and a diversification in its private sector (Taimo, 2010). Because of the stable macroeconomic environment and the implementation of programs and socio-economic reforms, the country recorded an annual average economic GDP growth of 8.1 percent during the period 1995-2012, representing one of the highest in the world.

Although the Mozambican economy has made significant progress in the last ten years in its reported growth and its efforts on improving the investment climate, it still has a low ranking in the international indicators of competitiveness and business environment. This is related to poor access to finance, perceived prevalence of corruption, inefficient government bureaucracy, inadequate infrastructures and the education level of the workforce. Also, among the population, there is a perceived inferiority of entrepreneurship as a career choice (Robb, 2014). The human development indicators, namely the Human Development Index (HDI) and the Human Development Index Adjusted Gender (IDG) showed a positive trend, primarily from the positive results achieved in economic growth, access to education, longevity and reduced gender inequality in access to income (INE and PNUD in Government of Mozambique 2014). However, this evolution coexists with high level of informal sectors, high rates of unemployment(especially among the youth), and a large part of the population living in poverty.

Meanwhile, small and medium domestic enterprises and locally owned business ventures lag behind and experience low labor productivity. The formal sector employs only 11.1 percent of the total labor force, 4.1 percent of which is in the public sector. With a total labor force of 10.1 million, it is estimated that 52.3 percent are self-employed informal workers and 11.5 percent are family workers without remunerations. The unemployment rate remains above 21 percent and is higher among young adults, including university graduates. It is estimated that about 300,000 youth enter the labor market each year (Government of Mozambique, 2006). In recent years, initiatives by the government and other civil society organizations to support entrepreneurship, multiplied with the aim of improving the level of economic development. Many of these programs target vulnerable potential entrepreneurs, aiming poverty reduction rather than skill acquisition (Robb, 2014).

In the National Development Strategy (2015-2035) (Government of Mozambique, 2014), under the challenges and opportunities for development, knowledge is pointed as “crucial to the exploration of socio-economic dynamics that occur in the country because it allows to create new capabilities and patterns of economic development. Thus, investments in education and research, allied to science and technology, are key factors to catalyze the production process and the economic competitiveness of the country.” In the same document, the change toward a more entrepreneurial mind and attitudes are also expressed as one of the fundamental factors for the success of the National Development Strategy. Thus, for both economic and

social reasons, entrepreneurship education represents one of the main concerns of Mozambican Government. In fact, one of axes of the National Agenda to Combat Poverty is to promote entrepreneurship through the education system, stressing the support to entrepreneurship at the level of HEI (Valá, 2009). This support includes the introduction of entrepreneurship courses, related to business creation and local development, to both prepare and motivate graduate students to consider entrepreneurship as a possible professional career and to develop entrepreneurial behaviour. One of the main challenges in this agenda is the expansion of the higher education system but also the improvement of its quality and internal efficiency. In the next section the situation and difficulties of entrepreneurship education in Mozambican HEI is presented.

3.2. Entrepreneurship education in Mozambican HEI: Status and barriers


3.2.1. Research design and methodology

The empirical study has a descriptive and exploratory nature. It was developed in 2014 and 2015 comprising three phases.

First, identification of HEI implementing entrepreneurship courses in Mozambique. This phase was quite time consuming because there was not reliable official data about this issue. Thus, an extensive field research was conducted to map the HEI that implement entrepreneurship courses in Mozambique. After the consultation of official sources and given the lack of accuracy of those sources², the field work continued with the consultation of web pages and other sources of media. Furthermore, phone calls were made to different HEI to confirm the existence (or not) in their curricula of entrepreneurship subjects. In this phase, seven different HEI—three public and four private—were identified, spread throughout several Mozambican provinces through several establishments. In total, 34 HEI establishments with entrepreneurship education were identified as presented in Table 1.

² According to official sources, only two HEI implemented an entrepreneurship curriculum (See appendix).

Table 1. Territorial distribution of HEI establishments with entrepreneurship education in Mozambique



Zone 1: North				
Nampula	Niassa	Cabo-Delgado	Total	
U.P. UCM	U.P. UCM; ISGECOF	U.P. UCM	3 Public 4 Private	
Zone 2: Center				
Sofala	Manic a	Tete	Zambézi a	
U.P. UCM ESEG	U.P. UCM ESEG	U.P.; ISPT UCM, ESEG; ISGECOF; AP	U.P. UCM AP	5 Public 10 Private
Zone 3: South				
Maputo	Gaza	Inhambane		
U.P; UEM ESEG; ISGECOF; AP	U.P; UEM; ISPG ESEG AP	U.P; UEM -	7 Public 5 Private	
Total HEI establishments with entrepreneurship curricula				34

Legend - Public HEI: U.P.-Universidade Pedagógica; ISP-Instituto Superior Politécnico, UEM-Universidade Eduardo Mondlane; **Privates HEI:** UCM-Universidade Católica de Moçambique; IESGECOF-Instituto Superior de Gestão, Comércio e Finanças; ESEG-Escola Superior de Economia e Gestão; AP - Universidade Politécnica (known as “A Politécnica”).

The second phase was to select the institutions to be further researched. A sample strategy was defined, based on the following criteria:

1. At least two establishments from each region (South, Center and North);
2. Two establishments from each HEI whenever possible;
3. Select the establishments more focused on entrepreneurship and business creation and with entrepreneurship curricula implemented before 2014.

From these basic criteria, other constraints determined the final configuration of the sample, namely the lack of guaranties of a safety access to certain territories in political instable context (troubled post-election period). Thus the selected sample was composed of the six HEI, including twelve establishments as seen in Table 2.

In the third phase, selected establishments were contacted by phone and mail to make an appointment with the main representative of the institution and/or with the entrepreneurship education director. During this process, we found out that in one of the selected establishments—*A Politécnica*—it was the first year of entrepreneurship curricula implementation and, because it was too early to assess the results of such implementation, the establishment was eliminated from the sample. Furthermore, in the field, it was found that ESEG was in a process of financial rupture that led to the closure of their establishments. Thus, the study was conducted in ten establishments of the five (three public and two

private) HEI: ESNEC and ESUDER of Eduardo Mondlane University (UEM- *Universidade Eduardo Mondlane*); ESTEC and Tete UP, of Pedagogical University (UP- *Universidade Pedagógica*); Tete and Gaza Polytechnic Institutes (ISP - *Instituto Superior Politécnico*); Tete and Nampula establishments of Catholic University of Mozambique (UCM - *Universidade Católica de Moçambique*) and Maputo and Niassa establishments of The Higher Institute of Management, Trade and Finance (ISGECOF -*Instituto Superior de Gestão, Comércio e Finanças*) (see Table 3).

Table 2. Tentative sample of HEI to be explored in this study

HEI	South			Center				North			Total
	Maputo	Gaza	Inhambane	Sofala	Manica	Tete	Zambézia	Nampula	Niassa	C.Delgado	
Public											
UEM	-	1	1	-	-	-	-	-	-	-	2
UP	1	-	-	-	-	1	-	-	-	-	2
Private											
UCM	-	-	-	-	-	1	-	1	-	-	2
AP	1	-	-	-	-	1	-	-	-	-	2
ESEG	1	-	-	-	-	1	-	-	-	-	2
ISGECOG	1	-	-	-	-	-	-	-	1	-	2
Total	4	1	1	0	0	4	0	1	1	0	12

Table 3. HEI explored in this study

HEI	South			Center				North			Total
	Maputo	Gaza	Inhambane	Sofala	Manica	Tete	Zambézia	Nampula	Niassa	C.Delgado	
Public											
UEM	-	ESNEC	ESUDER	-	-	-	-	-	-	-	2
UP	ESTEC	-	-	-	-	UPt	-	-	-	-	2
ISP	-	ISPG a)	-	-	-	ISPT	-	-	-	-	2
Private											
UCM	-	-	-	-	-	UCMt	-	UCMna	-	-	2
ISGECOG	ISGECOFm	-	-	-	-	-	-	-	ISGECOGni	-	2
Total	2	2	1	0	0	3	0	1	1	0	10

Note: Acronyms represent a code that will be used to identify each institution. a) This establishment was inquired one year later than the others (in 2015) due to political instability in 2014 moment of data collection.

Data was collected through documental sources, web pages and interviews. Structured interviews with the directors of the establishments were focused on the following dimensions of entrepreneurship education:

- Objectives, methodologies and resources for entrepreneurship education, including entrepreneurship knowledge/training of entrepreneurship teachers;
- Practical/immediate results of entrepreneurship education, measured by the number of firms created as a result of the entrepreneurship education and/or support provided by the HEI;
- Main barriers to firms' creation by HEI students.

3.2.3 Results and discussion

Characterization of the HEI inquired and courses implemented

1. The Eduardo Mondlane University (UEM) is a public institution of national scope, the oldest institution of higher education in Mozambique. It was founded in 1962, under the name of General Studies University of Mozambique. In 1976, President Samora Moises Machel assigned to this institution the name of Eduardo Mondlane University³. In 2008, this university created two schools especially focused on entrepreneurship and business creation: the *Escola Superior de Negócios e Empreendedorismo de Chibuto* (ESNEC) (Business and Entrepreneurship Higher Education School) in Gaza province and *Escola Superior de Desenvolvimento Rural* (ESUDER) (Rural Development Higher School) in Inhambane province, whose activities began in 2009.

2. The Pedagogical University (UP) is a public institution that has the primary mission of training teachers and boards of education with higher education, providing them the scientific and pedagogical-didactic tools. This university was founded in 1985 as *Instituto Superior Pedagógico* (ISP) (Higher Pedagogical Institute), from the embryo developed in the former Faculty of Education of UEM, becoming the UP in 1995, the second public university in the country. By 2011, the UP completed the reform process started in 2006, which included administrative, pedagogical and scientific processes changes. In the pedagogical, this reform allowed the introduction of new curricula in 2009⁴. By this time, entrepreneurship curricula was introduced in partnership with UNIDO⁵ to train teachers (for secondary schools) on this subject. In this university, “entrepreneurship” is both a subject and a cross-cutting theme within the curriculum of different degrees. Among the Higher Colleges and Schools of UP, the *Escola Superior Técnica* (ESTEC), a higher technical school founded in 2008 in Maputo province and the UP in Tete founded in 2009, are those where entrepreneurship is taught as a subject.

3. The Polytechnic Institute (ISP) is a public institution of higher education established in 2005. It has several establishments distributed across the country. The ISPG, established in the Gaza province, is based in Lionde district but functions provisionally in the Agrarian Institute of Chokwe. The ISPG provides technical and vocational education for professionals and entrepreneurs, aiming to establish itself as business and technical center specially oriented for farming, cattle-breeding and livestock⁶. In Tete province, the ISPT is also devoted to technical and vocational education, through education oriented to economy,

³ <http://www.uem.mz/index.php/sobre-a-uem/historial>

⁴ https://www.up.ac.mz/index.php?option=com_content&view=article&id=7&Itemid=40 and http://www.portaldogoverno.gov.mz/Informacao/edu/subfo_inst_ens_sup/

⁵ UNIDO, the United Nations Industrial Development Organization, is the specialized agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalization and environmental sustainability.

⁶ <http://ispg-mz.net/index.php/pagina-inicial/quem-somos.html>

business incubation, as well as the provision of professional services⁷. The focus on entrepreneurship exists since the creation of a business incubator in 2009.

4. The Catholic University of Mozambique (UCM)⁸ was officially founded in 1995 as a private higher education institution based in the city of Beira, Sofala province. It is one of the first private universities in the country and the first based outside the city of Maputo. In 1996, it opened its doors with a Faculty of Economics and Management (EGF) in Beira and a Faculty of Law (Fadir) in Nampula. The Faculty of Education and Communication, established in 1998 in Nampula, has several courses in the Social Sciences and Humanities. In 2008, another delegation of the university in Tete was created, the Faculty of Natural Resource Management and Mineralogy. Both establishments include courses in Economics and Management and, since 2008, have an entrepreneurship curriculum.

5. The Higher Institute of Management, Trade and Finance (ISGECOF)⁹ is a private institution of higher education, teaching courses in the areas of management, law and economics. This institution, established in 2009, is based in Maputo but is also represented in the provinces of Tete and Niassa. In the province of Niassa, the school is situated in Cuamba and has a delegation in the City of Lichinga. An entrepreneurship curriculum exists in Maputo's establishment since its foundation and since 2013 in Lichinga's school.

Table 4 presents a summary of some data concerning those five HEI. Table 5 presents some data about the inquired establishments, especially concerning entrepreneurship education, namely: the year of introduction of entrepreneurship education/support and the mode of introduction of the subject, considering three possibilities: i) through specific subjects, ii) included as a cross-cutting theme in other subjects and iii) with the creation of a business incubator. The table also shows the approximate number of students with entrepreneurship education and firms/businesses created¹⁰.

Table 4. Data about the explored HEI

HEI	Public			Private	
	UEM	UP	ISP a)	UCM	ISGCOF
Foundation year	1962	1985	2005	1995	2009
Number of students (2011)	29 086	35 798	2 108	10 203	1 927
Number of teachers (2011)	1614	1144	238	678	205
Year of the introduction of entrepreneurship education in the curricula	2008	2008	2006	2008	2009

a) Includes Gaza, Manica, Tete and Songo Institutes

Sources: Ministry of education, 2011 and interviews.

⁷ <http://www.ispt.ac.mz/>

⁸ <http://www.ucm.ac.mz/cms/universidade/historia>

⁹ <http://www.isgecof.ac.mz/>

¹⁰ It was not possible to assess the exact number, only the perception of the directors of the schools.

Table 5. Foundation year, year and mode of introduction of Entrepreneurship education in the HEI inquired

HEI	South					Centre			North	
	UP/ESTEC	UEM/ESNEC	UEM/ESUDER	ISPG	ISGECOFm	UPt	ISPT	UCMt	UCMna	ISGECOFni
Foundation year	2008	2008/2009	2008/2009	2005	2009	2009	2005	2008	1998	2009
Year of the introduction of entrepreneurship education in the curricula	2008	2008/2009	2008/2009	2006	2009	2008/2009	2009	2008	2008	2013
Mode of introduction										
Subject (name)	1. Entrepreneurship and business vision	1. Entrepreneurship I 2. Entrepreneurship II 3. Entrepreneurship III 4. Business Plan 5. Business simulation 6. Legal framework of entrepreneurship	1. Notions of Entrepreneurship 2. Agribusiness Management	1. Entrepreneurship	1. Entrepreneurship	1. Entrepreneurship	1 Business Simulation	1. Entrepreneurship 2. Business plan 3. Business simulation	1. Entrepreneurship 2. Enterprise management	1. Entrepreneurship
Cross-cutting theme	x					x	x			
Business incubation	x	x		x			x			x
Number of students with entrepreneurship curricula	448	360	70	70	n/a	n/a	225	350	448	360
N° of companies / businesses created	+50	+20	+5	20	+10	+50	6	5	5	0

Legend: n/a = not available.

Objectives, methodologies and resources for entrepreneurship education

Table 6 presents a summary of the answers concerning objectives, methodologies and resources for entrepreneurship education.

Results indicate that i) awareness about entrepreneurship process, ii) education for business creation and iii) promotion of entrepreneurship dynamics, are *objectives* of entrepreneurship education for all of the respondent HEI (important=2 or very important=3, for all). These objectives correspond to the most cited objectives of entrepreneurship education and to the most well established approaches in literature (Alberti *et al.*, 2004). On the other hand, more emergent and specific themes and approaches to entrepreneurship are less common in the definition of the objectives, namely education for technology-based entrepreneurship and education for social entrepreneurship. Continuing education for entrepreneurs is the least mentioned objective.

Table 6. Objectives, methodologies and resources for entrepreneurship education

HEI with entrepreneurship education	South					Center				North		Mean	SD
	A	B	C	D	E	F	G	H	I	J			
Objectives of entrepreneurship education (scale 1 a 3):													
Entrepreneurial awareness;	3	3	3	3	3	3	3	3	3	3	3	3,00	0,000
Education for business creation;	3	3	3	3	3	3	3	3	2	3		2,89	0,314
Promoting entrepreneurship dynamics;	3	-	3	2	2	3	2	3	3	3		2,75	0,433
Teaching social entrepreneurship.	3	1	2	2	1	1	3	2	1	1		1,78	0,786
Technology-based entrepreneurship education;	1	3	2	1	1	2	2	2	1	2		1,78	0,629
Continuing education for entrepreneurs;	1	1	2	1	3	2	2	2	1	2		1,56	0,497
Methods: (scale 1 a 5)													
Business plan competitions;	5	5	4	4	5	5	-	5	5	5		4,75	0,433
Simulations;	5	4	4	3	5	5	-	5	5	5		4,50	0,707
Discussion and resolution of case studies;	4	3	3	3	4	5	5	5	5	5		4,22	0,916
Development of scientific research projects;	5	5	4	4	5	5	5	3	1	5		4,11	1,286
Field work that promote contact with entrepreneurs;	3	-	4	2	3	3	5	4	1	3		3,13	1,166
Entrepreneurship seminars and conferences	1	1	3	3	1	3	5	5	1	3		2,78	1,474
Technical visits to companies and trade shows;	3	3	4	1	3	1	5	4	1	1		2,56	1,499
Promoting courses and extracurricular workshops;	1	1	3	2	1	2	-	5	1	2		2,13	1,269
Use of Resources: (scale 1 to 5)													
Business incubators;	3	3	1	3	5	-	5	1	2	-		2,57	1,294
Entrepreneurship Laboratories (E-Lab)	1	2	1	1	1	-	5	5	2	-		2,43	1,678
Software for preparation of business plan.	2	3	1	2	1	-	2	1	2	-		1,86	0,639
Number of teachers with training in entrepreneurship a)	2	5	5	2	5	2	1	5	5	2		3,22	1,618

a) 1 = 1 or 2 teachers; 2 = 3 or 4 teachers; 3 = 5 or 6 teachers; 4 = 7 to 9 teachers; 5 = 10 or more teachers

Concerning *methodologies*, business plan competitions, simulations, discussion and resolution of case studies and research projects, are the most mentioned, obtaining the highest scores. Not so common but still mentioned by several HEI are methods that imply contact with entrepreneurs – namely field work with entrepreneurs, technical visits to companies and trade shows – but also entrepreneurship seminars and conferences. The lower practice promoting courses and extracurricular workshops can be explained by the lower emphasis on continuing education for entrepreneurs.

Apart from textbook (the main *educational resource*), the use of digital instruments (software) and entrepreneurship laboratories is still quite rare. Business incubation is present in the establishments more directed to technical education.

Institutions were also inquired about the *number of teachers* who have, or are having, specific training/qualifications on entrepreneurship. The actual number of teachers with specific training/qualifications in entrepreneurship is still quite modest. However, in some cases there is continuous investment in the training of entrepreneurship teachers through the establishment of collaborative agreements with other national and international institutions. That is the case of ESTEC (UP), ESNEC (UEM), ISPG and ISPT with ten or more teachers trained under these collaborative agreements.

ESNEC has come to establish (formal and informal) cooperative relationships with several other national and international academic institutions, especially with Portuguese-speaking countries and other international institutions, for teacher's skills development. Since 2011, ESNEC integrated the NICHE Project¹¹—Development of a Sustainable Trade Academy; which aims to empower teachers and enable graduate students to develop a business through a business incubator.

The UP is a partner in the project "Entrepreneurship development for the youth" developed by UNIDO. This project was funded by the Norwegian government and by the Ministry of Education and Culture of Mozambique, and fosters the insertion of an Entrepreneurship Education Curriculum (ECP) into general education and vocational/professional secondary schools throughout the country. Beside other activities, UNIDO also conducted teacher training programs both before and during the ECP implementation period to facilitate program implementation across the country (UNIDO, 2012).

The ISPG cooperative action integrates the training of teachers and research under the auspices of MHO (Dutch Co-financing Program for Higher Education), NPT (Netherlands Program for the Institutional Strengthening of Post-secondary Education and Training Capacity), NICHE program and collaborations with the *Universidade de Córdoba* from Spain. ISPT also implemented cooperative strategies whose actions include training targeted at business incubator, personal skills development and research area. Since 2009, the institution also participates in the NICHE project.

¹¹ The *Netherlands Initiative for Capacity development in Higher Education* (NICHE) is a Netherlands-funded development cooperation program. It aims to sustainably strengthen higher education and technical and vocation education and training (TVET) capacity in partner countries For more information see <https://www.nuffic.nl/en/programme-administration/niche/countries-and-projects/mozambique>.

These results show that traditional methods—namely business plans and case studies—are the most common methodologies, which is in line with other studies (e.g Audet, 2004; Rocha and Bianchi, 2010). The lack of trained teachers can be one explanation for the use of more traditional methods as well as the difficulties in bringing “the concept of entrepreneurship into the classroom” (European Commission, 2002). The lack of relationships with the business community represents a weakness in the “learning by doing” component (Lima *et al.*, 2012); however, schools tried to overcome this weakness with the use of *simulations*. Others, with a more technical component, created business incubators to help and monitor the implementation of the business project developed in the school.

Main barriers to firms’ creation identified.

Considering the above and the answers to the question “what are the main difficulties in implementing entrepreneurship education,” the Mozambican HEI identified several barriers as indicated in Table 7.

Table 7. Main barriers to business creation by HEI students

HEI		Main barriers identified
South	A	Lack of educational resources that support all of entrepreneurship education levels; Lack of openness on the part of companies and entrepreneurs to share their experience; The training and institutional exchange should happen more often
	B	The number of teachers with specific training in entrepreneurship is not sufficient; Material and financial difficulties to carry out practical activities; Insufficient bibliography; in political terms, there should be changes in the financial system and on tax rates (2 years without paying taxes) in order to ensure that new firms do not open bankruptcy and become increasingly strong.
	C	The number of teachers with training in entrepreneurship is reduced. The available infrastructure limits the educational activity. There is a lack of financial funds. A business incubator or an entrepreneurship lab is missing
	D	Lack of practical classes in the laboratory and there are no resources the for existence of a business incubator; the library and the infrastructures are limited; Reduced number of teachers with entrepreneurship training, and lack of partners for the training of teachers in the area of entrepreneurship; Lack of financial resources. It could also help the fight against poverty if, on a national level, entrepreneurship education in all universities was mandatory instead of optional.
	E	Lack of laboratories and lack of funding to develop best practices for business incubation.
Center	F	Reduced number of teachers with training in entrepreneurship.
	G	Few teachers are involved in the incubator programs and suggests that there should be entrepreneurial forums
	H	Lack of cooperation with other entities or entrepreneurs; Lack of monitoring of lessons, subjects and projects developed by students and teachers; lack of funds
North	I	Lack of partnerships with entrepreneurs of small and medium enterprises; Little dedication from students to the business plan design; few teachers with training/education in the areas of entrepreneurship and financial management.
	J	The infrastructures are limited; Few teachers have training in entrepreneurship; Lack of a business incubator; Lack of partnerships for training teachers in entrepreneurship area.

