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Fostering International Entrepreneurship for Development

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Acronyms

APS	Adult