These barriers can be summarized as follow:

1. Lack of teachers with specific training/qualifications in entrepreneurship because this subject/area of study is new in developing countries. The existing few teachers were trained by international organizations (e.g. UNIDO) or qualified in foreign universities with more experience and tradition in the entrepreneurship field. The collaboration of Mozambican HEI with other international institutions turns out to be a key factor in actual and further development of its human resources and its competencies in entrepreneurship area.

2. Poor relationship with the business community, both because of material difficulties to implement practical activities (e.g. visits to companies) and the lack of receptiveness on the business community side.

3. Despite the fact that educational (written) material has been mentioned as the main resource for entrepreneurship education, some HEI indicated that the available material is not enough considering both the quantity and quality. The inexistence of other educational resources and support infrastructures, like incubators, laboratories and libraries, often associated with lack of financial resources was also mentioned as an important barrier to firm creation by HEI students and teachers.

4. The political and business environment was also mention as an important barrier to firms' creation, namely in what concerns financial and tax systems.

These results are consistent with similar studies that reveal the existence of several barriers to entrepreneurship education in HEIs, namely the prevalence of classes and overly theoretical resources, in detriment of other methods as entrepreneur's testimonials (Rocha and Bachi, 2010; Abranja, 2008); the lack of information about the business creation process (Costa, 2013), deficient networks and/or lack of relationships between entrepreneurs and other institutions (Mohammadi *et al.*, 2007) , the lack of trained teachers (European Commission, 2002 and Fayolle, 2007a; Razavi *et al.*, 2012; Rahimi and Mokhber, 2010), the lack of financial resources (European Commission, 2012) and inadequate physical and political infrastructures (Mohammadi *et al.*, 2007).

However, what seems to be more striking in Mozambican HEI are the degree of such weaknesses: a greater dependence on external knowledge resources and the lack of some basic things such as students' access to textbook and other written material. Furthermore, the effectiveness of entrepreneurship education seems difficult to achieve if other institutional factors are not improved, namely those related with financial, tax and legal systems. Of particular relevance is also the lack of relationships with entrepreneurs and other relevant actors in the business arena. These relationships constitute what Sautet (2013) named "extended networks." According to this author, the development of systemic

entrepreneurship requires this specific kind of networks, made of weak ties, i.e., indirect ties (beyond family ties) that enable entrepreneurs and firms to substantially increase their access to information and resources. It facilitates the acquisition of capital, the transfer of knowledge and enable firms to build up organizational competences and, eventually, dynamic capabilities. Without large-scale social interaction, individuals “cannot absorb innovations involving interdependences extending beyond the communal boundaries of trust and therefore, systemic entrepreneurship cannot exist.

4. Concluding remarks

This study focused on the issue of entrepreneurship promotion and the role of HEI as a support instrument in the context developing countries. More specifically, it analyzes entrepreneurship education in Mozambican HEI to understand its situation and difficulties.

Despite the fact that, in the last decade, entrepreneurship education became a reality in Mozambican HEI, it still faces important barriers to its effectiveness. These barriers are related to the lack of trained teachers, deficient networks with entrepreneurs and other institutions, the lack of financial resources and inadequate physical and political infrastructures. The mentioned difficulties are not new and were mentioned in other studies; however, what seems to be more striking in Mozambican HEI (and probably in other developing countries) are the greater dependence on external knowledge resources, the lack of basic things like students’ access to textbooks and other written material and lower interaction with entrepreneurs and other relevant actors in the business arena. Furthermore, the effectiveness of entrepreneurship education seems difficult to achieve if other institutional factors are not improved, namely those related with financial, tax and legal systems.

This study presents some limitations. First, it does not cover all the establishments offering entrepreneurship education. To have a complete image of higher entrepreneurship education in Mozambique, the other establishments should also be inquired. Second, a deeper analysis of programs, methodologies and results is needed to better evaluate the congruence between the three. Furthermore, students should also be inquired to obtain a triangulation of sources. Finally, it must be noted that assessment of entrepreneurship education results in such a short period of time since its implementation is limited, if not impossible. In fact, as stressed by Dinis *et al.* (2014) the efforts and investments on entrepreneurship education “cannot be immediately fully evident and long-term results (often considering a time-span of generations) should be expected.” Thus, because the assessment of the impact of an entrepreneurship program requires a deep and longitudinal analysis, these are paths for further research.

In spite of these limitations, this study has both theoretical and practical contributions. From the theoretical point of view this study contributes for the deepening of the theme of

entrepreneurship promotion in the specific contexts of developing countries. Also, it extends the focus of the HEI role in the promotion of entrepreneurship, from education to incubation and to the approach to the business community. In practical terms, this study represents a first assessment about the processes and results of the implementation of entrepreneurship education in Mozambican HEI. It highlights problems HEIs face to effectively promote results from entrepreneurship education, namely when their actions move from education in the classroom to practical implementation of entrepreneurial business initiatives providing bases for the design and eventual adjustment of this support instrument, especially in the context of developing countries.

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REPÚBLICA DE MOÇAMBIQUE
MINISTÉRIO DA EDUCAÇÃO
DIRECÇÃO PARA A COORDENAÇÃO DO ENSINO SUPERIOR

À
Senhora
Dambusse Bucuane Libombo

Ref. ⁵⁰DICES/MINED/ 13

03 de Dezembro de 2013

Assunto: Pedido de relação de Instituições de Ensino Superior com programas curriculares de ensino do empreendedorismo

A Direcção para Coordenação do Ensino Superior (DICES) acusa a recepção da carta proveniente da senhora Dambusse Bucuane Libombo cujo assunto é:

“Pedido de relação de Instituições de Ensino Superior com programas curriculares de ensino do empreendedorismo”, em Moçambique.

Existem duas instituições do ensino superior com programas curriculares de ensino de empreendedorismo, uma pública e a outra privada, nomeadamente:

- Universidade Eduardo Mondlane (Pública).
- Universidade Católica de Moçambique (Privada).

Sem outro assunto de momento aproveito a ocasião para endereçar os meus melhores cumprimentos.



Sandra Estrela Brito, PHD
(Professora Auxiliar)

Av. 24 de Julho, nº167- Telefone 21492782, Fax 21492196 , CP 34 email: Carmen.etelvina@mined.gov.mz

Chapter 3 - Cooperation networks for
entrepreneurship education in Higher Education
Institutions: Strategies for skills development in
Mozambique

COOPERATION NETWORKS AND ENTREPRENEURIAL SKILLS DEVELOPMENT IN HEI: THE CASE OF MOZAMBIQUE

Abstract

Based on the Mozambican case, this study discusses the issue of cooperation networks as a learning instrument and how they can be used for the development of the entrepreneurial skills in Higher Education Institutions (HEI) in the context of developing countries. With an exploratory and descriptive nature, the empirical study includes a sample of 10 establishments of the existing 5 Mozambican HEI with entrepreneurship education before 2014. Data collection was made through an exploratory interview with the directors of the HEI and consultation of documental sources. Results show that public HEI are more prone to develop university networks than private HEI, including in their networks diverse national and international institutions. Furthermore, there are evidences that university networks allows a better preparation of teachers and the existence of more and better learning opportunities. From a theoretical point of view, this study contributes to a deeper understanding of the theme of entrepreneurship and entrepreneurship education in two ways: i) focusing in the specific contexts of developing countries and ii) exploring the intersection of entrepreneurship education with networks and cooperation approaches. In practical terms, this study represents a first assessment about the processes and results of entrepreneurship education in Mozambican HEI and contributes to the understanding by the leaders of HEI about the importance of cooperation between institutions/organizations for the development of entrepreneurial skills of both teachers and students, especially in the context of developing countries.

Keywords: Entrepreneurship education; University Networks; Skills development; Developing Countries; Mozambique.

1. Introduction

Entrepreneurship education is a growing concern within political and academic fields (Kuratko, 2005). A large number of initiatives have been developed worldwide to promote a broad range of entrepreneurial activities within academic institutions (Fayolle, 2007). This tendency is more notorious in developing countries like those in sub-Saharan Africa, where entrepreneurship is seen as a solution for different segments of the population and for inclusive growth. In these countries, in the last decade, entrepreneurship education has constituted one privileged axis of public policies to combat poverty and social exclusion. This is also the case of Mozambique, where, within the framework of the National Agenda to Combat Poverty - a programme for poverty reduction and the creation of new jobs - one of the vectors is the promotion of entrepreneurship through the education system (Valá, 2012) with an emphasis on entrepreneurship support at the level of HEI. This policy focuses on the introduction of subjects and infrastructures related to entrepreneurship and business creation in order to "strengthen the intervention of the network of institutions engaged in [a] development capacity to manage and implement business". It is assumed, as pointed by several authors (Freeman, 1991; Dodgson, 1993; Tsan, 1999, Tidd and Izumimoto, 2001), that cooperative networks between organizations contribute to the creation of new knowledge, developing new skills and organizational learning, fundamental for processes of change and quality improvement.

In spite of the fact that there are several studies about the role of cooperation in learning and innovation processes and, increasingly more in the last decades, about entrepreneurship education, few studies focus on the role of cooperation networks as a learning process for innovation in entrepreneurship education in HEI in developing countries. This study intends to fulfil this gap. Based on the Mozambican case, the paper discusses the issue of cooperation networks as a learning instrument and how they can be used for the development of entrepreneurial skills in higher education. More specifically, it seeks to understand if university networks are decisive for the development of teachers' and students' skills and for the promotion of entrepreneurship, in particular, within the context of developing countries.

The paper includes a theoretical discussion and a presentation of a case study. It begins with a reference to the importance of entrepreneurship education in HEI in the context of developing countries, following with the approach to collaborative networks as a tool for promoting learning and developing organizational skills, especially in the context of educational institutions. It follows with the presentation of the Mozambique case. Finally, implications of study and lines for further research are presented in the concluding section.

2. The Conceptual Framework

Literature reveals different approaches to entrepreneurship education, but in general authors agree with the importance of including two different elements within this definition (European Commission, 2002):

- a broader concept of education for the development of entrepreneurial attitudes and skills, which involves developing certain personal characteristics; and,
- a more specific concept of training on how to create a business.

In this line several authors define entrepreneurship education as the transfer of knowledge about *how*, *by whom* and with what effects *opportunities* are discovered, evaluated and exploited to create products and services (Hindle, 2007; Fayolle and Gailly, 2008) and that includes all future actions to promote, attitudes and skills, covering a number of aspects, such as business creation, growth and innovation (Fayolle and Gailly, 2008).

Entrepreneurship education can also be seen as a mean to increase the survival and success rate of new firms, helping people to discover what enterprising is and the way it works, to learn how to think and act in business and ultimately, to consider new career perspectives beyond the option of employment. Even if acting entrepreneurially is frequently difficult, the venture creation attempt in itself implies a learning process which is useful for the individual's personal development. Entrepreneurship is also linked to the collective dimension once presented as an engine of economic growth in a market economy (Shumpeter, 1942).

Anchored in these benefits in developing countries, where employment is still a historical difficulty, entrepreneurship education is becoming a central issue. In the last decade, several experiences and initiatives were implemented in entrepreneurship education area at different levels of education (North, 2002; Niyonkuru, 2005; Bawuah et al., 2006; UNIDO, 2012; Kaijage and Wheeler, 2013; Robb et al., 2014). In particular, entrepreneurship education in HEI has been considered, for both academia and political instances, a key factor for economic growth and wealth creation to seize talents of students, graduates and researchers and their drive for knowledge creation and innovation (Gravenitz, 2010). This, in theory, would facilitate the birth and growth of innovative firms i.e. innovative entrepreneurship (Petridou et al., 2009). In order to provide a more effective entrepreneurship education, some authors have focused on identifying challenges and opportunities to improve entrepreneurship education in HEIs. As they see it, this improvement should include a broader and diverse education in terms of content and activities and a better teacher preparation (Cornelissen et al. 2011, Lima et al., 2012). In fact, one major problem of entrepreneurship education reported by the European Commission (2002) was the insufficient provision of training for teachers. This is a much more serious problem in developing countries, where, in general, due to historical and political circumstances, entrepreneurship was absent of discourses and practices until recent years. In

the same report *exchange and dissemination* of good practice is presented as an effective instrument to overcome this problem, although not being extensively applied. Attention is drawn to some *international networks* and NGOs which, in a number of countries and by means of *partnerships with the business world* and with a certain degree of support from the public sector have taken the lead in promoting the teaching of entrepreneurship within the education systems. Therefore, the report recommends that, in addition to direct action to be taken by the relevant authorities, initiatives coming from these organisations should be used.

In literature, *cooperation networks* are seen as a mean to develop a technology or product (e.g. Townsend, 2003), but also new skills and a knowledge (e.g. Dodgson, 1993; Tsan, 1999). The role of international strategic alliances in affecting a partial redistribution of skills among partners has been studied by Hamel (1991), who stressed the conception of strategic alliances as opportunities for internalization of partner's skills. In line with this, *university networks* - defined as linkages between HEI and relevant actors for knowledge creation and diffusion - are regarded as one of the most important vehicles for the accomplishment of their mission: knowledge creation and diffusion (Huggins et al., 2008). Chapman et al (2014) distinguish university networks from university-to-university partnerships. According to these authors "while university-to-university partnerships generally involve two institutions collaborating to accomplish a particular activity, university networks typically involve a larger number of institutions and focus on a broader set of activities organised around a particular issue or goal". (p.619). These authors approach the issue of cross-border university networks as a development strategy. According to these authors, governments and international organisations are promoting multi-university networks as a mechanism for strengthening higher education in low and middle-income countries while also promoting greater engagement of universities in high-priority national development issues. Cross-border partnerships with HEI are promoted as a strategy for assisting universities in raising the quality of their teaching and research, including joint and double degree programmes and student and academic staff exchange. Interest in multi-institutional collaboration is growing based on the assumption that it can promote more sustainable relationships than typical university-to-university partnerships. Thus international development agencies are also shifting their attention towards university networks as a means of addressing more complex and sustainable development outcomes. As stressed by Chapman et al (2014), university networks can have a twofold objective: i) capacity building and strengthening of the institutional partners; ii) to address substantive development goals.

In recent times the development of entrepreneurial skills in universities appears as a response to curricular challenges (Pinheiro et al., 2010) but also to new challenges of business/organizational performance requiring entrepreneurial attitudes and initiatives (Gibb, 2002, 2009) that in ultimate instance would improve the ability to create new businesses by their students, and eventually also by their teachers. The relationship between knowledge and learning experiences provided by HEI and new business creation is not clear. In fact,

literature has not generated consistent assessments about the impact of entrepreneurship education on start-up activity (Graevenitz et al., 2010). However, some authors, like Kassiech (2010), argue that HEI education is one of the factors that define knowledge economy and its effect on entrepreneurial activities and economic development. Thus, in spite of the fact that business creation is not the sole, neither probably the most important, result of entrepreneurship education, it can be seen as the more immediate and straight forward result of entrepreneurship education.

These are fundamental reasons why the role of university networks - comprising public and private entities - in improving the quality of student's learning experience but also in the provision of training to teachers is recognized by academics and politicians. (European Commission, 2002; Huggings et al., 2008).

From the above results the conceptual model applied in this research (see Figure 1), which focus on the three following explorative research questions:

- 1) Which institutions possess entrepreneurship education in their curricula? Being entrepreneurship education in HEI a high-priority national development issue in Mozambique (as well as in several developing countries) are public HEI pioneer and more advanced in the introduction of entrepreneurship curricula?
- 2) With which partners do HEI develop cooperation processes for the development of entrepreneurial skills of teachers and students? Is there any difference between public and private institutions in the type and extent of cooperation?
- 3) To what extent HEI with cooperation relationships are more likely to create new businesses?

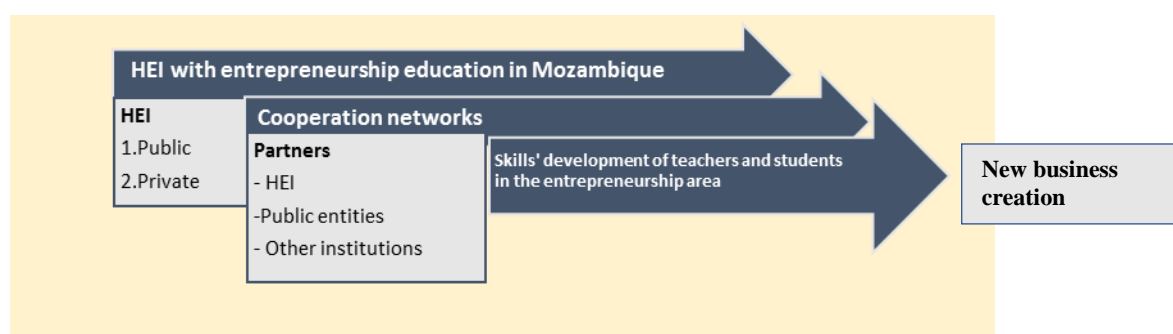


Figure.1: Conceptual model: Cooperation networks for skills' development of HEI's teachers and students in the entrepreneurship area.

3. The Case of Mozambican HEI: Cooperation networks as Strategies for Development of Entrepreneurship competences

3.1 Research Design and methodology

The empirical study is an embedded case study (Yin, 2003) and has a descriptive nature. It is also an exploratory qualitative-based theory development study (George and Bennet, 2005). The study is focused on hypothesis/propositions formation and the historical explanation of individual cases. A case, is here defined, as George and Bennet (2005:17), “as an instance of a class of events. The term “class of events” refers here to a phenomenon of scientific interest that the investigator chooses to study with the aim of developing theory (or “generic knowledge”) regarding the causes of similarities or differences among instances (cases) of that class of events”. Here the phenomenon under study is cooperation networks for entrepreneurship education in Mozambican HEI.

Based on a case description strategy (Yin, 2003), data analysis follows the method of process-tracing (George and Bennet, 2005) and explanation building (Yin, 2003), which attempts to trace the links between possible causes and observed outcomes. In process-tracing, the researcher examines histories, archival documents, interview transcripts, and other sources to see whether the causal process a theory hypothesizes or implies in a case is in fact evident in the sequence and values of the intervening variables in that case. Process-tracing might be used to test whether the residual differences between two similar cases were causal or spurious in producing a difference in these cases’ outcomes.

The study was conducted in 2013-2015 comprising several phases:

The first phase, between 2013 and 2014, was a field survey developed in order to map the HEI that have implemented entrepreneurship courses in Mozambique. The second phase, in 2014, was the selection of a representative sample to inquire the leaders of the establishments based on the following criteria:

1. At least two establishments in each region (South, Centre and North).
2. Two establishments of each HEI.
3. Select the establishments more focused on entrepreneurship and business creation and with entrepreneurship curricula implemented before 2014.

From these basic criteria, other restrictions determined the final configuration of the sample, namely, the lack of security in the access to certain territories due to the unstable political context¹² in the central and northern regions.

Data collections occurred during 2015 and 2015, through semi-structured personal interviews with those in charge of selected HEI with focus on various dimensions of cooperation networks

¹² Data collection occurred in troubled political periods: right before election, during election and post-election

and skills development as follows: 1). Cooperation networks through strategic alliances, 2) Development of teaching and students' competences, 3) Results in terms of the number of firms created.

Further data was collected from direct observation, web pages and other documents published by governmental sources and by the inquired institutions in order to allow data triangulation.

Being a descriptive study, results were analysed considering the research questions and the axis of analysis present in the interview protocol. Data was summarized in tables presented in the next section.

3.2 Results and discussion

In this section results are presented considering the three research questions derived from the conceptual model presented in section 2.

3.2.1 HEI with entrepreneurship Curricula in Mozambique

The survey of HEI with entrepreneurship curricula in Mozambique began with the consultation of governmental sources, namely the Ministry of Education. By the time of the inquiry, the Ministry only possessed information about two institutions, one public (Universidade Eduardo Mondlane) and one private (Universidade Católica de Moçambique). By this time it was also evident that this information was not accurate since in the mass media several degrees with entrepreneurship curricula in other HEI were advertised. Given the lack of accuracy of the official sources, based on a manual with all HEI in Mozambique recognized by the Ministry of Education, the field work continued with the consultation of web pages and other media sources. In addition, there was an attempt to make telephone calls (based on the phone book) for different HEIs to confirm the existence (or not) of entrepreneurship disciplines in their curricula. At this stage, seven different HEI institutions were identified¹³, 3 public and 4 private, with several establishments distributed throughout the provinces of Mozambique as shown in Table 1.

Results in table 1 answer to the questions *which institutions possess entrepreneurship education in their curricula*. It also shows that, being entrepreneurship education in HEI a high-priority national development issue in Mozambique, entrepreneurship curriculum was adopted by both public and private HEI and is present in the three regions of Mozambique.

¹³ In 2014 several other private institutions were announcing in mass media the opening of degrees with entrepreneurship curricula. However these institutions were not recognized by the Ministry of Education.

One of the institutions were considered not suitable for inclusion in the study of the other research questions: ESEG- because it was facing (during 2014) financial difficulties that lead to the closure of almost all its establishments.

Table 1: Territorial distribution of HEI establishments recognized by the Ministry of education with entrepreneurship education in Mozambique in 2014

PROVINCES AND CAPITALS	Zone 1: North			
	Nampula	Niassa	Cabo-Delgado	Total
U.P.	U.P.	U.P.	3 Public	
UCM	UCM; ISGECOF	UCM	4 Private	
Zone 2: Centre				
Sofala	Manica	Tete	Zambézia	
U.P.	U.P.	U.P.; ISPT	U.P.	5 Public
UCM ESEG	UCM ESEG	UCM, ESEG; ISGECOF; AP	UCM AP	10 Private
Zone 3: South				
Maputo	Gaza	Inhambane		
U.P; UEM	U.P; UEM; ISPG	U.P; UEM		7 Public
ESEG; ISGECOF; AP	ESEG AP	-		5 Private
Total HEI establishments with entrepreneurship curricula				34

Legend: *Public HEI:* U.P.-Universidade Pedagógica; ISP-Instituto Superior Politécnico, UEM-Universidade Eduardo Mondlane; *Privates HEI:* UCM-Universidade Católica de Moçambique; IESGECOF-Instituto Superior de Gestão, Comércio e Finanças; ESEG-Escola Superior de Economia e Gestão; AP - Universidade Politécnica (known as “A Politécnica”).

The selected HEI with entrepreneurship curricula in Mozambique are the following:

1. *Universidade Eduardo Mondlane (UEM)* is a public institution of national scope, the oldest institution of higher education in Mozambique, founded in 1962. In 1968, it ascended the rank of University¹⁴. In 2008, This university created the School of Business and Entrepreneurship of Chibuto (ESNEC) in Gaza province, whose activities began on March 2, 2009. Since then all students in this school take a compulsory entrepreneurship course regardless of their area of study. By this time ESUDER was also created - a School dedicated to higher education and scientific research in the field of rural development sciences, with entrepreneurship curricula.
2. *Universidade Pedagógica (UP)* is a public university that has as primary mission the training of teachers and boards of education, providing them with scientific and pedagogical-didactic tools. This university was founded in 1985¹⁵, becoming in 1995 the second public

¹⁴ In 1968 it was called University of Lourenço Marques. This designation in 1977 turned into Eduardo Mondlane University In honor of Eduardo Mondlane leader of FRELIMO killed by in 1969

¹⁵ With the name of Higher Pedagogical Institute , from the embryo developed in the former Faculty of Education of the UEM.

university in the country. By 2011 the UP completed the reform process started in 2006, which included administrative, pedagogical and scientific changes. This process allowed the introduction of new curricula in 2009 including an entrepreneurship curriculum, introduced in partnership with UNIDO, in order to train teachers on this subject. In this university "entrepreneurship" is both course and a cross-cutting theme. Among the higher colleges and schools of UP, the ESTEC- Higher Technical School in Maputo province and the UP-Tete are those that introduced entrepreneurship education as a course in order to promote business creation, especially technology-based entrepreneurship.

3. *Instituto Superior Politécnico (ISP)* is a public institution of higher education established by decree in 2005. It has several institutions distributed across the country. In *Gaza (ISPG)*, the institute aims to develop professional technical education activities, train professionals and entrepreneurs, constitute technical and business centres for farmers, agri-livestock and livestock in the local community, region and in the country. This school was the first to introduce an entrepreneurship curricula in 2006. In *Tete (ISPT)*, it aims to provide technical education, economy education, business incubation and preparation of professional services applied to mining engineering courses, mineral processing engineering, computer engineering, accounting and auditing, accounting and public administration.
4. *Universidade Católica de Moçambique (UCM)* was officially founded in 1995 as a private higher education institution based in the city of Beira, Sofala province. It is one of the first private universities in the country and the first based outside the city of Maputo. In 1996, the Faculty of Economics and Management (FEG), in Beira, and the Faculty of Law (Fadir) in Nampula, were created. Since then, several faculties have been implemented in the area of Education, Agriculture, Medicine, Tourism and Information Management, Engineering and Social and Political Sciences.
5. *Instituto Superior de Gestão, Comércio e Finanças (ISGECOF)* is a private institution of higher education based in Maputo that was established by decree in 2009. It offers six management, businesses and finances related degrees, including since its foundation an entrepreneurship curriculum. This institution is represented in three provinces, namely Maputo, Tete and Niassa. In the province of Niassa, it is situated in Cuamba and the delegation in the City of Lichinga. This school introduced an entrepreneurship curriculum in 2013.

Table 3 presents a summary of some data concerning these five HEI.

Table 3: Data about the inquired HEI

HEI	Public			Private	
	UEM	UP	ISP	UCM	ISGCOF
Foundation year	1962	1985	2005	1995	2009
Number of students (2011) ¹⁶	29 086	35 798	2108	10 203	1 927
Number of teachers (2011)	1614	1144	238	678	205
Year of the introduction of entrepreneurship education in the curricula	2008	2008	2006	2008	2009

b) Includes Gaza, Manica, Tete and Songo Institutes
Sources: Ministry of education (2012:79-80) and interviews

Data presented in table 3, shows that the introduction of entrepreneurship curricula in Mozambican HEI first happened in the public HEI more directed to technical education. After that, the introduction of the subject happened at the same time in both public and private HEI. This period coincided with the announcement by the government, through its Action Plan for the Reduction of Absolute Poverty, that the contribution of higher education to the creation of innovation and self-employment through the promotion of small business is a priority. (paragraph # 397, PARPA II , 2006-2009: 108).

Given the above, the following proposition ensues:

P1: The introduction of entrepreneurship curricula in developing countries is related with the governmental priorities which affect the behavior of both public and private HEI.

3.2.2. Cooperation networks and strategies for entrepreneurship skills development in HEIs with entrepreneurship education: processes and results

HEI Inquired

Based on the criteria presented in section 3.1, the inquired HEI are the following 9 establishments from the existing 5 previously identified HEI (see table 2).

¹⁶ It was not possible to assess the total number of students who receive training in entrepreneurship in each institution however, based in their total number of students, there is a strong probability that that is significantly higher in public HEI.

Table 2: HEI inquired in this study

HEI	South			Center				North			Total
	Maputo	Gaza	Inhambane	Sofala	Manica	Tete	Zambézia	Nampula	Niassa	C.Delgado	
Public											
UEM	-	ESNEC	ESUDER	-	-	-	-	-	-	-	2
UP	UP	-	-	-	-	UP	-	-	-	-	2
ISP	-	ISPG a)	-	-	-	ISPT	-	-	-	-	1
Private											
UCM	-	-	-	-	-	UCM	-	UCM	-	-	2
ISGECOF	ISGECOF	-	-	-	-	-	-	-	ISGECOF (Lichinga)	-	2
Total	2	2	1	0	0	3	0	1	1	0	10

a) Note: Acronyms represent a code that will be used to identify each institution. a) This establishment was inquired one year later than the others (in 2015) due to political instability in 2014 moment of data collection

Description of cooperation networks implemented: partners and contents

Concerning cooperation networks for the development of teaching and students' skills in HEI, results show that institutions with this kind of strategies are scarce: from the inquired institutions only the public institutions - i) ESNEC - School of Business and Entrepreneurship of Chibuto (University Eduardo Mondlane), ii) Polytechnic Institute of Tete (ISPT) and iii) Pedagogic University (UP), both in Maputo and Tete - developed projects of cooperation for the development of teachers' and students' skills in the area of entrepreneurship, as follows:

- i) ESNEC is the only school specialized in entrepreneurship training, which can explain the diversity of collaborative initiatives developed in this area. In the last years, the school has been implementing agreements/projects for the development of teachers', students', and local entrepreneurs' skills, namely SMETOOLKIT, which prepares and allows students, teachers and small business owners to use management tools for SMEs; and *Business Edge*, that aims to enable teachers, businessmen and students in business management and also provides other short training projects in hotel services, English and computers. Both projects are funded by the International Finance Group (World Group) and IBM. Since 2011 it was also implemented the *NICHE Project - Development of a Sustainable Trade Academy*¹⁷; a project funded by Nuffic¹⁸ and developed by a consortium including TASTE, the Royal Tropical Institute (KIT) and Van Hall Larenstein University of Applied Sciences¹⁹. This project aims to empower teachers and enables graduate students to develop a business through a business incubator. This incubator

¹⁷http://esnec.uem.mz/index.php?option=com_content&view=article&id=53:projecto-niche-vai-garantir-academia-de-negocios-sustentaveis-na-esnec-&catid=2:anuncios-e-eventos&Itemid=6.

¹⁸ EP-Nuffic is the expertise and service centre for internationalisation in Dutch education.

¹⁹ All Dutch organisations, including NGO and HEI .

intends to be “a space where theory and practice can coexist and where different actors in the public and private sector can complement their interests”²⁰. This project includes the participation of staff and students in courses of action research and sustainable business management in order to obtain the ability to advise the various actors such as associations of producers, traders and financial institutions in the agricultural and commercial sectors, through a model of student-centred teaching. In 2011, ESNEC was able to strengthen its institutional capacity through the training of over 50 students, 30 teachers and 20 employees on various topics and has also developed partnerships with other institutions such as BINDZO, ARPONE, Millennium Villages, IIAM, etc. To enforce local and regional experiences, the NICHE project uses the local expertise of research institutes such as the Institute of Agricultural Research of Mozambique (IIAM) and HICEP (Hydraulic Chókwe); agricultural enterprises in Chokwe, Xai-Xai and Maputo. Furthermore, to overcome the lack of well-qualified teachers in business and entrepreneurship subjects ESNEC has come to establish (formal and informal) cooperative relationships with several other national and international academic institutions, especially in Portuguese-speaking countries, for teacher’s skills development.

- ii) ISP also participates in implemented cooperative strategies which include training targeted at business incubation, personal skills development and research area. In 2009, ISPT implemented work visits to incubators in South Africa in order to exchange experience and to understand the incubation and business incubators models concepts. The visit program was funded by the Netherlands Programme for Institutional Strengthening of Post-secondary Education and Training Capacity (NPT) through the project 'Consolidation of Good Governance and Public Administration in Mozambique', in partnership with GAPI - Investments Society²¹. Since 2009, ISPT is also participating in the NICHE project. The ISPG cooperative action integrates the training of teachers and research under the auspices of MHO (Dutch Co-financing Program for Higher Education), NPT (Netherlands Program for the Institutional Strengthening of Post-secondary Education and Training Capacity), NICHE program and collaborations with the Universidade de Córdoba from Spain.
- iii) The UP is a partner in the "Entrepreneurship development for the youth" project developed by UNIDO. This project was funded by the Norwegian Government and by the Ministry of Education and Culture of Mozambique and aims at the insertion of an Entrepreneurship Education Curriculum (ECP) into general education and vocational/professional secondary schools throughout the country. Beside other activities, UNIDO conducted teacher training programs both before and during the ECP

20 From the interview with the head of the institution.

21 Financial Institution for Development, created as such in 2007. This organisation born as public-private partnership in 1985 between the Friedrich Ebert Foundation (FFE) - a German political foundation - and the Government of Mozambique to conduct a pilot project focusing on small and medium enterprises as a basis for building a dynamic business sector.

implementation period in order to facilitate program implementation across the country (UNIDO, 2012). This phase of the program was made through the pedagogical university, providing training for teachers of UP, in all its establishments. Thus, the UP is the only HEI in which all teachers, regardless of their teaching areas, have training in entrepreneurship.

In face of these results, the answer to research question 2 is that in the sample only public universities present cooperative processes for the development of entrepreneurial skills of teachers and students. These cooperative efforts correspond to *university networks*, as defined by Chapman et al (2014), since they involve a larger number of institutions - universities, other public institutions and international development agencies- and focus on a broader set of activities organised around a particular issue or goal, in this case, the development of entrepreneurial skills of teachers and students. These two publics match the two dimensions of these kind of networks: i) capacity building and strengthening of the institutional partners (when directed to teachers and including cross-border cooperation); ii) to address substantive development goals (when addressed to students and to local entrepreneurs).

In this case, as concluded by Chapman et al (2014), government and international organisations promote multi-university networks as a mechanism for strengthening higher education while also promoting greater engagement of universities in high-priority national development issues.

Given the above, the following proposition ensues:

P2. In developing countries, public HEI are more prone to develop university networks, including diverse national and international institutions, than private HEI.

Some results of cooperation networks: number of teachers trained and businesses created

The analysis of the data collected about the number of teachers with entrepreneurship training and the number of business created (Table 4) shows that HEI that developed university networks involving public partners (Mozambican government) and international organizations, show higher number of trained teachers. The numbers make evident that collaboration networks represent a key strategy for teacher training in the area of entrepreneurship. These results together with the description of the contents of the collaboration, confirm Chapman et al (2014) conclusions, that cross-border partnerships are promoted as a strategy for assisting universities in raising the quality of their teaching and research. This strategy includes degree programmes, visits and student and academic staff exchange.

Concerning the impact of university networks on business creation, public HEI - which are also those with cooperation networks - tend to present a higher number of businesses created. In this sense results do not contradict the argument that university networks have an impact on business creation. This relation can be explained by the assumption that university networks allow a better preparation of teachers and the existence of more and better learning opportunities which, in turn, affect the start-up activity, as argued by several authors, as Petridou et al (2009) and Kassieh (2010). However, data must be analysed with caution since the causes of this larger number can be result from several other causes, including the larger number of students that received entrepreneurship training in public HEI.

Given the above, results the following proposition:

P3: University networks allows a better preparation of teachers and the existence of more and better learning opportunities which, in turn, affect the start-up activity,

Table 4: Cooperation Network and competence development strategies in entrepreneurship for teachers and students in HEIs with entrepreneurship education

HEI with entrepreneurship education	Sul					Centro			Norte	
	UPma	UEM/ ESNEC	ISPG	UEM/ ESUDER	ISGECOF s	UPt	ISPT	UCMt	UCMn a	ISGECOFn i
Year of the introduction of entrepreneurship education in the curricula	2008	2009	2005	2008	2009	2009	2009	2008	2008	2013
Number of teacher with entrepreneurship training	+15	10	15	4	4	+15	10	10	4	4
Number of teachers received (or in process of) entrepreneurship training under the cooperation agreements	+15	10	16	-	-	+15	10	-	-	-
Number of students who received training in entrepreneurship education (in 2014)	120	214	110	102	N/A	279	N/A	100	100	N/A
Number of companies / businesses created (or in the making) per year (*)	+50	+20	20	+5	+10	+50	5	6	5	0

Source: Interviews

Legend: N/A = not available

(*) The answer to the question “number of business created on average per year for students who have attended entrepreneurship education”, was given in the form of an ordinal variable. Between 1-5; 6-10; 11-20; 20-50; More than 50. In some cases, respondents indicated a precise number.

4. Concluding remarks

Being a recent reality in developing countries, entrepreneurship educating presents several challenges, especially concerning the training of teachers and the quality of teaching processes. To overcome these difficulties national governments are beginning to incorporate in their plans for development policies to promote entrepreneurship education throughout different levels of education. Entrepreneurship education in HEI deserves special attention due to its particular potential to create sustainable and high growth firms. This is also the case of Mozambique where the introduction of entrepreneurship education in HEI dates back only a few years and where cooperation networks are pointed as fundamental for business and entrepreneurship development. In spite of this, results show that this strategy of cooperation networks is present only in public HEI, which tend to present better results concerning the number of teachers with specific training in entrepreneurship and number of businesses created. Institutional co-operation seems to be either still missing in several HEI or not yet thoroughly developed in most private institutions.

This study also shows some promising signs concerning the development of coordinated and global efforts to promote the quality of entrepreneurship education. It also highlights the role of public partners in involving other national and international private organizations in the process. In spite of the fact that most of these initiatives are still in a starting phase and it is not possible at the moment to fully anticipate what will be their final outcome or impact, this study represents a first attempt in this direction.

The above considerations have to consider some limitations of the study that represent further venues for research. First, it does not cover all establishments offering entrepreneurship education. In spite of the fact that the used sample is sufficiently representative to give a real image of entrepreneurship education in Mozambique, to get a complete picture the other establishments offering entrepreneurship education should also be investigated. Second, a deeper analysis of contents and results of the cooperation, including other institutions that are part of the cooperation network in order to assess their commitment as well as the perspective of students/entrepreneurs should also be investigated in order to obtain a triangulation of sources. To fully understand the impact of such networks in the quality of teaching and its outcomes it is required a study of contents and methodologies of entrepreneurship education as well as a follow up of the businesses created. Finally, due to its explorative and case study nature, generalisation of the results must be cautious and are limited by definition. In order to be generalised, the three theoretical propositions resulting from the Mozambique case should be tested in further studies, including a deeper analysis (in the case of P3) and a larger number of developing countries.

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Promoting Entrepreneurship Education through University Networks: A case study in Mozambique

1. Introduction

Entrepreneurship education is a growing concern within political and academic fields (Fiet, 2000; Paço, et al.,2013). A large number of initiatives have been developed worldwide to promote a broad range of entrepreneurial activities within academic institutions (Kirby,2005; Paço et al.,2013; Woollard et al.,2007). This is even truer for developing countries such as those in sub-Saharan Africa, where entrepreneurship is frequently presented as a solution to life and livelihood obstacles for different segments of the population (Elkan,1988; Fick,2002; Naudé and Havenga,2005; Feliciano and Fonseca-Statter,2008; William,2009; Legatum Institute,2011; Naudé,2011; Valá,2012). Entrepreneurship is also envisaged by politicians as the solution for inclusive economic growth and for social inclusion (ECA,2001; Kauffmann,2005; Africa Competitiveness Report,2007; Herrington and Kelley,2012). However, the business landscape of sub-Saharan Africa is very different from the contexts of more developed countries, as it is mainly based on local markets, with underdeveloped regional integration and a high level of informal businesses. Furthermore, in these countries, the business and entrepreneurial environment is particularly adverse because of legal barriers, regulations, insecurity, corruption, inadequate infrastructure and poor financial systems, which inhibit the creation and development of businesses and firms (Gibb, et al.,2012; Legatum Institute,2011; Herrington and Kelley,2012; Valá,2009;Lucky,et al.,2012). Given the unfavourable conditions for entrepreneurship and the weak quality of entrepreneurship, some governments and institutions are beginning to invest in public policies and programmes that promote entrepreneurship and aim at improving business environments (William,2009; Legatum Institute,2011; ECA,2001; Kauffmann,2005; Valá,2009; Ugwushi,2009).

This is also the case for Mozambique. In recent years, the Mozambican Government and other institutions within civil society have promoted several initiatives to support entrepreneurship and ultimately to improve its level of development in the country. Within the framework of the National Agenda to Combat Poverty (Legatum Institute,2011), a programme for poverty reduction and the creation of new jobs, one of the vectors is the promotion of entrepreneurship through the education system with an emphasis on entrepreneurship support at the level of higher education institutions (HEI), including the incubation of new businesses in order to "strengthen the intervention of the network of institutions engaged in [a] development capacity to manage and implement business" (Valá, 2012, p. 212).

In fact, in the current context of globalization and intense competition, cooperative networks between organizations - here defined as a group of organizations who generally seek common goals related to their survival and sustainability - contribute to the strengthening of competitiveness, the creation of new knowledge, developing new skills and organizational learning.

Much of the literature on cooperation networks has pointed out the rationale of cooperating in terms of business motivations. The latest research on cooperation, however, places the focus on the integration of resources through cooperation as an opportunity for learning and not only to minimize costs (Balestrin and Verschoore, 2008; Littler, 1993; Hamel, 1991). This area of literature argues that these relationships have contributed to the emergence of the information age and to the creation of knowledge networks for learning (Dodgson, 1993; Nonaka, et al., 2006; Nonaka and Von Krogh, 2009).

This study considers this issue to be particularly important in the context of developing countries, since networks and cooperation and their role in the integration of resources and/or organizational learning can function as an important strategy for skills development in organizations in terms of benefiting from globalization and the technological developments that affect all organizations, societies and economies. More specifically, this study focuses on Mozambique, where in recent times, within the framework of the National Strategy for Development - which includes a strong investment in human capital development - HEI have developed cooperation agreements for developing teachers and students' skills, thereby addressing issues pertaining to the quality of (education) services, to combat unemployment as a result of lacking competencies and for responding to new market demands.

Based on a literature pertaining to a Mozambican case, this study discusses the issue of cooperation networks as a learning instrument and how they can be used for the development of the entrepreneurial skills of teachers in higher education. More specifically, it seeks to identify how these types of university networks can be decisive for the development of teachers' skills and for the promotion of entrepreneurship in particular within the context of developing countries.

This chapter includes a theoretical discussion and presentation of a case study. The theoretical discussion includes a literature review on the importance of entrepreneurship education in HEI in the context of developing countries and particularly, in Mozambique. It follows the approach of collaborative networks as a tool for promoting learning and developing organizational skills, ending with a discussion on the importance of cooperative networks between educational institutions, and between them and other organizations as a key element for the development of teaching and learning about entrepreneurship. The case presented, in the context of a developing country - Mozambique - is that of Chibuto's School of Business and Entrepreneurship (Escola Superior de Negócios e Empreendedorismo de

Chibuto - ESNEC), one of the five schools of the University Eduardo Mondlane and one of the few HEIs specifically dedicated to entrepreneurship education in Mozambique. Data about this case resulted from participant observation of one of the researchers and data collected between February and June 2013 through an exploratory interview (see appendix) with the director (network manager); documental sources were also consulted.

From a theoretical point of view, this study contributes to a deeper understanding of the theme of entrepreneurship by integrating the specific contexts of developing countries. The theoretical contribution also arises from the intersection of entrepreneurship theory and more specifically, the juncture between entrepreneurship education and the theory of networks and cooperation. In practical terms, this study contributes to the heads of HEIs' understanding of the importance of cooperation between institutions/organizations for the development of skills among both teachers and students.

2. Entrepreneurship education in the higher education institution (HEI): an emerging sector in developing countries

The HEI, in addition to its teaching function, assumes research as a basic element of knowledge creation, innovation and development (Bramwell and Wolfe, 2008). Currently, HEIs face new challenges due to the emergence of the idea that entrepreneurship is the main engine for the creation of economic, social and ethical value, i.e., it is one of the key drivers for economic growth and wealth creation (Shane,2004;Lee and Venkataraman,2006). These circumstances have forced universities and other HEIs to approach the business community, to develop interactions with entrepreneurs at local, regional and national levels, and to make them important sources of knowledge (Cristóbal, 2006; Veciana, 2006; Veciana, 2008). Furthermore, due to changes within the economy and society, reflected by fewer available job opportunities (even for graduates), (Gibb and Hannon, 2007) and the need for self-employment and innovation, entrepreneurship education and entrepreneurial behaviour have become central issues in HEIs. This concern is reflected not only in the growing literature about entrepreneurship education and entrepreneurial universities, but also in public policies and programmes aimed at promoting entrepreneurial behaviour through education.

The theme of entrepreneurship education is not consensual and includes several areas of discussion. One of these discussions focused on the question of whether entrepreneurship can or cannot be taught (Henry et al., 2005; O'Connor, 2012; Robb et al., 2014). Some authors feel that entrepreneurship cannot be taught, because there is a lack of accepted theories or paradigms pertaining to entrepreneurship education (Fiet, 2000; Katz, 2003; Kuratko,2005). Other discussions have focused on what the purpose and content should be of entrepreneurship education (Carrier, 2007; Fayolle, 2007; Fayolle and Gailly, 2013; Dornelas, 2001; Dolabela, 2003); should it only be concerned with the creation of new enterprises and

jobs or should it focus more on behavioural and cognitive processes like creative thinking and problem solving? In recent decades, studies on entrepreneurship have indicated that:

- Entrepreneurship can indeed be taught and learned (Low, 2001; Woollard et al., 2007; Dornelas, 2001), though its success depends on internal (individual) and external (contextual) factors (Davidsson, 2003), and should also be related to the development of entrepreneurial behaviour (Fayolle, 2007; Fayolle and Gailly, 2013; O'Connor, 2012). In this sense, an enterprising person may not necessarily be an entrepreneur and their skills and characteristics may be exercised in different contexts (e.g., in a social context as a family or local community) instead of in the market.
- Globally, entrepreneurship has become a subject of research (Fayolle and Gailly, 2008; Veciana, 2006; Veciana, 2008; Saini, 2001) at many universities through programmes and courses in entrepreneurship (Fiet, 2000; Katz, 2003; Kuratko, 2005), although with little uniformity in content and approach among these programmes and courses. In reference to O'Connor (2012), three different types of entrepreneurship education were distinguished: education 'for', 'through' and 'about' enterprise.
- In recent years, there has been a growing trend in the emergence of professionals and teachers of entrepreneurship (Redford, 2008).

Although research and entrepreneurship education still shows slow progress (Rebecca and Benjamin, 2009; Gibb, 2002) for students in HIE, there is considerable interest pertaining to the creation of new business as a career option (Fayolle, 2007; Lee and Venkataraman, 2006). To meet the challenges of future human resources, HEIs should promote critical and creative thinking (Gibb, 2002). In order to stimulate among students the development of an entrepreneurial culture that can respond to the pressures of globalization. Thus, one of the challenges facing HEIs is the definition of creative teaching methods and approaches for students that will assist them to acquire knowledge, skills and entrepreneurial behaviour through individual constructs and collective practices (Herrington and Kelley, 2012).

Knowledge about the cognitive processes of entrepreneurs allows HEIs to design courses aimed at helping students with entrepreneurial initiatives for improving their decision-making and risk management capabilities (Forbes, 2005). In other words, it is important that the university helps students to understand the world and the lives of entrepreneurs (Gibb, 2005), so that they are aware of the attractiveness of the challenges and opportunities, as well as the uncertainty, complexity and limitations of their activities (Herrington and Kelley, 2012; Rebecca and Benjamin, 2009).

The emphasis in student's context makes evident the importance of context for entrepreneurship. In Freiling (2004), it was argued that "context is important for understanding when, how, and why entrepreneurship happens and who becomes involved"

(p.166). Welter considers what she calls an “omnibus context”, a broad perspective, drawing attention to “who, what, when, where and why” (p.167).

In the context of developing countries, entrepreneurship is frequently viewed as a catalyst for development, the solution for inclusive economic growth and for social inclusion (Feliciano and Statter, 2008; Legatum Institute, 2011; Valá, 2012; ECA, 2001). Despite some authors being sceptic about the link between entrepreneurship and development in the context of developing countries (Naudé, 2011; Naudé and Krugell, 2002; Sautet,2013), most consider entrepreneurship, if not as a panacea for development, at least as a part of the solution (Herrington and Kelley, 2012).

The interest in entrepreneurship in this context is observable mainly within public policies (ECA,2001; Kauffmann,2005; Herrington and Kelley,2012; Robb,et al.,2014), although within academia, this interest has also exhibited growth during the past few decades (Fick,2002;Naudé and Havenga,2005;Abor and Quartey,2010).

However, in developing countries the business conditions are not favourable because of legal barriers, regulations, insecurity, corruption, inadequate infrastructure and poor financial systems that inhibit the development and growth of many companies (William,2009;Legatum Institute,2011; ECA,2001; Kauffmann,2005; Okpara and Wynn,2007; Valá,2009; Rebecca and Benjamin ,2009 ;Ugwushi, 2009;Robb,et al., 2014; Weimer,2012). Furthermore, the quality of entrepreneurship is viewed as being weak. Entrepreneurship is largely represented by micro-small informal businesses with little or no innovation, which compromises its function as an engine for development. Thus, in these countries, some governments are becoming aware of the need for intervention in the business environment (William,2009; Legatum Institute,2011; Valá,2012; Kauffmann,2005; Lucky et al.,2012; Okpara,and Wynn, 2007 ; Rebecca and Benjamin ,2009; Ugwushi, 2009) and that a key issue is to promote a different kind of entrepreneurship: with skilled entrepreneurs, able to innovate and structure a company and its growth. As mentioned in (Robb,et al., 2014), skilled entrepreneurship offers potential rewards for individuals across the socioeconomic spectrum, including vulnerable populations and workers in the informal sector, for whom entrepreneurship signifies potentially more stable income flows, increased profits and more secure employment. For this reason, educational institutions are increasingly seen as tools for the development of an entrepreneurial culture. Some studies (Herrington and Kelley,2012; Robb,et al., 2014; Landzani and Vuuren,2002; Dinis,et al.,2014) show evidence of the growing sub-Saharan African governments' investments in entrepreneurial education and training.

In general and despite of the difficulty of measuring the impact of entrepreneurship education, primarily due to its long-term effects (Dinis,et al.,2014; Fayolle, et al.,2006), several studies have concluded that government policies for developing entrepreneurship within the education system help to instil entrepreneurial values and attitudes in students

(Fayolle, et al.,2006; Greene and Storey,2007; Parker,2007; Stevenson and Lundström,2007). The importance of these policies lies mainly in promoting a strong educational system for the teaching of entrepreneurship, aimed at a constant incentive for delivering innovation (Acs and Szerb,2006).To create these policies (Thomas and Kelley,2012) suggested a list of actions that aim at transforming the educational system of countries that wish to induce entrepreneurial actions in their students. Among the items the authors suggest are: (i) developing national education plans for entrepreneurship; (ii) creating inter-ministerial work groups (education, economy, research and technology, etc.); (iii) creating public or private agencies to stimulate entrepreneurial education; (iv) teaching leadership in educational institutions; (v) reassessing rules and regulations in universities. These elements represent not only an investment in entrepreneurship education, but also a change within HEIs toward more entrepreneurial behaviour. The institutional culture of the higher education institution, together with its practices and policies, play a fundamental role in preparing the student for the employment market (European Commission,2006), which in turn highlighted the importance of a more dynamic and entrepreneurial institutional profile. Furthermore, the principle that the institution is important in the training of students is intrinsically linked to the fact that universities must be prepared to change teaching paradigms toward more global and business-like dynamics, in this way changing the culture of these institutions (Handscombe,et al.,2009).

3. Cooperation networks in HEIs as a tool for promoting entrepreneurial learning and developing organizational skills in developing countries

As discussed in the previous section, in recent times, the development of entrepreneurial competences in universities have appeared as a response to curricular challenges (that require curricular components to be linked to behavioural and attitudinal components valued by the business world), (Pinheiro,et al.,2010), as well as challenges pertaining to business and/or organizational performance (Kirby,2005; Gibb,et al.,2012; Gibb,2002).This requires new working (professional, social and personal) scenarios in a new generation of workers, representing a bonus and differentiating element in human resource management. Thus, it is expected that university graduates show a wide range of technical, professional and behavioural skills, which potentiate individual values that in turn contribute to the quality of firms/organizations (Whitchurch,2008; Araújo and Sastre,2009). Furthermore, nowadays, a range of challenges impact on HEIs such as dwindling financial resources, demographic changes among the student population, the need to attract students and remain engaged with the community, etc.,(Kogan,et al.,2006; Shapiro,2005).

Due to the growing emergence of these new challenges and therefore the need to establish an educational and entrepreneurial culture at the heart of universities, the adoption of *cooperative networks* appears as one possible response to these challenges by reinforcing

resources of a diverse nature. To this end, universities engage in a wide range of networks and relationships with both private and public organizations, which serve as additional sources for collaboration and co-operation (Inzelt, 2004).

In recent times, HEIs, along with other organizations, have felt the need to act jointly and in association, sharing resources that may be material, financial, technological or human. University networks can be a crucial strategy for overcoming the current constraints within HEIs, since they are considered to have a primary importance for the transfer of knowledge between universities, universities and young entrepreneurs and between universities and other actors (Bramwell and Wolfe,2008; Uzzi,1996; Gilbert,et al.,2008; Huggins,et al.,2008). Networks can take on activities that will exceed the capacity of individual institutions and the intention is often to establish a longer-term, more sustainable set of relationships than what is typical in university-to-university partnering arrangements (ADB,2012).

In any type of network, it is assumed that two or more organizations are working together to solve common problems for a given period of interaction (Huggins,2001). In this sense, the notion of the network implicates the notion of cooperation. In fact, the term 'cooperation' has been described by various investigators as a cooperative relationship, strategic cooperation, network or collaboration, as well as the formal or informal communication agreements between two or more organizations that allow the parties involved to obtain mutual benefits from said cooperation (Go and Williams,1993; Lynch,1990; Mak and Go,1995). In reference to Dana,et al.,(2008) it is stated that the result of this process can be designated symbiotic entrepreneurship, which they define as “an enterprising effort by multiple parties, each of which benefits from the joint effort, such that added value is created” (p. 110).

Cooperation networks are formed by a group of actors - people, services, organizations and countries - interacting and maintaining structural relationships, which can be familial, social, communicative, financial, strategic and/or commercial (Teece,1992; Iacobucci,1996). A cooperation network consist of an agreement that establishes relationships that allow the different actors to not only reduce market uncertainty and turbulence, but also create advantages, with the view that the overall benefit is greater than the individual action. Cooperation networks can be established for various reasons. For Teece (1992) and Iacobucci (1996) a partnership concerns agreements in which two or more partners share the commitment for reaching a common objective, joining all their capacities and resources and coordinating their activities to be successful. Cooperation networks serve as a response to globalization and growing market uncertainty and complexity, implying the sharing of knowledge and experiences, the reduction of risks and costs and the development of new technology (Balestrin and Verschoore,2008; Littler,1993; Moreira and Corvelo,2002; Tidd,et al.,2003; Narula,2004; Isoraite,2009). More important in the context of HEIs, cooperation networks can be seen and used as a strategy or opportunity for learning new competences,

i.e., embedding a partner's know-how (Tidd and Izumimoto,2001). In general, cooperation is seen as a means for developing an opportunity to learn new competences and knowledge.

Competence is defined here as the recognized ability to act responsibly, which implies the individual's capacity to mobilize, integrate, transfer knowledge, resources and skills that add economic and social value to the organization (Fleury and Fleury,2004). Organizational competence is defined as the ability to coordinate the distribution of the organization's resources and capacities in an established direction in order to attain its objectives. These two definitions are set in the theory based on organizational competencies, which considers that competencies do not only lie with individuals, but depend on the organizational context and have a social and organic quality that often depends on shared experiences and interactions within the organization, so that this is seen as a complex, structured and dynamic combination of assets, organizational resources and competencies (Freiling,2004).

In Hamel et al.(1989) it is proposed that cooperation networks should be seen as learning opportunities, while several later studies have confirmed this point of view (Gulati,1995; Eisenhardt and Schoonhoven, 1996). Learning networks are formed above all by partner organizations with the aim of learning from each other's knowledge base (Khanna,et al.,1998). This type of cooperation serves as the basis through which organizations intensively interact and gradually absorb knowledge from their partners (Doz, 1996). As opposed to opportunistically stealing knowledge, learning networks allow for specified and encouraged knowledge. The knowledge network allows for the accumulation, storage and sharing of organizational knowledge. Through the interaction between different groups from different cultures, sources of learning and innovation are provided and in this way, the organizational structure and culture will also determine the capacity for absorbing inter-organizational learning (Nonaka,et al.,2006; Nonaka and Krogh,2009).

The most prevalent traditional methods for teaching entrepreneurship include the business plan, case studies, presentation and discussion of case studies and training by entrepreneurs who act as role models for the students (Audet, 2004). However, some authors consider these traditional methods of teaching entrepreneurship as lacking the innovation component (Kirby,2005), as not promoting entrepreneurial skills in students (Henry et al.,2005) and inhibiting the ability of teachers to take risks, to take on new practices and to implement new methodologies extended to new publics and new contexts (Gibb, 2002a), i.e., they do not promote entrepreneurial behaviour (Kirby, 2006).

In Harreveld and Singh (2009) the importance of cooperation between universities and the business sector in terms of creating innovative pedagogical practices that able to develop fundamental capacities in young people for making them successful future citizens is noted. These authors consider that networks between schools/universities and the local community is essential for creating the foundations of an innovative and sustainable society. They focus

on the learning processes, often in the form of cooperation networks and more flexible relationships between the university and other local institutions, corroborating the potential for moving the boundaries between systems of education, training and work, as pointed out by Konkola, et al.(2007), within the pursuit a common goal - enabling young people both to develop work practices and to contribute to community development.

One approach in the field of teaching entrepreneurship is associated with preparing trainers to transmit more solid knowledge about the subject. When speaking about trainers linked to entrepreneurship, not only lecturers should be considered, but also a network of business-people, ex-students or even students with an entrepreneurial profile, all of whom can serve as models in classes (European Commission,2006). The impact of teaching entrepreneurship can be greater when we make a connection between theory and practice, which the above-mentioned network individuals can transmit during the learning process (Kabongo and McCaskey, 2011; Neck and Greene, 2011). Educators responsible for teaching entrepreneurship tend to bring in outside examples to present diverse classes involving theory and practice, in this way improving the learning of entrepreneurship (Kabongo and McCaskey, 2011). In this way, the educator becomes more of a facilitating agent than a lecturer, as they provide students with wider experience in terms of transmitting knowledge about entrepreneurship (Neck and Greene, 2011). This fact is corroborated for the teaching of those students who have entrepreneurship as an intrinsic characteristic, as studies such as (Hytti, et al.,2010) prove that these students are searching for practical knowledge in addition to theoretical knowledge to formulate their business ideas.

Therefore, cooperation networks become a viable and stable strategy for achieving certain objectives that the organization might not be able to reach on its own (Isoraite, 2009). These objectives emerge as a result of the influence of the organization's external environment (the organization's social and economic surroundings), as well as its internal conditions (Todeva and Knoke, 2005; Soares, et al., 2008 ; Vale and Lopes; 2010).

Governments and international organizations alike are promoting multi-university networks as a mechanism for strengthening higher education in low- and middle-income countries, while also promoting the greater engagement of universities in high-priority national development issues (Chapman,et al.,2014). Concerning HEIs in developing countries, these objectives include both the improvement of entrepreneurship education and the development of more entrepreneurial and competent (qualified) institutions. In these countries, where entrepreneurial culture and knowledge is low as it pertains to historical and cultural circumstances, cooperative networks with other national and international institutions can foster the creation and dissemination of entrepreneurship knowledge and competences.

4. The case of Mozambique and the School of Business and Entrepreneurship Chibuto (ESNEC)

Mozambique is a developing country in sub-Saharan Africa, where the theme of entrepreneurship is assuming particular importance.

Mozambique became independent from Portugal in 1975, after which FRELIMO (*Frente de Libertação de Moçambique/ Mozambique Liberation Front*), the independence movement, implemented and led a single-party, socialist regime. During this time, beginning in 1977, Mozambique suffered a devastating civil war, as a result of opposing FRELIMO and RENAMO (*Resistencia Nacional Moçambicana/Mozambican National Resistance*). In 1990, through a new constitution, the country introduced a multiparty democracy and recognized the role of market forces in efficiently allocating resources. The civil war ended in 1992, with an agreement to hold multiparty elections. In 1994, the country held its first multiparty elections, in which FRELIMO was elected as the majority party in parliament. Since then, the country has remained relatively stable as a presidential republic.

Mozambique has experienced sustained economic growth since the end of the war, increased foreign direct investment and the diversification of its private sector (Robb, et al., 2014).

Due to the stable macroeconomic environment and the implementation of programmes and socio-economic reforms, Mozambique recorded an annual average economic GDP growth of 8.1% during the period 1995 to 2012, representing one of the highest in the world. This strong real GDP growth has been influenced by increased foreign and domestic investment, access to finance, technology transfer and gains through investment in education and infrastructure. Since 2000, growth has also been driven by investments in large projects Government of Mozambique (2014). In the past 10 years, the economy has proved to be increasingly robust and resilient to external and internal shocks. Despite the financial and food crisis that had an impact on the national economy, the country continued to show high and stable economic growth. Over the past four years, the average inflation was 7.1% and real GDP grew on average by about 7.0% per year. In 2012, real GDP grew by 7.2% and the GDP per capita was USD608.1 Agriculture is the sector that has most contributed to domestic production. Over the past 10 years, agriculture had an average GDP share of 23.3%. The manufacturing sector is the second largest contributor with a share of 13.5%. Sectors of trade and transport and communication services contributed 10.9% and 10.5%, respectively Government of Mozambique (2014).

While the Mozambican economy has made significant progress in the past 10 years in its reported growth and its efforts to improve the investment climate, it still has a low ranking among international indicators of competitiveness and business environment (see Table 1).

This is related to poor access to finance, the perceived prevalence of corruption, inefficient government bureaucracy, an inadequate infrastructure and the lacking education level of the workforce (Robb,et al., 2014). Additionally, among the population, there is a perceived inferiority of entrepreneurship as a career choice (Robb,et al.,2014).

Table 1: “Ease of Doing Business” rankings in Mozambique.

Ease of doing business rank (among 185 countries)	146
Ease of doing business rank (among 46 African countries)	20
Among 46 African countries	
Starting a business	10
Dealing with constructions permits	29
Getting electricity	40
Registering property	31
Getting credit	22
Protecting investors	5
Paying taxes	17
Trading across borders	16
Enforcing contracts	22
Resolving insolvency	28

Source: World Bank (Adapted from Robb,et al.,2014: 24).

Human development indicators, namely the Human Development Index (HDI) and the Human Development Index Adjusted Gender (IDG), has shown positive trend results in Mozambique primarily from the results achieved in economic growth, access to education, longevity and reduced gender inequality in terms of access to income INE and PNUD in Government of Mozambique (2014). However, this evolution coexists with high levels of informal sectors, high rates of unemployment (especially among the youth) and a large part of the population living in poverty. According to the Population Census 2007, the Mozambican population was estimated at 20.6 million inhabitants, of which nearly 10 million live in poverty, with problems related to food insecurity, low incomes and unemployment. The Mozambican population has been growing at a rate of 2.4%. The National Institute of Statistics' (INE) population projections indicate that by 2035, the final year of implementation of the National Development Strategy, the country will have a population of roughly 41.5 million (Government of Mozambique, 2014).

The poverty rate of the population decreased from 69.4% in 1997 to 54.7% in 2008, but the poverty situation stagnated from 2003 to 2008. In this context, the government is accelerating measures aimed at reducing poverty levels by adopting policies and actions conducive to human capital development, including the improvement of basic social services and increased business initiatives that will contribute to increased production and the

generation of employment and incomes for Mozambicans, particularly for the youth and women.

Meanwhile, domestic small and medium enterprises and locally owned business ventures lag behind and experience low labour productivity. The formal sector employs only 11.1% of the total labour force, 4.1% of which is in the public sector. With a total labour force of 10.1 million, it is estimated that 52.3% of Mozambicans are self-employed informal workers and that 11.5% are family workers that do not receive remunerations. The unemployment rate remains above 21% and is higher among young adults, including university graduates. It is estimated that about 300 000 youth enter the labour market each year (Government of Mozambique,2006).

In recent years, initiatives by the Mozambican Government and other civil society organizations for supporting entrepreneurship has multiplied with the aim of improving the level of development, reducing poverty and enhancing social inclusion. Many of these programmes target vulnerable potential entrepreneurs, aiming at poverty reduction rather than skill acquisition (see Table 2).

Table 2: Programme landscape in Mozambique.

Programme Type	Programme Name
Entrepreneurship Education: Secondary Education Students	DNET - Entrepreneurship Modules in Professional and Technical Schools PIREP - Technical and Vocational Education Reform Project MINED: Entrepreneurship Education:
Entrepreneurship Education: Higher Education Students	UP/ESTEC - Entrepreneurship Courses Empresa Junior /ISCTEM ESNEC - Business Entrepreneurship Higher Ed. School in Chibuto Business Management (UEM)
Entrepreneurship Training: Potential Entrepreneurs	NEC and Management of SMEs Pro-Jovem <i>Fundo de Desenvolvimento</i> ILO <i>Comece o seu Negócio e Desenvolva o seu Negócio</i> INEFP - Professional Training Centres Aga Khan Foundation - EDI Cabo Delgado Internet Solutions- IS ESSOR RIC/ISPM - Research and Incubation Centre ACIANA - Industrial and Agricultural Association GAPI Youth Entrepreneurship Programme IAC - Chimoio Agricultural Institute - CSDC
Entrepreneurship Training: Practicing Entrepreneurs	Institute of the Promotion of SMEs (IPEME) Programme of Cooperation in Science, Technology and Innovation between Finland and Mozambique (STIFIMO) Investment and Financing Company (GAPI) MOZLINK Institute for Export Promotion (IPEX) USAD - Technoserve <i>Negócios Inclusivos</i> Support in Competitiveness and Enterprise Development Project (PACDI)

Source: World Bank in Robb,et al (2014).

The introduction of the Economic Rehabilitation Programme (PRES) in 1987, targeted at demobilizing soldiers when the civil war ended, constituted the first step towards

Mozambique moving away from a centrally planned economy. Seen as a potential catalyst for peace and stability through the support of self-employment initiatives, the programmes were later expanded to target vulnerable groups, particularly women, former refugees and those who had been severely affected by the war (Robb, et al.,2014). Development partners also became increasingly active in entrepreneurship education and training in the late 1990s through two key development institutions: the United Nations Development Programme's (UNDPs) Enterprise Mozambique, the United Nations Industrial Development Organization (UNIDO) and the All India Manufacturers' Organization (AIMO) Industrial Development Advisory Centre (CADI) (Robb, et al., 2014).

Programmes focused on youth, often making job acquisition a priority. In the case of the Entrepreneurship Education Programme, a secondary school programme, an entrepreneurship curricula has been introduced in secondary and professional schools since 2004 (see Dinis et al.,2014), which is aimed at developing an understanding of business principles and to encourage the development of entrepreneurial attitudes and behaviours. Other programmes target higher education students as potential high-growth entrepreneurs.

In the National Development Strategy (2015 to 2035) document Government of Mozambique (2014), under the challenges and opportunities for development, knowledge is pointed out as "crucial to the achievement of socio-economic dynamics that occur in the country [as] it [allows for creating] new capabilities and patterns of economic development. Thus, investments in education and research, allied to science and technology are key factors [for catalysing] the production process and the economic competitiveness of the country" (p. 10). Moreover, included among the challenges for the development of the private sector is market-oriented training. It is not surprising therefore that the first pillar of the National Development Strategy is the "Development of human capital (training oriented to market establishment and expansion of vocational education...)" (p. vi).

The change towards a more entrepreneurial mindset and attitudes are also expressed as one of the fundamental factors for the success of the National Development Strategy: "[The] change [in] mentality is also meant to instil a proactive spirit in Mozambican[s] toward work and especially in the search for efficient and peaceful solutions to the challenges facing the development of [the] country. Assuming a posture of proactivity and creativity in seeking solutions to the country's development means looking at the individual and collective future in a promising and encouraging manner, where Mozambicans can, through work, access development opportunities that arise in the country and thereby improve their welfare" (p.52). To achieve this goal, the government also makes evident the importance of collaborative networks between different actors of the society: "[To develop, a society] depends on ... individual action, as partnerships between citizens, civil society representatives and elected officials, administration and utilities, businesses, as well as unions, all contributing in different ways" (p. 52).

Thus, for both economic and social reasons, entrepreneurship education represents one of the main concerns of the Mozambican Government. One of axes of the National Agenda to Combat Poverty is to promote entrepreneurship through the education system, highlighting the support of entrepreneurship at the level of HEIs (Valá, 2009). This support includes the introduction of entrepreneurship courses and courses related to business creation and local development, in order to both prepare and motivate graduate students to consider entrepreneurship as a possible professional career and to develop entrepreneurial behaviour. One of the main challenges of this agenda is the expansion of the higher education system, as well as the improvement of its quality and internal efficiency. Indeed, reports regarding the results of the National Programme for the Fight Against Poverty in Mozambique makes it evident that the results of the government's financial support, "about 7 million" (including many failures among the projects funded) include gaps concerning the implementation of teaching entrepreneurship in higher education institutions, as well as its objectives and its effectiveness with respect to providing guidance to students to learn to become entrepreneurs, or to be scholars in entrepreneurship. Thus, it is expected that all HEIs, regardless of location and curriculum content, act as incubators for entrepreneurial skills and innovative ideas capable of transforming various resources into wealth. For this reason, in some cases, beyond school education about entrepreneurship, HEIs have also promoted the incubation of new businesses in order to "strengthen the intervention of the network of institutions engaged in the development capacity to manage and implement business" (25, p. 212).

Thus, entrepreneurship education is increasingly prevalent in Mozambique's higher education institutions. In Robb, et al. (2014), three institutions are identified that combined, enrol more than half of the country's higher education students: *Instituto Superior de Ciências e Tecnologia de Moçambique* (Higher Education Institute of Science and Technology of Mozambique), the Pedagogical University and Eduardo Mondlane University. The first of these institutions hosts the *Empresa Junior* programme, which includes workshops and a business plan competition for providing students exposure to entrepreneurship processes. The Pedagogical University, in partnership with UNIDO, designed an entrepreneurship course for training teachers about entrepreneurship in 2009 (for secondary schools). In this university, "entrepreneurship" is both a degree and a cross-course discipline within the curriculum of different degrees. At Eduardo Mondlane University, students take a required entrepreneurship course regardless of their area of study. This latter university also opened an Entrepreneurship Higher Education School, the *Escola Superior de Negócios e Empreendedorismo de Chibuto* (ESNEC), which conducts courses on business management and leadership. This school is the focus of the following paragraphs.

The ESNEC, one of the five schools of the University Eduardo Mondlane, was created by the approval of the University Council at its meeting on 25 November 2008 and its mission is: "To

develop the human resource capacity in the identification of business opportunities and transforming them [into] wealth". This school began its activities on 2 March 2009 and currently has about 790 students and 52 teachers (47 full-time and five part-time) teaching courses in Finance, Management and Leadership, Agro-Business, Retail and Commercial Agriculture.

One of the distinctive aspects of this school, compared to other schools of the University Eduardo Mondlane, as well as other HEIs in Mozambique, is the introduction of "entrepreneurship and business creation" and "business plan" courses in all the degrees taught in the school. Another strength of this school as it relates to entrepreneurship education is the development of business projects, not only with students, but also with local small and medium-sized entrepreneurs, thereby creating a space for interaction with local communities.

The school has been implementing agreements/projects for developing the skills of teachers, students and local entrepreneurs, e.g., SMETOOLKIT, which enables students, teachers and small businesses to use management tools for SMEs. *Business Edge* aims to enable teachers, businessmen and students in organizations, administration and business management, as well as in other short training projects related to hotel services, namely English and computer training. Since 2011²², the school has implemented the NICHE project, which includes the Development of a Sustainable Trade Academy, the aim of which is empower teachers and enable graduate students to develop a business through a business incubator. This incubator intends to serve as "a space where theory and practice can coexist and where different actors in the public and private sector can complement their interests". This is a project whose goals are to develop a sustainable business academy that guides graduates to respond to the expectations of the growth and development of agriculture and trade in the country. Another objective of this project is to allow staff and students to participate in courses of action pertaining to research and sustainable business management in order to obtain the ability to advise the various actors such as associations of producers, traders and financial institutions in the agricultural sector, as well as commercial actors through a model of student-centred teaching. Thus, the NICHE project aims to guarantee results in the form of the improvement of the profile of its graduates, thereby adapting them to market needs.

With the above in mind, interviews were conducted with stakeholders in order to assess its sensitivity to the agribusiness sector in Mozambique, expectations for future graduates of the ESNEC (expected competencies), the possibility of establishing collaboration protocols with companies related to the sector, as well as to receive interns. It also aims to create a regional network of sustainable trade development in cooperation with other actors in the

²² Source: http://esnec.uem.mz/index.php?option=com_content&view=article&id=53:projecto-niche-vai-garantir-academia-de-negocios-sustentaveis-na-esnec-&catid=2:anuncios-e-eventos&Itemid=6

sector. In 2011, ESNEC was able to strengthen its institutional capacity through the training of more than 50 students, 30 teachers and 20 employees on various topics, and has also developed partnerships with other institutions such as BINDZO, ARPONE, Millennium Villages and IIAM. To enforce local and regional experiences, the NICHE project uses the local expertise of research institutes such as Institute of Agricultural Research of Mozambique (IIAM) and HICEP (Hydraulic Chókwe), agricultural enterprises in Chokwe, Xai-Xai and Maputo. However, greater involvement is expected in the coming years, since other service providers will be included through the Business Incubation Centre for the private sector. This project has already enabled the purchase of two vehicles, a minibus with 32 seats and another with eight seats. It has also allowed for the mobilization of bibliographic material for ESNEC courses valued at over 8.000 USD and the purchase of miscellaneous equipment such as computers, printers, cameras and office supplies. ESNEC also recently launched an internal competition for graduate students to submit business plans that, within the framework of cooperation with a bank, may be financed.

These projects contribute to the collaboration of diverse entities, namely: FUNDEC (skills development fund) (a public programme funded by the World Bank), National Institute for Training and Employment, the National Institute of Tourism, the Centre for Academic Development and the Institute of Languages.

As reported in Robb, et al. (2014), a focus group and interviews suggested the lack of qualified teachers in business and entrepreneurship subjects. To overcome this difficulty, ESNEC has established cooperative relationships with several other national and international academic institutions, especially with Portuguese-speaking countries, for the development of teacher skills, namely the School of Hospitality and Tourism Inhambane. (Mozambique), the Polytechnic Institute of Gaza (Mozambique), the Pedagogical University (Mozambique), the University of Saint-Thomas-Gaza (Mozambique), the Federal University of Rio Grande do Norte (Brazil), the University of Goiás (Brazil), the University of Aveiro (Portugal), the University of Beira Interior (Portugal) and the University Van Hall Larenstein (Netherlands). As a result of these cooperative networks, 20 teachers attended or are attending Masters courses and three are attending doctoral programmes in entrepreneurship or management. Twelve of these teachers have already attained a Masters degree and only two failed to complete their studies. Only 11 teachers of the institution did not receive further training or qualifications.

According to the Director of ESNEC (manager of cooperation networks), “cooperation [includes] help or mutual collaboration between two or more parties without profit interests or other [monetary] benefits ... help may be based on agreement[s] between the parties and network[s] are seen as “connections between different institutions to exchange relations of mutual information for use [with] available resources” (extract from interview). This statement emphasizes the non-profit aspect of cooperation found in the content of the cooperation agreements that the school has established. Networks were established in order

to exchange information and knowledge and to potentiate the available resources of the total network. In this sense, the networks are used not to create an immediate profit or market advantage, but to enable the mobility of resources for the specific purpose of improving entrepreneurship education competencies (cooperation in other universities), as well as to promote business knowledge dissemination and innovation (in the case of other collaborative projects).

5. Concluding remarks

In this chapter, the importance of entrepreneurial competencies and entrepreneurial education in developing countries was discussed. Furthermore, collaborative networks were presented as effective instruments for promoting the entrepreneurial competencies of both HEI students and teachers. The primary argument presented in this work is that, especially in countries with major weaknesses concerning entrepreneurial culture and human capital, collaborative partnerships with other international and national universities and organizations are fundamental to the generation and dissemination of knowledge and an entrepreneurial mindset. In fact, the literature review showed that university networks are considered one of the most important vehicles of knowledge transfer between universities and between universities, young entrepreneurs and other economic actors.

The case of Mozambique was presented, a country where the national strategy for development is heavily centred in the human capital development and where entrepreneurship education plays a fundamental role. In fact, in its public communications, the Mozambican Government emphasize the importance of collaboration between the different sectors of society and cooperation with international organizations in order to promote learning and change attitudes. In line with this, since the 1990s, governments have strongly invested in entrepreneurship education and training with the collaboration of other national and international organizations. Investment in entrepreneurship education in HEIs represents a central issue of this strategy.

This study focused in the ESNEC case, which represents one of the more important and recent developments of entrepreneurship education in Mozambique. This case showed how collaborative university networks have been used as tools for the development of the entrepreneurial competencies of both teachers and students and as a vehicle for knowledge dissemination within the community. More specifically, cooperation with other universities is being used to promote the mobility of resources for the specific purpose of improving teachers' entrepreneurship knowledge and competencies; other collaborative projects have been implemented in order to promote innovation and the dissemination of business knowledge among students and entrepreneurs in the surrounding community.

How far these investments in entrepreneurship education, especially those in HEIs have been effective as a strategy for development is beyond the scope of this work; however, in the

medium-long term, this will be an important issue to address within the continuity of the debate about whether entrepreneurship can or cannot be taught and learned.

Finally, it must be noted, as mentioned by Robb, et al. (2014), that there are two important dimensions that affect successful entrepreneurship: the human capital of the individual and the business environment in which individuals operate. In this sense, entrepreneurs' ability to succeed based on their own skills and abilities is moderated by the context in which they operate. In spite of the fact that there is some cause for optimism in Mozambique, the challenges for achieving a vibrant entrepreneurial economy in Mozambique are significant. Entrepreneurship education can only address some of these challenges (Robb, et al., 2014). Despite the increasing importance given to entrepreneurship education, networks and cooperation, Mozambique has many shortcomings in terms of infrastructure, human capital, financial capital, organizational structure, technological development and also in terms of organizational development agreements, often associated with lack of confidence, lack of fidelity and opportunistic behaviour, i.e., the lack of an organizational culture. All of these constraints have an impact on entrepreneurial outcomes. Therefore, the improvement of organizational culture in Mozambique should also be seen as one of the contributions or earnings resulting from cooperative networks. In reference to Franco and Ferreira (2007), it was argued that "learning organisations require a culture where all individuals, without exception, share organizational values. A climate of trust and respect between [all acceptable] stakeholders and aspects like change/adaptation, innovation and creativity are factors to take into consideration" (p.1729). On the other hand, issues related to access to and the cost of financial capital, as well as integration into markets through market information, regulatory regimes and infrastructure constraints are beyond the scope of what any single programme of entrepreneurship education can address; however, these programmes will clearly benefit from greater attention to the links between improvements in knowledge and skills and other enterprise development mechanisms, including access to funding and market intelligence. In these contexts, networks and HEIs play a fundamental role.

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Appendix

Estrutura da entrevista		
Objetivo Geral	Objetivo Específico	Descrição das questões
1. Compreender a eficácia das estratégias de redes e cooperação usadas para o desenvolvimento de competência dos docentes na ESNEC	1.1. Compreender a percepção/conceito subjetivo do diretor (gestor das redes e cooperação) sobre redes e, sobre a cooperação organizacional.	a) Na sua opinião o que é cooperação? b) Na sua opinião o que é uma rede?
	1.2. Compreender se para o desenvolvimento de competências, a ESNEC tem acordos estratégicos com alguma instituição.	c) Atualmente quantos acordos/ Projetos de desenvolvimento de competências para docentes e estudantes a ESNEC tem? Com quem? d) Quais são os objetivos dos projectos de desenvolvimento de competências? e) A ESNEC tem outras instituições parceiras em desenvolvimento de competências?
	1.3. Compreender se a ESNEC tem uma rede universitária para o desenvolvimento de competências dos seus quadros.	f) Quantas universidades parceiras cooperam com a ESNEC em desenvolvimento de competências?
2. Compreender se na promoção de redes e cooperação existem fatores que determinam o desenvolvimento de competências dos quadros	2.1. Compreender se os quadros da ESNEC têm vontade de aprender nas instituições com quem têm acordos de cooperação	g) Atualmente qual é o nº de docentes/candidatos a desenvolver competências nas instituições com acordos de cooperação. h) Atualmente qual é o nº de docentes em processo de desenvolvimento de competências? i) Qual é o nº de docentes sem competência e que não se candidataram a desenvolver competências nessas instituições.
	2.2. Compreender se os quadros da ESNEC têm capacidade de aprender nas instituições com acordos de cooperação.	j) Qual é o nível de formação exigida pelas universidades/instituições parceiras? k) Qual é o nº de docentes com nível de idioma (inglês) exigido pelas universidades/instituições parceiras?
	2.3. Compreender se os quadros da ESNEC que participam em programas de desenvolvimento de competências têm capacidade de absorção.	l) Qual é o nº de docentes que terminou a formação com sucesso? 2) Qual é o nº de docentes que terminou a formação sem sucesso?

Chapter 4 - Entrepreneurship education in Higher Education Institutions (HEI) in Mozambique: Impact on students and factors affecting its effectiveness

Entrepreneurship education in Higher Education Institutions (HEIs) in Mozambique: Impact on students and factors affecting its effectiveness

Abstract

Based on the case of Mozambique, this study intends to assess the impact of HEIs entrepreneurship education on students and to understand what factors determine its (in) effectiveness. More specifically, it aims to understand the influence of gender, family history, financial resources and networks in the outcomes of entrepreneurship education, in terms of entrepreneurial attitudes, perceptions and psychological characteristics and also how those factors and these attitudes/perceptions/characteristics affect entrepreneurial Intentions. After a literature review focused on entrepreneurship education and on the determinants of entrepreneurial intention, attitudes and behaviours, the empirical study is presented. It includes a sample of students from 10 HEIs establishments, selected from a universe of 34, with entrepreneurship education. Data collection was done through questionnaires to HEIs' students (n=721) of the second, third and fourth grade, including two groups: one group that attended an entrepreneurship course (n=572); a second group (n=149), considered as a control group, that never had entrepreneurship education. Statistical analysis, including tests of differences (t-test, Qui-square test and ANOVA) and multiple linear regressions were performed. Results showed that i) personal attitude and perceived behavioural control influence entrepreneurial intentions; ii) entrepreneurship education has a positive influence on perceived behavioural control. Concerning students with entrepreneurship education results showed that iii) there are significant differences in terms of student's entrepreneurial attitudes, perceptions and intentions between schools. iv) gender, family entrepreneurial antecedents and entrepreneurial networks affect student's entrepreneurial attitudes, perceptions and intentions.

Keywords: Entrepreneurship education; Higher Education Institutions; Entrepreneurial Intention; developing countries; Mozambique.

1. Introduction

Entrepreneurship is increasingly seen as a key vector for development and a viable alternative to dependent employment and unemployment (Virick et al., 2015). Thus, it is a growing concern in the academic field and in the political arena, especially in developing countries, such as those in Sub-Saharan Africa, where entrepreneurship is often presented as the solution for inclusive economic growth. Therefore, some governments and institutions are beginning to invest in public policies and programs to promote entrepreneurship including entrepreneurship education.

In the context of developing countries (sub-Saharan Africa), where entrepreneurship is seen as a vector of development, HEIs are increasingly seen as tools for the development of entrepreneurial culture. The HEIs perform direct interactions with entrepreneurs at regional and national levels, which make them important sources of knowledge (Cristóbal, 2006). So the challenge of HEIs is the teaching of entrepreneurship as a career (business creation / companies) because of the few facilities and employment opportunities, something which unacceptable for recent graduates with entrepreneurial intentions (Gibb and Hannon, 2007). To answer this challenge, HEIs must develop a critical thinking that allows students to develop an entrepreneurial culture help and institutions to reflect on the outcomes of entrepreneurship education in terms of (acquisition of knowledge, and skills and the development of entrepreneurial attitudes, intentions and behaviours (Frank and Luthje, 2004; Fayolle and Klandt, 2006 ^a; Menzies and Tatroff, 2006; Fayolle and Gailly, 2008; Roudaki 2009; Fayolle and Gailly, 2013). Thus, the literature considers that HEIs with entrepreneurship education programs positively influence the entrepreneurial attitudes, intentions and behaviours of students (Laguador, 2013; Zahra et al., 2012; Fayolle and Gailly, 2013; Roudaki, 2009).

In Mozambique, under the National Agenda to Combat Poverty, a program for poverty reduction and creation of new jobs, one of the vectors is the promotion of entrepreneurship through the education system with an emphasis in Higher Education Institutions (HEI) because of their potential to promote innovative entrepreneurship (PARPA II, 2006-2009:108).

However, most studies about entrepreneurship education in HEIs were performed in developed countries and, if in entrepreneurial phenomena, as argued by several authors (Boettke and Coyne, 2009; and Welter, 2011), “context matters”, a different context can represent a different configuration of factors and processes. According to Welter (2011), context simultaneously provides individuals with entrepreneurial opportunities and sets boundaries for their actions, that is, individuals may experience it as asset and liability. Considering the importance that entrepreneurship education is assuming in developing countries, and the lack of studies defining which factors affect the effectiveness of entrepreneurship education in these contexts, this study, based on the case of Mozambique, intends to understand what are the factors that determine the (in) effectiveness of entrepreneurship education in HEIs. More specifically, it aims to understand the influence of gender, family history, preference for different types of financial resources and networks in the development of entrepreneurial characteristics, attitudes and intentions of higher education students who attended an entrepreneurship course.

After this introduction, this paper is structured as follows: in the next section a brief literature review on entrepreneurship education and student’s entrepreneurial intentions is made. Attitudes, characteristics and factors that can affect these aspects are presented, as well as the research hypotheses and research models. The third section presents the research methodology and the fourth the results. Finally, some concluding remarks are presented.

2. Literature revision and hypotheses derivation

In the last years, entrepreneurship education in HEIs has expanded throughout most of the world (Gorman et al., 1997; Peterman and Kennedy, 2003; Shane, 2004; Fayolle et al., 2006). The expansion of this phenomena is related with the conviction that there is a positive link between education and entrepreneurship. According to Garavan and Barra (1994), the main aims of entrepreneurship education and training programmes are: i) to get useful knowledge of entrepreneurship; ii) to acquire skills in the use of techniques, in the analysis of business atmospheres, and in the synthesis of action plans; iii) to identify and stimulate entrepreneurial skills; iv) to develop empathy and support for all aspects of entrepreneurship; v) to develop attitudes towards change and uncertainty; and vi) to encourage new start-ups. Authors like Gibb (2002) Solomon (2007) and Oyugi (2014) argue that entrepreneurship curricula are critical factors to provide better business training and learning models, consequently affecting entrepreneurial intentions. In fact, several authors showed that entrepreneurship education plays a positive role in student entrepreneurial intentions (Liñan and Chen, 2009; Nabi et al., 2010; Rengiah and Sentosa, 2015). In spite of this, some studies (Walt and Walt, 2008; Ebewo and Shambare, 2012; Makgosa and Ongori, 2012) raise doubts about this relationship and study the factors that can affect it. One question that motivated researches is why some students choose to be entrepreneurs and others not (Turker and Selcuk, 2009). In order to answer this question many authors have studied the link between students' perceptions and entrepreneurial intentions (Veciana et al., 2005; Makgosa and Ongori, 2012; Rengiah and Sentosa, 2015) as factors that influence entrepreneurial activity (Walt and Walt, 2008; Ebewo and Shambare, 2012; Makgosa and Ongori, 2012). The entrepreneurial intention approach is supported by Ajzen's (1991, 2008) *Theory of Planned Behaviour* which considers that intentions are determined by attitudes and these, in turn, are affected by individual and contextual variables (indirect predictors of intent). This approach has been used by several authors to study entrepreneurial attitudes, intentions and behaviours of students (Bird, 1988; Liñan and Chen, 2009; Roudaki 2009; Zahra et al., 2012; Rodrigues et al., 2012; Dinis et al., 2013; Fayolle and Gailly, 2013; Laguador, 2013; Yurtkoru et al., 2014; EC, 2015). Based on this model, it is possible to assume that the students' entrepreneurial behaviour results from entrepreneurial intention and from the decision to develop a business activity, which in turn depend on *entrepreneurial attitude* (attitude towards entrepreneurial behaviour); *perceived behavioural control* (individual's perceptions of his/her ability to perform a given behaviour) and, as a contextual variable, *subjective norms* (how the entrepreneurs realizes how social pressures influence their entrepreneurial behaviour) (Ajzen, 2008; Cruz et al., 2009). For the purpose of this study only individual aspects are considered. Thus the contextual variable was excluded and the following hypotheses is derived:

H1: Perceptions and attitudes affect entrepreneurial intentions

This can be decomposed in the following hypotheses:

H1a - Perceived behavioural control positively influences students Entrepreneurial Intentions;

H1b - Personal attitude positively influences students Entrepreneurial Intentions.

In addition, several authors focus on *individual psychological characteristics* responsible for the formation of entrepreneurial intention. These factors include:

- *Internal locus of control* - the degree to which individuals believe that their achievements are dependent on their own behaviour, ability and actions rather than luck or the efforts of others (Beverland and Lockshin, 2001; Kuip and Verheul, 2003; Dinis et al., 2013). It leads to a positive entrepreneurial attitude and most students who receive entrepreneurial formation may develop a higher level of control and self-efficiency (Robinson et al., 1991);
- *Propensity for risk-taking* - acceptance of risk when it involves an activity and is related to the probability of success of any activity being less than 100 percent (Brockhaus, 1980, Kuip and Verheul, 2003);
- *Need for achievement* - based on the expectations of doing something better or faster than others or better than the person's earlier accomplishments (McClelland, 1965). McClelland (1961) introduced this concept and argued that individuals with a high level of need for achievement show higher willingness to engage in entrepreneurial activities, because it refers to the desire for freedom and independence to self-confidence. Several studies show the existence of a connection between the need for achievement and to both business development (McClelland, 1961; Davidsson, 1989) and students' entrepreneurial intentions (Florin et al., 2007);
- *Tolerance for ambiguity* - matches the way individuals perceive ambiguous situations and organize information (Koh, 1996; Mitton, 1989). Whetten et al. (2000) found out that managers with a high tolerance for ambiguity are more entrepreneurial in their actions, and other authors like Ogunleye and Osagu (2014) argued that for those with low tolerance for ambiguity, there is an aversive reaction to ambiguous situations because of lack of information. This makes it difficult to assess risk and to correctly make a decision;
- *Innovativeness* - perceives and acts in an original way in new business activities (Robinson et al., 1991; Hormiga et al., 2013). It positively contributes to influence students' entrepreneurial intention (Florin et al., 2007).

Thus the following hypothesis is:

H2: *The individual psychological characteristics of the students affect their entrepreneurial intentions*

This can be decomposed in the following hypotheses:

H2a- Locus of control positively influences students Entrepreneurial Intentions;

H2b- Propensity to take risks positively influences students Entrepreneurial Intentions;

H2c- Need of achievement positively influences students Entrepreneurial Intentions;

H2d- Tolerance to ambiguity positively influences students Entrepreneurial Intentions;

H2e- Innovativeness positively influences students Entrepreneurial Intentions;

Furthermore, as a corollary of the previous hypotheses, it is possible to assume that students' entrepreneurial perceptions, attitudes and characteristics are influenced by entrepreneurship education, resulting the following hypothesis:

H3: *Entrepreneurship education has a significantly positive influence on the student's entrepreneurial perceptions, attitudes, intentions and characteristics*

The literature also shows that to answer the question "why some students choose to be entrepreneurs and others not" other authors focus on the student's **personal factors** affecting their entrepreneurial characteristics, attitudes, perceptions and intentions (Danes et al.2008; Olmos and Castillo,2008; Matlay, 2009; Romani et al., 2009; Linãn et al.,2011; Fritsch, et al.,2012; Hatak et al.,2015).

H4: *Personal factors affect entrepreneurial characteristics, perceptions, attitudes and intentions*

For a long time men had an important role in the growth of entrepreneurship, but today women play an important role in entrepreneurship, representing 33.3% in 1996, and 41.6% in 2009 (Fritsch, et al., 2012). However, several studies show that *gender* is one of the personal factors that still affects student's entrepreneurial attitudes, intentions and behaviours (Olmos and Castillo, 2008; Freire, 2011; Hatak et al., 2015; Paço, et al., 2015). Therefore the following hypothesis is proposed (H5):

H4a- Female students present less entrepreneurial psychological characteristics, perceptions, attitudes and intentions than male students.

Family antecedents are factors that influence entrepreneurial attitudes, intentions and behaviours of individuals (Liñán and Chen, 2006- 2009; Fayolle and Gailly, 2008; Olmos and Castillo, 2008; Nasurdin et al., 2009). Thus, as showed by several authors, students with close family members who have been involved in entrepreneurial activities can be more propense to develop entrepreneurial characteristics and intentions (Fayolle and Gailly, 2008; Olmos and Castillo, 2008; Nasurdin et al., 2009; Liñán and Chen 2006, 2009). Thus the following hypothesis ensues:

H4b - Entrepreneurial family antecedents positively influence the students' entrepreneurial psychological characteristics, attitudes, perceptions and intentions.

Access to *financial resources* is presented by several authors as a critical factor to initiate an entrepreneurial behaviour (Echecopar et al., 2011; Norbert, et al., 2014; Schott et al., 2015). Furthermore, some studies show that *Financial resources* are factors that determine the students' entrepreneurial intention and behaviours and also reveal that the preferred financial resources for start-ups are particularly his/her own, or come from family, friends financial resources and banks (Echecopar et al., 2011; O'Connor, 2013; Schott et al., 2015). However it is not discussed if the use, or potential use, of different financial sources is related with different psychological characteristics, attitudes or entrepreneurial intentions. Thus, the following hypothesis is raised:

H4c - The use, or predisposition to use, different financial resources is related with the student's different entrepreneurial psychological characteristics, perceptions, attitudes and intentions.

Personal networks are also factors that influence business creation and development, as stated by several authors like Johannisson (1988). In the academic context, the influence of networks in students' attitudes and behaviours was also object of study in several works (Liñán et al., 2011; Karali, 2013; Norbert, et al., 2014) that states that networks influence the attitudes and the entrepreneurial behaviour of students. Based on that the study assumes the following hypothesis:

H4d - The student's personal entrepreneurial networks positively influence their entrepreneurial psychological characteristics, perceptions, attitudes and intentions.

Thus, the study suggests the following conceptual model (Fig. 1).

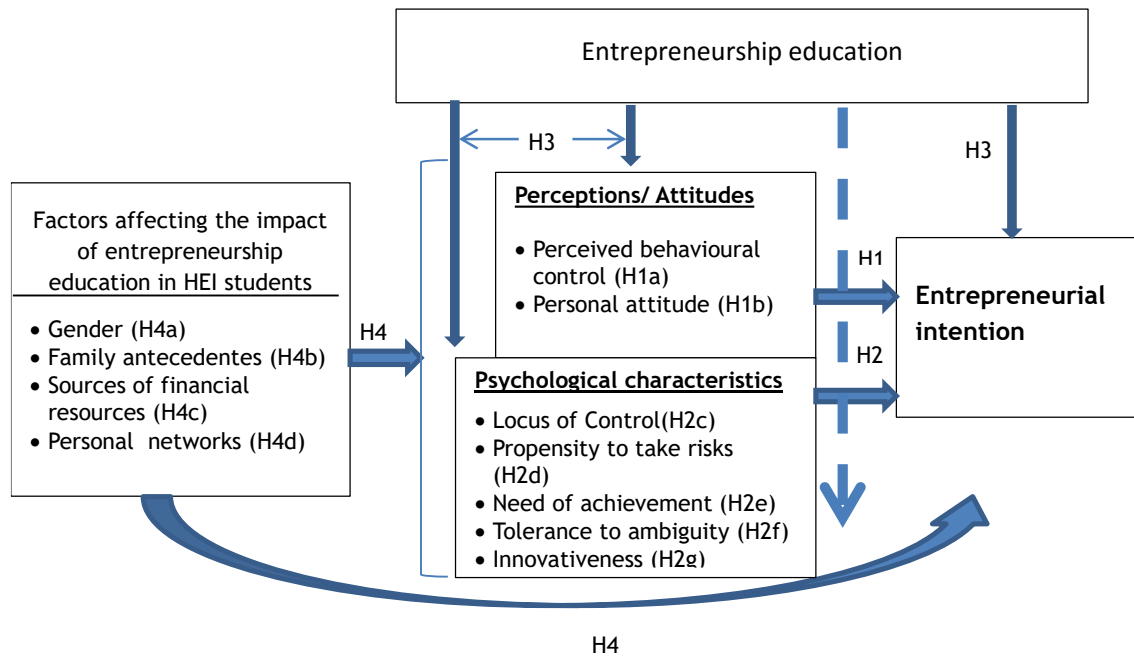


Fig.1. Conceptual Model

3. Methodology

The empirical study was made using a sample of 10 HEI establishments selected from a universe of 34 with entrepreneurship education before 2014, distributed between the northern, central and southern Mozambique. Data collection was done through questionnaires to HEIs' students (n=721) who attended 2nd, 3rd and 4th grades of higher education, including two groups: one group that attended an entrepreneurship course (n=572); and the other group (n=149) considered as a control group-that never had entrepreneurship education. The comparison between the two groups intends to assess the impact of entrepreneurship education in terms of entrepreneurial perceptions, attitudes, psychological characteristics, and intentions.

The sampling strategy used to select students in each establishment was the *convenience sampling* (Marôco, 2011:10-11), since selected students were those that were in the school in the moment of data collection. Concerning students with entrepreneurship education, the sample included several degrees. Concerning students who did not attend an entrepreneurship education it includes students from management and accounting degrees.

Data collection tools (instrument) used were based on scientifically validated questionnaires²³ (in appendix), which involved measurement, based on a Likert 5-point scale of the following psychological constructs: *Locus of Control* (8 items), *propensity to take risks* (6 items), *need of achievement* (6 items), *tolerance to ambiguity* (6 items), *Innovativeness* (5 items), *perceived behavioural control* (6 items), *personal attitude* (5 items), *entrepreneurial Intention* (6 items). The tools also includes variables of gender (male/female), the existence of entrepreneurs in the family (yes/no), entrepreneurial networks (personally know entrepreneurs) (Yes / No), and preferential financial funding sources (Own / Bank / Family / Venture Capital / friends)(see questionnaire in appendix 1). Questionnaires were administered in person in the students' classrooms. This option was considered the best because many of the students do not have an e-mail account and even if they had, the internet is not of easy access in Mozambique. Furthermore, the questions could need proper explanations in person. The administration of questionnaires to students who participate in an entrepreneurship course occurred during the period 2014 and 2015 and included students from several degrees (visual arts, engineering, agro-business, management, accounting, geography, etc.).The administration of questionnaires to students who did not participate in an entrepreneurship course occurred during the period 2015 Data analysis was made with SPSS software (IBM-SPSS Statistics-22). Analysis includes descriptive analysis of the samples; Cronbach's alpha coefficient to analyse the internal consistency of items; test of differences (t-tests, qui-square test) in order to compare the two groups of students and the two personal factors' situations; and ANOVA in order to analyse differences between schools.

Cronbach's alpha coefficient was used to assess the reliability of the constructs. This item range between 0 and 1 and values greater than 0.9 are considered very good, values between 0.7 and 0.9 are good, values between 0.6 and 0.7 are reasonable and less than 0.6 are weak or inadmissible (Maroco, 2011).

T-test or Student's t test (for independent samples), according to Maroco (2011) tests whether the averages of two populations are significantly different. It is used to compare the behaviour of a continuous variable in two independent groups (Fortin, 2009).

The chi-square test compares independent groups for a particular characteristic of qualitative or dichotomous variable (Maroco, 2011; Pestana and Gageiro, 2005).

ANOVA was used to compare the means of more than two samples. It compares the differences between means, determines whether the test samples are drawn from the same population and allows analyzing data from two or more groups. It compares the variance within each group with the variance between groups (Fortin, 2009).

²³The variables constructs have been validated in similar studies applied by other authors (Ajzen, 1990; Turker and Selcuk,2008; Liñán,2004; Liñán,2009; Liñán and Chen, 2009;Liñán et al.,2010; Paço et al.,2011; Rodrigues et al.,2012; Dinis et al.,2013; Fayolle and Gailly,2013).

Multiple linear regressions were used in order to assess the influence of some variables/constructs (independent variables) on other entrepreneurial constructs (dependent variables). To evaluate the models' quality of fit, i.e., the level of explained variability in the model, the coefficient of determination is used (R^2 or R_a^{224}). According to Maroco (2011), the coefficient of determination R^2 is a measure of the effect of the independent variable (s) on the dependent variable, and has been one of the adjustments of statistics' quality most commonly used in linear regression. In social sciences when $R^2 = 0$ the model does not fit the data; when $R^2 = 0,5$ the adjusted model is usually considered acceptable, however, as stressed by Maroco (2011: 683) the R^2 value that is considered to produce an appropriate adjustment is subjective. For evaluating the importance and significance of each of the independent variables the standardized Beta coefficients were used. The interpretation of the statistical tests was made based on the significance level of $\alpha = 0.05$ (for a $\alpha \leq 0,05$. H_0 is rejected) with a 95% confidence interval.

In table 1 it is presented the correspondence between the statistical analysis, the variables included and the aim of such analysis²⁵.

Table 1 - Types of statistical analysis, variables, data and aims of the analysis

Statistical procedure/ analysis	Variables included	Data set	Aim of the analysis
Descriptive analysis, T-test and Qui square test	<ul style="list-style-type: none"> • Age • Gender 	The two groups of students	Characterization of the samples Compare differences between the two samples
Cronbach's alpha Variables transformation	<ul style="list-style-type: none"> • Variables related with entrepreneurial characteristics, perceptions, attitudes and intentions 	The two groups of students	Assess about internal reability of variables and create constructs
Multiple linear regression	<p><i>Independent variables:</i></p> <p><u>Perceptions/attitudes</u></p> <ul style="list-style-type: none"> • Perceived behavioural control • Personal attitude <p><i>Dependent variable</i></p> <ul style="list-style-type: none"> • <u>Entrepreneurial intentions</u> 	The two groups of students	Test hypothesis 1

²⁴The adjusted R-squared (R_a^2) is a modified version of R-squared (R^2) that has been adjusted for the number of predictors in the model than would be expected by chance. The adjusted R-squared increases only if the new term improves the model more The adjusted R_a^2 is always lower than R^2 .

²⁵Since internal reability of the psychological characteristics was not admissible, the intended analysis concerning these constructs (in grey in the table) was not performed.

Multiple linear regression	<p>Independent variables:</p> <p><u>Psychological characteristics:</u></p> <ul style="list-style-type: none"> • Locus of control • Propensity to take risks • Need of achievement • Tolerance to ambiguity • Innovatiness <p>Dependent variable</p> <ul style="list-style-type: none"> • <u>Entrepreneurial intentions</u> 	The two groups of students	Test hypothesis 2
T-test	<ul style="list-style-type: none"> • <u>Entrepreneurial intentions</u> <p><u>Perceptions/attitudes</u></p> <ul style="list-style-type: none"> • Perceived behavioural control • Personal attitude 	The two groups of students	Test hypothesis 3
T-test	<p><u>Psychological factors</u></p> <ul style="list-style-type: none"> • Locus of control • Propensity to take risks • Need of achievement • Tolerance to ambiguity • Innovatiness 	The two groups of students	Test hypothesis 3
T-test and ANOVA	<p><u>Entrepreneurial intentions</u></p> <p><u>Perceptions/attitudes</u></p> <ul style="list-style-type: none"> • Perceived behavioural control • Personal attitude 	Students with entrepreneurship education Grouped by schools	Test hypothesis 3
Multiple linear regressions (eight regressions)	<p>Independent variables</p> <p><u>Factors affecting the impact of entrepreneurship education</u></p> <ul style="list-style-type: none"> • Age • Gender • Family antecedents • Personal networks <p>Dependent variables</p> <p>R1) <u>Entrepreneurial intentions</u></p> <p><u>Psychological factors:</u></p> <p>R2) Locus of control R3) Propensity to take risks R4) Need of achievement R5) Tolerance to ambiguity R6) Innovatiness</p> <p><u>Perceptions/attitudes</u></p> <p>R7) Perceived behavioural control R8) Personal attitude</p>	Students with entrepreneurship education	Test hypothesis 4
Descriptive analysis and T-test	<p><u>Entrepreneurial intentions</u></p> <p><u>Perceptions/attitudes</u></p> <ul style="list-style-type: none"> • Perceived behavioural control • Personal attitude 	Students with Entrepreneurship education Grouped by	Test hypothesis 4
		<ul style="list-style-type: none"> • Gender • Family antecedents • Sources of financial resources • Personal networks 	

4. Results and discussion

4.1. Characterization of the sample

The characterization of the two samples of students (students who attended and who did not attend an entrepreneurship course) is based on measures of central tendency (mean, median, standard deviation and percentile) of the ages and gender of respondents. To check whether there are significant differences between the two samples concerning these two items, differences' tests were performed: t-test in the case of age (continuous variable) and the chi-square test in the case of gender (dichotomous variable).

Concerning student's age, the characterization of the samples and results of t-test are presented in tables 2 and 3. Results show that students that participated in an entrepreneurship course are statistically significantly older (26.68 ± 6.278) than students that did not participated (22.42 ± 5.050), $t(281,66) = -8.673$, $p = 0.000$

Table 2.Descriptive statistics for age

Participated in an Entrepreneurship course		No	Yes
N	Valid Missing	149 0	562 10
	Mean	22,42	26,68
	Median	21,00	25,00
	Standard deviation	5,050	6,278
Percentils	25	19,00	22,00
	50	21,00	25,00
	75	23,00	30,00

Table 3.Age: T-test for independ samples

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	Z	Sig.	t	df	Sig. (2 tailed)	MeanDifference	Std. Error Difference	95% Confidence interval of the Difference	
								Lower	Upper
Equalvarian cesassumed	18,128	,000	-7,651	709	,000	-4,260	,557	-5,353	-3,167
Equalvarian cesnotassumed			-8,673	281,664	,000	-4,260	,491	-5,227	-3,293

The distribution of gender in the two samples of students is presented in table 4. Results show that in the group of students that atended an entrepreneurship course the number of male students (50,8%) is similar of female students (49,2%), meanwhile in the group that did not attended an entrepreneurship course, the the distribution is not as balanced. In spite of this, the qui-square test (see table 5) shows that for a level of significance $\alpha=0,05$ there are no statistically significantly differences in gender distribution in the two samples of students ($X^2=2.902$, $p = 0.088$).

Table 4: Cross table: distribution of gender in the two samples

		Participation in entrepreneurship course		Total
		No	Yes	
Gender	Count	64	288	352
	Expected count	73,3	278,7	352,0
	% within gender	18,2%	81,8%	100,0%
	Male			
	% within participation in an entrepreneurship course	43,0%	50,8%	49,2%
	% within Total	8,9%	40,2%	49,2%
	Standardized error	-1,1	,6	
	Count	85	279	364
	Expected count	75,7	288,3	364,0
	% within gender	23,4%	76,6%	100,0%
	Female			
	% within participation in an entrepreneurship course	57,0%	49,2%	50,8%
% within Total	11,9%	39,0%	50,8%	
Standardized error	1,1	-,5		
Total	Count	149	567	716
	Expected count	149,0	567,0	716,0
	% within gender	20,8%	79,2%	100,0%
	% within participation in an entrepreneurship course	100,0%	100,0%	100,0%
	% within Total	20,8%	79,2%	100,0%

Table 5. Qui-squaretest

	Value	df	A sympt Significance (2-sided)	ExactSig (2-sided)	ExactSig (1-sided)
PearsonQui-squared	2,902 ^a	1	,088		
ContinuityCorrection ^b	2,597	1	,107		
Likelihood Ratio	2,911	1	,088		
Fisher'sExactTest				,098	,053
Linear-by-linear Association	2,898	1	,089		
N ofValid Cases	716				

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 73,25.

b. Computed only for a 2x2 table

4.2. Entrepreneurial characteristics, perceptions, attitudes and intentions

In order to build the constructs of entrepreneurial characteristics (locus of control, propensity to take risks, need of achievement, tolerance to ambiguity and innovativeness) perceptions (perceived behavioural control), attitudes (personal attitude) and intentions²⁶, the internal consistency of items that constitute each construct was analysed through Cronbach's alpha coefficient. For all psychological constructs this indicator was lower than 0,6²⁷ and since it was not possible to proceed with these constructs they were eliminated from the initial research model (and consequently also hypothesis 2 and part of hypothesis 3 and 4). The constructs of entrepreneurial perceptions, attitudes and intentions showed an acceptable internal consistency with values ranging from 0.6 to 0.8 (see table 6).

²⁶The answer of some variables were reverted, those that correspond to questions in reverse meaning of the constructs that intended to measure (in bold in the questionnaire in appendix 1).

²⁷Even after the elimination of some variables to a minimum of 5.

Table 6 - Cronbach's alpha

Variable	Cronbach's alpha	Cronbach's alpha based on standard items	N items
Propensity to take risks	-,073	-,071	5
Locus of control	,433	,455	5
Inovatividade	,375	,455	5
Need of achievement	,371	,423	5
Inovatividade	,365	,452	5
Perceived behavioural control	,604	,623	5
Personal attitudes	,644	,656	5
Entrepreneurial intentions	,791	,803	5

In face of these results the initial model was reformulated as presented in figure 2.

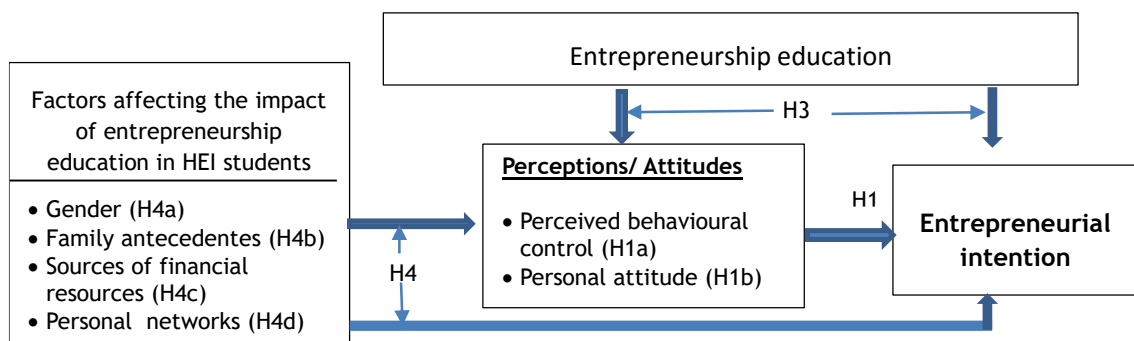


Fig.2. Conceptual Model reformulated

Thus, for the hypothesis 1 testing, the analysis was performed concerning only the constructs of entrepreneurial perceptions, attitudes and intentions (H1a and H1b).

In order to assess if perceptions and attitudes significantly affect the students' entrepreneurial intentions, multiple linear regressions were performed for both samples of students. The results of these regressions are presented in tables 7, 8 and 9.

Table 7. Multiple linear regression: Model Summary^b

Participated in an entrepreneurship course	R	Rsquared	AdjustedR square	Std. Error of the Estimate	Durbin-Watson
No	,597 ^a	,356	,347	,61028	1,939
yes	,537 ^a	,288	,286	,59333	2,163

a. Predictors: (Constant), Personal attitude, Perceived Behaviourial Control

b. Dependent variable: Entrepreneurial Intentions

Table8.ANOVA^a

Participated in an entrepreneurship course			Sum of squares	df	Means square	F	Sig.
No	1	Regression	30,073	2	15,036	40,372	,000 ^b
		Error	54,377	146	,372		
		Total	84,450	148			
Yes	1	Regression	74,007	2	37,003	105,112	,000 ^b
		Error	182,708	519	,352		
		Total	256,715	521			

a. Dependent variable : Entrepreneurial Intentions

b. Predictors: (Constant), Personal attitude, Perceived Behaviourial Control

Table 9: Multiple linear regression: Coefficients^a

Participated in an entrepreneurship course		Unstandardized coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
No	(Constant)	,423	,390		1,085	,280
	Perceived Behaviourial Control	,383	,088	,305	4,359	,000
	Personal attitude	,529	,087	,425	6,067	,000
Yes	(Constant)	1,309	,187		6,990	,000
	Perceived Behaviourial Control	,358	,048	,312	7,521	,000
	Personal attitude	,343	,045	,319	7,689	,000

a. Dependent variable : Entrepreneurial Intentions

The adjusted coefficient of determination (R^2_a) (table 6) was used as a measure of quality of the adjustment. The values obtained for each regression were 0.347 and 0.286; ie, the adjusted model for students who attended an entrepreneurship course explains 34.7% of the total variability while the adjusted model for those who did not attend the entrepreneurship explains 28.6% of the total variability.

The Durbin-Watson statistic (table 7) allows the evaluation of the independence of the error assumption or the absence of autocorrelation. According to Maroco (2011) there is a correlation between residues when the statistical values deviate too much from 2. The values obtained for these statistics were 1.939 and 2.163 for the two estimated models and thus it is considered that there is no autocorrelation between residuals.

The results of ANOVA in table 8 allows the rejection of the null hypotheses because the models have no explanatory power ($p=0,000$).

The individual tests for the coefficients in table 9, allow to conclude that all the variables included in the model have an explanatory model since the null hypothesis is rejected ($p=0,000 < 0.05$). According to these results it can be stated that both the perceived behavioural control and personal attitude of the students who attended and who did not attend the teaching of entrepreneurship have significantly positive values of influence on

entrepreneurial intention. Thus, **hypothesis 1 is supported** and more specifically both hypotheses H1a - Perceived behavioural control has a significantly positive influence on the entrepreneurial intentions of students, and H1b - The personal attitude has a significantly positive influence on the entrepreneurial intentions of students. These results are consistent with studies developed by Lorz, 2011; Oliveira and Leal, 2015; that states that the perceived behavioural control has a positive influence on students' entrepreneurial intentions, and, also are consistent with results of Liñán and Chen, 2009; Yurtkoru et al., 2014; Oliveira and Leal, 2015, that state that personal attitude have a positive influence on students' entrepreneurial intention.

4.3 Influence of entrepreneurship education on attitudes, perceptions and intentions

To test the hypothesis 3, which considers that entrepreneurship education has significantly positive influence on students' entrepreneurial attitudes, perceptions and intentions, a t-test was performed in order to assess if there are differences between the two groups of students. Tables 10 and 11 show the group statistics and the results of the t-test for each variable.

Table 10: Group statistics

Participated in an entrepreneurship course		N	Mean	Std. Deviation	Std. Error of the mean
Entrepreneurial Intentions	No	149	3,9007	,75539	,06188
	Yes	536	3,9937	,70705	,03054
Perceived Behavioural Control	No	149	3,4765	,60252	,04936
	Yes	550	3,6811	,60997	,02601
Personal attitude	No	149	4,0604	,60703	,04973
	Yes	547	3,9978	,65061	,02782

Table 11. t-test for perceived behavioural control, personal attitude and entrepreneurial intention variables

Levene's Test for Equality of Variances				t-test for Equality of Means						
				t	df	Sig. (2 tailed)	Mean Difference	Std. Error Difference	95% Confidence interval of the Difference	
Z	Sig	Lower	Upper							
Entrepreneurial Intentions	Equal variances assumed	,020	,887	-1,399	683	,162	-,09299	,06648	-,22351	,03754
	Equal variances not assumed			-1,347	225,174	,179	-,09299	,06901	-,22897	,04300
Perceived Behavioural Control	Equal variances assumed	,052	,819	-3,641	697	,000	-,20458	,05619	-,31490	-,09426
	Equal variances not assumed			-3,667	236,677	,000	-,20458	,05579	-,31450	-,09467
Personal attitude	Equal variances assumed	2,641	,105	1,056	694	,291	,06260	,05929	-,05381	,17900
	Equal variances not assumed			1,099	248,515	,273	,06260	,05698	-,04963	,17483

Results show that students that participated in an entrepreneurship course have statistically significantly higher levels of Perceived Behavioural Control (3.68 ± 0.61) than students that did not participate (3.48 ± 0.60), $t(697) = -3,641$, $p = 0.000$. This result coincides with studies of other authors like Lorz, 2011; Oliveira and Leal, 2015, that showing that the perceived behavioural control has a positive significance in students' entrepreneurial intentions.

Thus, is possible to maintain that entrepreneurship education has a significantly positive influence on perceived behavioural control, and thus **hypothesis 3 is partially supported**.

In order to asses if there was a "school effect" in the results of entrepreneurship education, ANOVA tests were performed on the group of students with entrepreneurship education. These tests intended to determine differences in students' entrepreneurial attitudes, perceptions and intentions of students between HEIs. Table 12 presents the ANOVA of these constructs.

Table 12. ANOVA of the perceived behavioural control, personal attitude and entrepreneurial intention constructs

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Entrepreneurial Intentions	Between groups	15,273	9	1,697	3,540	,000
	Within groups	252,185	526	,479		
	Total	267,458	535			
Perceived Behaviourial Control	Between groups	11,328	9	1,259	3,523	,000
	Within groups	192,935	540	,357		
	Total	204,263	549			
Personal attitude	Between groups	32,850	9	3,650	9,886	,000
	Within groups	198,268	537	,369		
	Total	231,117	546			

ANOVA results show significant differences between groups for the three constructs, whereby the group statistics and figures presented in tables 13 to 15 and figures 3 to 5 will help to understand where the differences are more evident.

According to these results, in all the three constructs, the public institutions, the *Instituto Superior Politécnico de Tete* (ISPT – Higher Polytechnic School of Tete), followed by the *Escola Superior de Negócios e Empreendedorismo de Chibuto* (ESNEC –High school of business and entrepreneurship of Chibuto) present the higher means. On the contrary the *Instituto Superior de Gestão, Comércio e Finanças* de Maputo (IGECOF - Higher Institute of Management, Trade and Finance of Maputo) and the *Universidade Pedagógica de Tete* (UP- Pedagogical University of Tete) present the lower means in the constructs. This result may be associated with the fact that these two institutions also provide practices of business simulation and make business incubators available as support for business creation.

Table 13 and figure 3. Descriptive statistics of Entrepreneurial intention for each HEIs

Entrepreneurial intention	N	Mean	Std. Deviation	Std. Error
UP-Maputo	87	3,9908	0,70934	0,07605
ISGECOF-Maputo	38	3,5316	0,70255	0,11397
UEM/ESNEC	120	4,1517	0,62872	0,05739
ISPG	60	4,0333	0,74758	0,09651
UEM/ESUDER	90	3,9978	0,75461	0,07954
UP-Tete	27	3,6963	0,75726	0,14574
UCM-Tete	21	3,8952	0,64068	0,13981
ISGECOF_Niassa	38	4,1158	0,53146	0,08621
ISPT	15	4,2267	0,39182	0,10117
UCM- Nampula	40	3,945	0,78836	0,12465
Total	536	3,9937	0,70705	0,03054

Table 14 and figure 4. Descriptive statistics of Perceived Behavioural Control for each HEIs

Perceived Behaviourial Control	N	Mean	Std. Deviation	Std. Error
UP-Maputo	87	3,6621	0,66704	0,07151
ISGECOF-Maputo	37	3,4973	0,48676	0,08002
UEM/ESNEC	120	3,7867	0,52355	0,04779
ISPG	60	3,6767	0,52863	0,06825
UEM/ESUDER	90	3,7067	0,62545	0,06593
UP-Tete	28	3,2786	0,72692	0,13737
UCM-Tete	21	3,5143	0,65596	0,14314
ISGECOF_Niassa	53	3,6415	0,64968	0,08924
ISPT	15	4,1333	0,54336	0,14029
UCM- Nampula	39	3,7795	0,5908	0,0946
Total	550	3,6811	0,60997	0,02601

Table15 and figure 5. Descriptive statistics of Personal attitude for each HEIs

Personal attitude	N	Mean	Std. Deviation	Std. Error
UP-Maputo	87	3,8943	0,75873	0,08134
ISGECOF-Maputo	37	3,4973	0,51125	0,08405
UEM/ESNEC	120	4,285	0,47856	0,04369
ISPG	60	3,96	0,59921	0,07736
UEM/ESUDER	90	4,1222	0,62939	0,06634
UP-Tete	29	3,4207	0,57158	0,10614
UCM-Tete	21	3,9905	0,61798	0,13486
ISGECOF_Niassa	50	3,94	0,56315	0,07964
ISPT	15	4,3067	0,55481	0,14325
UCM- Nampula	38	3,9789	0,71704	0,11632
Total	547	3,9978	0,65061	0,02782

4.4. Influence of personal factors on perceptions, attitudes and intentions

In order to find out what factors influence the attitudes, perceptions and entrepreneurial intentions of students who attended an entrepreneurship course, hypothesis 4 was tested. This hypothesis was tested by three multiple regression models. The first model (MR1) relates all the personal factors (independent variables) to perceived behavioural control (dependent variable); the second model (MR2) relates all the personal factors (independent variables) to personal attitude (dependent variable); the third model (MR3) relates all the personal factors (independent variables) to perceived entrepreneurial intention (dependent variable). Table 16 presents the results of the regressions.

Table 16. Multiple Linear regression of that influence the entrepreneurial perception, attitude and intentions of students

Independent variables			Dependent variables		
			Perceived behavioural control MR1	Personal attitude MR2	Entrepreneurial intention MR3
H4a	Gender	B(t)	-,041(-,950)	-,081(-1,859)	-,132(-3,020)
		Sig(VIF)	,343 (1,053)	,064 (1,052)	,003* (1,049)
H4b	Family history	B(t)	,028(,559)	,063(1,264)	,105 (2,116)
		Sig(VIF)	,576(1,382)	,207(1,377)	,035* (1,355)
H4c ^a	Financial sources – Own	B(t)	-,039(-,860)	,057(1,266)	-,029(-,652)
		Sig(VIF)	390(1,108)	,206(1,110)	,515 (1,107)
	Financial sources – Family	B(t)	-,068(-1,502)	-,063(-1,397)	-,041(-,910)
		Sig(VIF)	,134(1,123)	,163 (1,126)	,363 (1,129)
	Financial sources – Friends	B(t)	-,033(-,748)	,021(,467)	,011(,248)
		Sig(VIF)	,455(1,065)	,640(1,062)	,805 (1,063)
H4d	EntrepreneurialNetwork	B(t)	,124(2,470)	,073(1,456)	,076(1,517)
		Sig(VIF)	,014* (1,390)	,146(1,393)	,130(1,363)
Sig(constant)			,000	,000	,000
R ²			,028	,030	,045
Adjusted R ²			,017	,019	,034
F statistic			,017	,013	,001
Durbin-Watson			1,953	1,760	2,024
* p < 0,05					

The results of the multiple regression demonstrate that *gender* (B = -0.132, t = 3.020, p < 0.05, VIF = 1.049) and *family history* (B = 0.105, t = 2.116, p < 0.05, VIF = 1.355) affect the entrepreneurial intention of students who attended an entrepreneurship course. Concerning gender, male students²⁸ tend to have more entrepreneurial intentions and the same happens

²⁸Male students were encoded with 0 and female students with 1

with students with entrepreneurs in the family. Also *entrepreneurial networks* ($B = .124$, $t = 2.470$, $p < 0.05$, $VIF = 1.390$) have a significantly positive influence on the perceived behavioural control of the students who attended the entrepreneurship education.

The results also reveal that none of the factors significantly affect the personal attitude of the students, and that the different types of funds do not exert any significant influence on attitudes, perceptions and entrepreneurial intentions of students.

The Durbin-Watson statistic presented in table 15, allows evaluating the independence of the error assumption or the absence of autocorrelation. According to Maroco (2011) there is a correlation between residues when the statistical values are around 2. The values of the regressors' perceived behavioural control and entrepreneurial attitude obtained for this statistic were 1,953 and 2,024. Since these values are not very distant from 2 it is considered that there is no autocorrelation between residuals.

In spite of the fact that all the regressions are significant in the ANOVA analysis of the regression, the determination coefficients are very low and therefore indicate that the regressions are not very good models. Thus, difference tests were made for all the variables factors in order to confirm those results. The results of these tests confirmed that the different types of funds do not exert any significant influence on attitudes, perceptions and entrepreneurial intentions of students (all $p > 0,05$). On the contrary, *gender*, *familiar antecedents* and *entrepreneurial networks* affect, attitudes, perceptions and entrepreneurial intentions as presented in tables 17 to 22.

More specifically, results show that:

- *Female* students that present less entrepreneurial intentions than male students have statistically significantly lower levels of Entrepreneurial intentions (3.89 ± 0.7) than male students (4.09 ± 0.70), $t(532) = 3,164$, $p = 0.002$., (see tables 17 and 18). Thus **hypothesis 4a is partially supported**.
- Students with *entrepreneurial family antecedents* have statistically significantly higher levels of Personal attitude, Perceived Behavioural Control and Entrepreneurial intentions than students without (see tables 19 and 20). Thus **hypothesis 4b is supported**.
- The use or predisposition to use *different financial resources* do not represent significantly different levels of Personal attitude, Perceived Behavioural Control and Entrepreneurial intentions and thus **hypothesis 4c is not supported**.
- Students with *entrepreneurial networks* have statistically significantly higher levels of Personal Attitude, Perceived Behavioural Control and Entrepreneurial Intentions than students without (see tables 21 and 22). Thus **hypothesis 4d is supported**.

These results are consistent with results from other studies (Olmos and Castillo, 2008; Freire, 2011; Hatak et al., 2015; Hall et al., 2015) which state that gender exerts a positive influence on entrepreneurial intentions. This is also coincident with studies of other authors (Fayolle and Gailly, 2008; Olmos and Castillo, 2008; Nasurdin et al., 2009; Liñán and Chen, 2006, 2009) who consider that family background influences the entrepreneurial intentions of students. Other authors also refer the influence of entrepreneurial networks in entrepreneurial behaviour (Norbert et al., 2014: 25-26).

Table 17: Group statistics- Male and Female students

Participated in an entrepreneurship course	Gender	N	Mean	Std. Deviation	Std. Error of the mean
Entrepreneurial Intentions	Male	277	4,0866	,70464	,04234
	Female	257	3,8942	,70000	,04367
Perceived Behaviourial Control	Masculino	281	3,7068	,62700	,03740
	Feminino	267	3,6569	,59248	,03626
Personal attitude	Masculino	279	4,0495	,67770	,04057
	Feminino	266	3,9406	,61865	,03793

Table 18 -Test for independent samples - Male and Female students

Participated in an entrepreneurship course		Levene's Test for Equality of Variances		t-test for Equality of Means						
		Z	Sig.	t	df	Sig. (2 tailed)	Mean Difference	Std. Error Difference	Sig.	
									Lower	Upper
Entrepreneurial Intentions	Equal variances assumed	,007	,936	3,164	532	,002	,19248	,06084	,07297	,31199
	Equal variances not assumed			3,165	529,516	,002	,19248	,06082	,07300	,31196
Perceived Behaviourial Control	Equal variances assumed	,819	,366	,955	546	,340	,04983	,05217	-,05264	,15231
	Equal variances not assumed			,957	545,984	,339	,04983	,05209	-,05250	,15216
Personal attitude	Equal variances assumed	3,262	,071	1,956	543	,051	,10886	,05566	-,00048	,21820
	Equal variances not assumed			1,960	541,985	,051	,10886	,05554	-,00024	,21797

Table 19: Group statistics - Familiar antecedents

Participated in an entrepreneurship course	Entrepreneurial Family history	N	Mean	Std. Deviation	Std. Error of the mean
Entrepreneurial Intentions	No	271	3,8996	,74095	,04501
	Yes	265	4,0898	,65823	,04043
Perceived Behaviourial Control	No	280	3,6229	,59681	,03567
	Yes	270	3,7415	,61865	,03765
Personal attitude	No	278	3,9381	,65746	,03943
	Yes	269	4,0595	,63882	,03895

Table 20 -Test for independent samples - familiar antecedents

Participated in an entrepreneurship course		Levene's Test for Equality of Variances		t-test for Equality of Means						
		Z	Sig.	t	df	Sig. (2 tailed)	MeanDifference	Std. Error Difference	Sig.	
									Lower	Upper
Entrepreneurial Intentions	Equal variances assumed	2,636	,105	-3,139	534	,002	-,19018	,06058	-,30919	-,07117
	Equal variances not assumed			-3,143	529,170	,002	-,19018	,06050	-,30904	-,07132
Perceived Behaviourial Control	Equal variances assumed	,419	,518	-2,289	548	,022	-,11862	,05183	-,22043	-,01682
	Equal variances not assumed			-2,287	545,147	,023	-,11862	,05186	-,22050	-,01675
Personal attitude	Equal variances assumed	,671	,413	-2,188	545	,029	-,12135	,05545	-,23027	-,01243
	Equal variances not assumed			-2,189	544,990	,029	-,12135	,05543	-,23022	-,01248

Table 21: Group statistics - Entrepreneurial networks

Participated in an entrepreneurship course	Entrepreneurial networks	N	Mean	Std. Deviation	Std. Error of the mean
Entrepreneurial Intentions	No	107	3,7869	,76097	,07357
	Yes	428	4,0453	,68500	,03311
Perceived Behaviourial Control	No	115	3,5113	,56020	,05224
	Yes	434	3,7263	,61596	,02957
Personal attitude	No	115	3,8522	,62413	,05820
	Yes	432	4,0366	,65272	,03140

Table 22 -Test for independent samples - Entrepreneurial networks

Participated in an entrepreneurship course		Levene's Test for Equality of Variances		t-test for Equality of Means						
		Z	Sig.	t	df	Sig. (2 tailed)	MeanDifference	Std. Error Difference	Sig.	
									Lower	Upper
Entrepreneurial Intentions	Equal variances assumed	1,997	,158	-3,412	533	,001	-,25841	,07574	-,40720	-,10962
	Equal variances not assumed			-3,203	151,751	,002	-,25841	,08067	-,41780	-,09902
Perceived Behaviourial Control	Equal variances assumed	1,816	,178	-3,389	547	,001	-,21496	,06343	-,33955	-,09037
	Equal variances not assumed			-3,581	193,511	,000	-,21496	,06003	-,33335	-,09657
Personal attitude	Equal variances assumed	,032	,859	-2,717	545	,007	-,18440	,06787	-,31773	-,05107
	Equal variances not assumed			-2,788	185,878	,006	-,18440	,06613	-,31487	-,05393

5. Conclusions

Based on the case of Mozambique, this study intended to assess the impact of HEIs' entrepreneurship education on students and to understand what factors determine its(in) effectiveness. More specifically, it aimed to understand the influence of gender, family history, financial resources and networks in the learning outcomes of entrepreneurship education in terms of entrepreneurial attitudes, perceptions and psychological characteristics and intentions. Because answers to the psychological constructs were not reliable, these constructs were removed from the initial research model and the analysis focused only on attitudes, perceptions and intentions. Results showed that i) personal attitude and perceived behavioural control influence entrepreneurial intentions; ii) entrepreneurship education has a positive influence on perceived behavioural control. Concerning students with entrepreneurship education, results showed that iii) there are significant differences in terms of student's entrepreneurial attitudes, perceptions and intentions between schools. These differences may be related with the content and methodologies of the entrepreneurship education; iv) gender, entrepreneurial family antecedents and entrepreneurial networks affect students' entrepreneurial attitudes, perceptions and intentions.

The main limitation of the study was the impossibility to proceed with the analysis of the psychological constructs. In fact, the data concerning these constructs was not reliable, either because students responded randomly or because they did not understand the questions. The fact is that the variables showed weak internal consistency, so it was necessary to exclude them from the study. It should also be noted that the constitution of the two groups of students was not the same, especially concerning the age of the students. This may be cause of some bias on the results. This issue must be considered in further studies.

Further research should also include many other dimensions (variables) present in the questionnaire administered to students that were not presented in this study due to time and space constraints. Besides, some of the results of this research should be further understood with a possible triangulation with the information provided by the directors of the inquired HEIs.

In practical terms, the study is important for teachers and HEIs' responsables to further understand what factors affect entrepreneurship education and to help them to implement measures that will increase its efficiency in terms of students' entrepreneurial attitudes, perceptions and intentions. From an academic point of view, the study allows to further understanding the problematics of entrepreneurship education and what factors affect its effectiveness, especially in the contexts of developing countries.

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Appendix 1 – Questionnaire for students

ATITUDES E INTENÇÕES EMPREENDEDORAS DOS ESTUDANTES DO ENSINO SUPERIOR EM MOÇAMBIQUE

Exmo(a) estudante,

O presente questionário enquadra-se num estudo sobre atitudes e comportamentos empreendedores em Moçambique. Nele constam aspectos referentes à formação, experiência e valorização da actividade empresarial por parte de estudantes universitários. O questionário destina-se apenas a fins científicos e é confidencial. A sua colaboração no preenchimento do questionário determinará o sucesso deste estudo, tarefa que lhe ocupará cerca de 15-20 minutos. É importante que responda a todas as questões com sinceridade dado que **não existem respostas certas ou erradas**.
MUITO OBRIGADA PELA SUA COLABORAÇÃO.

Cod. ____/____/____

Data de recolha ____/____/____

QUESTIONÁRIO²⁹

Por favor, para cada frase, preencha completamente o círculo () que corresponde à sua resposta. Nas respostas que apresentam uma escala, o valor 1 representa sempre o nível mais baixo.

1. Que licenciatura/mestrado está a frequentar?

_____ ano do
curso _____.

2. Para quando prevê a sua conclusão?

Este ano No próximo ano Para além do próximo ano

3. Aponte pela sua importância as razões que o/a levaram a escolher o curso que frequenta, de 1 (nada importante) a 7 (muito importante).

	1	2	3	4	5	6	7
3A. Por vocação.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3B. Pela saída profissional.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3C. Por recomendação de familiares ou amigos.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4A. Possui alguma experiência profissional (Já trabalhou ou trabalha actualmente)?

Sim. Não, (se respondeu “não”, passe directamente para a questão 6)

4B. Em caso afirmativo:

Em que função? (Se trabalhou em vários, indique o cargo em que esteve mais tempo)

4C. Teve ou tem pessoas sob a sua responsabilidade no teu trabalho? Sim. Não.

4D. No total, quanto tempo de experiência profissional tem? (número de anos) _____

4E. Há quanto tempo deixou o seu último trabalho? (número de anos; se ainda trabalha indique 0) _____.

²⁹Questionário realizado com base em : Ajzen, 1990; Turkere Selcuk,2008; Liñán,2004; Liñán,2009; Liñane Chen, 2009;Liñán et al.2010; Paço et al.2011; Rodrigues et al.2012 Dinis et al.2013; Fayolle e Gailly,2013.

4F. A última empresa em que trabalhou quantos funcionários tem/tinha? _____.

5A. Alguma vez trabalhou por conta própria (autónomo ou empresário/a)? Sim. Não.

5B. Em caso afirmativo: Quanto tempo? (número de anos) _____.

5C. Há quanto tempo deixou de trabalhar por conta própria? (em anos; se ainda trabalha indique 0)

6. Que fonte de recursos financeiros utilizou/utilizaria para ser empreendedor.

Próprios Familiares Amigos
Banco Capital de risco Outros Quais? _____

7. O que gostaria de fazer imediatamente depois de terminar o seu curso? Valorize as seguintes opções a partir de 1 (preferência mínima) a 7 (preferência máxima).

	1	2	3	4	5	6	7
7A. Trabalhar como empregado/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7B. Criar uma empresa.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7C. Continuar a estudar.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. No médio e longo prazo, considerando as vantagens e desvantagens (económicas, pessoais, reconhecimento social, estabilidade de trabalho e assim por diante), indique o seu nível de atracção por cada uma das seguintes opções profissionais, a partir de 1 (atracção mínima) a 7 (atracção máxima)

	1	2	3	4	5	6	7
8A. Trabalho assalariado.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8B. Profissional independente.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8C. Empresário.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Até que ponto acha que é possível oferecer cursos de educação para o empreendedorismo que desenvolvam os seguintes aspectos? Indique de 1 (de todo impossível) a 7 (completamente possível).

	1	2	3	4	5	6	7
9A. O conhecimento sobre o meio empresarial.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9B. Um maior conhecimento da figura do empreendedor/a.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9C. A preferência para ser empreendedor/a.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9D. As capacidades necessárias para ser empreendedor/a.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9E. A intenção de ser empreendedor/a.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10A. Já participou em algum curso ou cadeira que possa ser considerado/a como Educação para o Empreendedorismo?

Sim. Não. (se respondeu “não” siga imediatamente para a questão 12)

10B. Se sim, indique o

nome: _____

10C. Indique por favor a(s) actividade(s) que desenvolveu no âmbito do ensino do empreendedorismo

- Discussão e resolução de estudos de caso -----
- Visitas Técnicas a empresas e feiras -----
- Elaboração de trabalhos de campo que promovam contacto com empresários
- Simulações -----
- Elaboração de Planos de Negócio **sem** software -----
- Elaboração de Planos de Negócio **com** software-----
- Uso de Laboratórios de empreendedorismo (E-Lab) -----
- Promoção de Empreendedorismo digital -----
- Elaboração e concurso de plano de negócios -----
- Promoção de incubadoras de empresas e/ou negócios -----
- Elaboração de Projecto de Iniciação Científica -----
- Participação em seminários e/ou conferências de empreendedorismo ---
- Organização de seminários e/ou conferências de empreendedorismo ----
- Promoção de cursos e workshops extracurriculares -----

11. Até que ponto ajudaram o seu desenvolvimento em algum dos seguintes aspectos? Indique de 1 (de todo impossível) a 7 (completamente possível).

- | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 11A. O conhecimento sobre o meio empresarial. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 11B. Um maior conhecimento da figura do/a empreendedor/a. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 11C. A preferência para ser empreendedor/a. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 11D. As capacidades necessárias para ser empreendedor/a. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 11E. A intenção de ser empreendedor/a. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

12.A. Conhece pessoalmente um ou mais empresários/as?

Sim. Não (se respondeu “não” siga para a questão 13).

Em caso afirmativo, indique qual é a sua relação com eles, classificando as seguintes questões desde 1 (nada) a 7 (completamente).

- | <input type="radio"/> Familiar. Grau de parentesco?_____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 12B. Em que medida conhece a sua actividade como empresário/a? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 12C. Em que medida o/a considera um “bom empresário/a”? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> Amigo | | | | | | | |
| 12D. Em que medida conhece a sua actividade como empresário/a? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

- 12E. Em que medida o/a considera um “bom empresário/a”?
- Dono da empresa onde trabalha
- 12F. Em que medida conhece a sua actividade como empresário/a?
- 12G. Em que medida o/a considera um “bom empresário/a”?
- Outro? Qual? _____
- 12H. Em que medida conhece a sua actividade como empresário/a?
- 12I. Em que medida o/a considera um “bom empresário/a”?

13. Indique qual(ais) a(s) organizaçã(o)es e medidas de apoio à actividade empresarial que conhece e o seu grau de conhecimento, desde 1 (desconhecimento absoluto) a 7 (conhecimento total).

- | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 13A. Associações _____
_____ | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13B. outros organismos públicos ou privados _____
_____ | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13C. Medidas de formação específica para jovens empresários/as. _____
_____ | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13D. Empréstimos em condições especialmente favoráveis _____
_____ | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13E. Apoio técnico para iniciar o negócio. _____
_____ | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13F. Centros/incubadoras de empresas. _____
_____ | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

14. Indique o seu nível de concordância com as seguintes afirmações, de 1 (Não concordo nada) a 5 (Concordo totalmente).

	1 Não concordo nada	2 Não concordo	3 Nem sim nem não	4 Sim, concordo	5 Sim, concordo completamente
LC1 Os contratempos das pessoas resultam dos erros que cometem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LC2 Muitas das coisas infelizes na vida das pessoas são em parte devido à má sorte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LC3 Eu não gosto de resultados, que não resultam de meus próprios esforços, não importa o quão favorável for	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LC4 Estou disposto a aceitar as consequências positivas e negativas das minhas decisões e acções	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LC5 Não é a sorte nem destino, que influenciam o resultado dos acontecimentos na minha vida, sou eu	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LC6 Não posso esperar e ver as coisas acontecerem; prefiro fazer as coisas acontecerem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LC7 Acredito que o sucesso é um produto da sorte e destino, que esforço pessoal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

LC8	Considero que sou uma pessoa com sorte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PR1	Eu não me importo se o lucro for pouco, desde que seja seguro e constante	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PR2	Estou disposto a assumir riscos elevados para retornos elevados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PR3	Eu não me importo de trabalhar em condições de incerteza, desde que para mim haja uma probabilidade razoável de ganhos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PR4	Não tenho medo de investir meu dinheiro num empreendimento cujos dividendos foram calculados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PR5	Vou considerar um risco que vale a pena somente se a probabilidade de sucesso for 60% ou mais	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PR6	Tenho medo de envolver-me num novo empreendimento desconhecido	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NA1	Tenho prazer em responder aos desafios, por isso a competição faz com que me esforce mais	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NA2	Um trabalho bem remunerado, só me interessa se puder resultar num sentimento de realização e satisfação	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NA3	Só quero ganhar, o necessário para viver a vida de maneira confortável	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NA4	Eu não me importo com a rotina, posso trabalhar muito se o salário for bom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NA5	Quando faço algo, procuro não fazer apenas, mas sim fazer muito bem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NA6	Contratarei pessoas com base na amizade e outras relações (por sua lealdade), e não com base na competência	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TA1	Para mim, a segurança é extremamente importante	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TA2	Um bom trabalho é aquele com instruções claras sobre o que deve ser feito e como deve ser feito	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TA3	Gosto de trabalhar em situações pouco definidas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TA4	Tenho um planeamento do meu trabalho que tento seguir com muito cuidado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TA5	Incomoda-me quando várias pessoas têm responsabilidades sobrepostas (várias pessoas a decidir sobre o mesmo)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TA6	Em situações pouco claras, eu gosto de tomar decisões e assumir o "liderança"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IN1	Evito mudar a maneira como as coisas são feitas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IN2	Enquanto os outros nada vêem de incomum no ambiente, eu sou capaz de perceber nele oportunidades de negócio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IN3	Sou capaz de vencer dificuldades com soluções que eu descubro	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IN4	Eu acredito que há sempre novas e melhores maneiras de fazer as coisas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IN5	Acho que é difícil vir acima com ideias novas, diferentes, arrojadas ou mesmo loucas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PBC1	Para mim seria fácil iniciar uma empresa e mantê-la em funcionamento	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PBC2	Creio que não seria capaz de criar uma empresa viável	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PBC3	Estou preparado para seguir todos os passos para a criação de uma nova empresa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PBC4	Conheço os detalhes práticos necessários para iniciar uma empresa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PBC5	Para mim seria muito difícil desenvolver um projecto empresarial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PBC6	Se eu tentasse criar uma empresa teria grande probabilidade de	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

sucesso						
PA1	Ser um empreendedor implica mais vantagens do que desvantagens para mim	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PA2	Para mim a carreira de empreendedor é pouco interessante	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PA3	Se eu tivesse oportunidades e recursos, gostaria muito de criar uma empresa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PA4	Para mim tornar-me empresário dar-me-ia grandes satisfações	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PA5	Preferia ter outra profissão, que não a de empresário	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EI1	Estou disposto a fazer qualquer coisa para ser empresário	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EI2	Meu objectivo profissional é tornar-me um empresário	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EI3	Farei todos os esforços para iniciar e gerir a minha própria empresa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EI4	Estou determinado a criar uma empresa no futuro	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EI5	Tenho ideias e planos muito sérios em criar/gerir uma empresa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EI6	Tenho muitas dúvidas sobre a possibilidade de vir a criar uma empresa algum dia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

DADOS PESSOAIS

15. Idade: _____.

16. Género: Masculino Feminino

17. Naturalidade (Concelho): _____.

18. Local de residência:

_____.

19. Até ao momento, quais são as habilitações literárias dos seus pais?

19A. Pai: 1º Ciclo; 2º Ciclo; 3º Ciclo; Ensino Secundário; Ensino Superior; Outros.

19B. Mãe: 1º Ciclo; 2º Ciclo; 3º Ciclo; Ensino Secundário; Ensino Superior; Outros.

20. Qual é a ocupação atual dos seus pais?

	Empregado/a Setor privado	Funcionário público	Independente / empresário	Reformado Pensionista	Desempregado	Outras
20A. Pai	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20B. Mãe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. Número de pessoas que residem no seu domicílio (incluindo-se): _____

22. Qual é, mais ou menos, o rendimento mensal na sua casa, em meticais? (somando o rendimento de todas as pessoas que residem na casa):

- Até 2000 Entre 2001 e 4.000 Entre 4001 e 7500 Entre 7501 e 10000
 Entre 10001 e 20000 Entre 20001 e 50000 Entre 50001 e 100000 Mais de 100000

O questionário chegou ao fim, e estamos muito gratos pela sua participação. Caso deseje receber os resultados do estudo, deixe o seu contacto.

Dados de contacto (opcional)

Nome: _____
Endereço de
contacto: _____
Email _____ Telefone fixo _____
Telefone móvel _____

Com os Nossos Melhores Cumprimentos

Dambusse B. Libombo Anabela Dinis

Dambusse B. Libombo UEM/Escola Superior de Negócios e Empreendedorismo de Chibuto (Moçambique) e Universidade da Beira Interior Faculdade de Ciências Sociais e Humanas Departamento de Economia e Gestão Estrada do Sineiro 6200-209 Covilhã-Portugal Tel.: 00258847886114 (Moçambique) Tel.: 00351926176473 (Portugal) Email: dambussi@hotmail.com	Anabela Dinis (Supervisão) Universidade da Beira Interior Faculdade de Ciências Sociais e Humanas Departamento de Economia e Gestão Estrada do Sineiro 6200-209 Covilhã-Portugal
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Part 3

Conclusions

This doctoral work focuses on the issue of entrepreneurship promotion and the role of HEIs as support instruments in the context of developing countries. More specifically, based on the Mozambican case, it aims to understand the effectiveness of this instrument, identifying the main progresses and barriers in HEIs' entrepreneurship education and the factors that affect its effectiveness. This purpose was translated in the following research questions: I) What factors influence positively and/or negatively entrepreneurial attitudes, intentions and behaviours? And, do these factors differ according to the economic development level of the countries? II) What are the main achievements and barriers to the creation of companies promoted/incubated by HEIs? III) Are the HEIs' cooperation networks decisive for the development of teachers' and students' skills and for the promotion of entrepreneurship? IV) Do entrepreneurship education programmes in HEIs influence students' entrepreneurial (personal) characteristics, attitudes, perceptions and intentions? What other factors affect students' entrepreneurial characteristics, perceptions, attitudes and intentions? In the following paragraphs the main conclusions from the empirical studies are presented, in the light of the objectives of the study:

1. Concerning the first purpose, it was intended to *identify and compare the determinants of entrepreneurial attitudes, intentions and behaviours among Portuguese-Speaking Countries (PSC) with different levels of economic development: Portugal - an innovation driven economy, Brazil - an efficiency driven economy and Angola - a factor driven economy.*

Using secondary data from GEM-2010 database, and applying a quantitative methodology descriptive statistical analysis and multiple linear regressions, results indicate that (i) gender, (ii) education, (iii) entrepreneurial networks, (iv) opportunity and necessity motivation and (v) perception of opportunities in the area of residence, are positives determinants of entrepreneurial attitudes, intentions and behaviours in the Portuguese Speaking Countries (PSC) under analysis. More specifically, results show that men, individuals with higher levels of education and with entrepreneurial personal networks tend to present higher entrepreneurial scores. Furthermore, the empirical study makes evident the importance of the perception of opportunities for the formation of entrepreneurial attitudes, intentions and behaviours. Results also show that the level of economic development affects not only entrepreneurial attitudes, intentions and behaviours but also the weight/importance of its determinants.

2. The second purpose of the study tries to *understand how entrepreneurship education is being implemented in these countries and to identify the main barriers to the creation of companies promoted and/or incubated by HEIs with entrepreneurship education in their curricula.* Using a qualitative methodology (through interviews conducted with the leaders of

HEIs with entrepreneurship education in their curricula and consultation of documental sources), it was concluded that despite the fact that, in the last decade, entrepreneurship education became a reality in Mozambican HEIs, it still faces important barriers to its effectiveness. These barriers are related to the lack of trained/qualified teachers in entrepreneurship because this subject/area of study is new in developing countries; deficient linkages with entrepreneurs and other institutions in part because of material difficulties to implement practical activities (e.g. visits to companies and institutions) and the lack of receptiveness on the business community side.

Despite the fact that educational material has been mentioned as the main resource for entrepreneurship education, some HEIs indicated that the available material is not enough considering both the quantity and quality. The inexistence of other educational resources and support infrastructures, like incubators, laboratories and libraries, often associated with lack of financial resources was also mentioned as an important barrier to firm creation by HEIs' students and teachers. And also, the political and business environment was also mentioned as an important barrier to firms' creation, namely in what concerns financial and tax systems. The mentioned difficulties are not new; however, what seems to be more striking in Mozambican HEIs (and probably in other developing countries) are the greater dependence on external knowledge resources, the lack of more basic things like students' access to textbooks and other written material and lower interaction with entrepreneurs and other relevant actors in the business arena.

3. The third purpose of the study was to *identify if and how HEIs cooperation networks are decisive for the development of teachers' skills and for the promotion of entrepreneurship in particular within the context of developing countries.*

Using a qualitative methodology (through interviews conducted with the leaders of HEIs with entrepreneurship education in their curricula), the empirical studies developed concerning this subject showed how collaborative university networks have been used as tools for the development of the entrepreneurial competencies of both teachers and students and as a vehicle for knowledge dissemination within the community. More specifically, cooperation with other universities is being used to promote the mobility of resources for the specific purpose of improving teachers' entrepreneurship knowledge and competencies, and other collaborative projects have been implemented in order to promote innovation and the dissemination of business knowledge among students and entrepreneurs in the surrounding community. Results also showed that this strategy of cooperation networks is present only in public HEIs, which tend to present better results concerning the number of teachers with specific training in entrepreneurship and the number of businesses created. Institutional cooperation seems to be either still missing in several HEIs or not yet thoroughly developed in most private institutions. Concerning the development of coordinated and global efforts to promote the quality of entrepreneurship education, the study also highlights the role of

public partners in involving other national and international private organizations in the process. In spite of the fact that most of these initiatives are still in a starting phase and it is not possible at the moment to fully anticipate what will be their final outcome or impact, this study represents a first attempt in this direction. But the study allowed the suggestion of the following propositions: **Proposition 1**-The introduction of entrepreneurship curricula in developing countries is related with the governmental priorities which affect the behaviour of both public and private HEIs. **Proposition 2**-In developing countries, public HEIs are more prone to develop university networks, including diverse national and international institutions, than private HEIs. **Proposition 3** - University networks allow a better preparation of teachers and the existence of more and better learning opportunities which, in turn, affect the start-up activity.

4. Finally the fourth purpose of the study intended to *assess the impact of HEIs' entrepreneurship education on students and to understand what factors determine its (in) effectiveness. More specifically, it aimed to understand the influence of gender, family history, financial resources and networks in the learning outcomes of entrepreneurship education, in terms of entrepreneurial attitudes, perceptions and psychological characteristics and intentions.*

This empirical research used a quantitative methodology based on primary data (in selected HEIs as a first level of a sampling strategy) collected through questionnaires applied in person and individually to 721 students, out of which 572 attended 2nd, 3rd and 4th years of higher education with an entrepreneurship curricula, and 149 did not participate in any entrepreneurship education program. Because answers to the psychological constructs were not reliable, these constructs were removed from the initial research model and the analysis focused only on attitudes, perceptions and intentions. Further statistical analysis included descriptive analysis, multiple and linear regressions, and test of differences. Results showed that i) personal attitude and perceived behavioural control influence entrepreneurial intentions; ii) entrepreneurship education has a positive influence on perceived behavioural control. Concerning students with entrepreneurship education, results showed that iii) there are significant differences in terms of students' entrepreneurial attitudes, perceptions and intentions between schools; iv) gender, entrepreneurial family antecedents and entrepreneurial networks affect students' entrepreneurial attitudes, perceptions and intentions. The study's results also showed that the public HEI (ISPT and ESNEC) are those with higher average results of attitude, perception and entrepreneurial intentions of students.

Limitations and future lines of research

This research inherently contains its own limitations as the studies carried out do not provide any definitive responses to the questions raised but rather provide foundation for building up new discoveries and future lines of research. These limitations vary according to circumstances or the research choices (Borgan and Taylor, 1996; Fonseca, 2008) and are presented as follows:

1. The study to answer the first questions: *what factors influence positively and/or negatively entrepreneurial attitudes, intentions and behaviours in the Portuguese-Speaking Countries (PSC)? and Do these factors differ according to the level of economic development of the countries?* has some limitations. The study uses data from only one country in each developmental stage. As a line for further research, it is proposed to replicate the study with more countries at each stage of economic development, to understand whether the identifiable differences between countries are widespread or limited to these specific countries. In addition, the GEM data-base only provides information on three countries which fall within the set of Portuguese-speaking countries, there by limiting the generalization of the answer to this question.

2. To answer the second question: *what are the main achievements and barriers to the creation of companies promoted / incubated by HEIs with entrepreneurship education in their curricula?* the main limitations are: first, the study does not cover all the establishments offering entrepreneurship education to have a complete image of higher entrepreneurship education in Mozambique, the other establishments should also be inquired. Second, a deeper analysis of programs / methodologies and results is needed to better evaluate the congruence between the three. Furthermore, students should also be inquired to obtain a triangulation of sources. Finally, it must be noted that assessment of entrepreneurship education results in such a short period of time since its implementation is limited, if not impossible. In fact, as stressed by Dinis *et al.* (2014³⁰) the efforts and investments on entrepreneurship education “cannot be immediately fully evident and long-term results (often considering a time-span of generations) should be expected”. Thus, because the assessment of the impact of an entrepreneurship program requires a deep and longitudinal analysis, these are paths for further research.

3. To answer the third question: *how can cooperation networks be decisive for the development of teachers' skills and for the promotion of entrepreneurship in particular within the context of developing countries?*, two empirical studies were developed. These studies also have some limitations that represent further venues for research. First, they do

³⁰ Dinis, A, A Paço, R Rodrigues, J Ferreira and M Raposo (2014) Does entrepreneurship education to teenagers have different impacts over time? Some evidences based on entrepreneurship education program on Mozambique youth. *Proceedings of the ICSB, World Conference on Entrepreneurship “Entrepreneurship and Sustainability*, Dublin, 11-14 June.

not cover all establishments offering entrepreneurship education. In spite of the fact that the used sample is sufficiently representative to give a real image of entrepreneurship education in Mozambique, to get a complete picture the other establishments offering entrepreneurship education should also be investigated. Second, a deeper analysis of contents and results of the cooperation, including other institutions that are part of the cooperation network in order to assess their commitment as well as the perspective of students/entrepreneurs, should also be investigated in order to obtain a triangulation of sources. To fully understand the impact of such networks in the quality of teaching and its outcomes a study of contents and methodologies of entrepreneurship education is required, as well as a follow up of the businesses created. Finally, due to the studies explorative nature, generalisation of the results must be cautious and is limited by definition. In order to be generalised, the three theoretical propositions resulting from the Mozambique case should be tested in further studies, including a deeper analysis (especially in the case of Proposition 3: *“University networks allows a better preparation of teachers and the existence of more and better learning opportunities which, in turn, affect the start-up activity ”*) and a larger number of developing countries.

4. Finally, to answer the fourth and final question: *what factors determine the effectiveness of entrepreneurship education in HEIs? Does gender, family history, type of financial resources used and networks influence the entrepreneurial characteristics, attitudes and intentions of higher education students who attended an entrepreneurship course?* The main limitation of the study was the impossibility to proceed with the analysis of the psychological constructs. In fact, the data concerning these constructs was not reliable, either because students responded randomly or because they did not understand the questions. The fact is that the variables showed weak internal consistency, so it was necessary to exclude them from the study. It must be also noted that the constitution of the two groups of students was not the same, especially concerning the age of the students. This may be the cause of some bias on the results. This issue must be considered in further studies. In spite of the validated constructs used in the questionnaires, these constructs were developed in other context. In this context, where the concept and practice of entrepreneurship education is still quite recent, with the lack of teachers training and qualification on this matter the study finds that there is need for rehabilitation of the constructs of the variables under study in order to reach more reliable results and conclusions. For this reason, the study considers that *“the assessment about the hypothesis of participation in entrepreneurship education programs as a factor that positively influence the entrepreneurial intention of students, does not yet have final results in the context of this country”*. Further research should also include many other dimensions (variables) present in the questionnaire administered to students that were not presented in this study due to time and space constrains. Besides, some of the results of this research should be further understood with a possible triangulation with the information provided by directors of the inquired HEIs.

Implications for policy and HEI

I) The study of the factors that positively and/or negatively influence entrepreneurial attitudes, intentions and behaviours in the Portuguese-Speaking Countries (PSC) contributes, from the theoretical side, to confirm the importance of gender studies applied to entrepreneurship in different contexts. The fact that gender is more determinant in a European (developed) country than in developing countries is, somehow, surprising and deserves further research. The study also confirms the centrality of opportunity, the way that the perception of opportunity corresponds to an objective reality or to an individual perception is a discussion that already inspired several researches, but that is beyond the purpose of this research. However, since this perception reveals to be fundamental to trigger entrepreneurial processes in all the three different economic contexts, it reinforces these concepts as a central and challenging research field in the entrepreneurship domain; The study highlights the importance of networks in the entrepreneurial process, but, more, it shows that its importance is not the same in all contexts, as already implicit; But, surprisingly, they seem to be more important in the more developed countries. This is also a matter for further research. Furthermore, this study also reinforces the importance of contextualizing entrepreneurship theory, which is important for understanding when, how, and why entrepreneurship happens and who becomes involved. The exploration of these issues under a contextual approach is a venue for further research. From the practical side, this study highlights that gender issues, the promotion of entrepreneurial networks and the promotion of visibility/perception of opportunities are aspects that should be incorporated in policies that aim to increase entrepreneurship. Furthermore, it shows that there is not a single recipe for all countries concerning entrepreneurship policies since the determinants of entrepreneurship do not have the same importance in every context.

II) In order to understand what are the main achievements and barriers to the creation of companies promoted /incubated by HEIs with entrepreneurship education in their curricula, the study contributes to deepen the entrepreneurship promotion theme in the specific contexts of developing countries; it extends the focus of HEI role in the promotion entrepreneurship, from education to incubation and to approach business community; Represents a first assessment about the processes and results of entrepreneurship education in Mozambican HEI; and it highlights problems that HEIs face when their actions move from education in classroom to practical implementation of entrepreneurial business initiatives providing bases for the design and eventual adjustment of this support instrument, especially in the context of developing countries.

III) The study about HEIs' cooperation networks contributes to the understanding that HEIs cooperative networks can be fundamental for the improvement of entrepreneurial culture in Mozambique. Entrepreneurship education will clearly benefit from greater attention to the

links between improvements in knowledge and skills and other enterprise development mechanisms, including access to funding and market intelligence. This study contributes to the understanding, by the leaders of HEIs, of the importance of cooperation between institutions/ organizations for the development of entrepreneurial skills of both teachers and students, especially in the context of developing countries.

IV) The fourth article and the understanding of what factors determine the effectiveness of entrepreneurship education in HEIs, contributes for academics and political leaders to have more sustainable references to implement programs of entrepreneurship education. It shows that gender is an issue in entrepreneurship education that must be considered in the design and implementation of entrepreneurship curricula. Second, from an academic point of view, the study allows to further understand the problematic of entrepreneurship education and what factors affect their effectiveness, especially in the context of developing countries. Furthermore, it raises further questions concerning networks theory, especially in what refers to the relationship between networks and its effects on the entrepreneurial process.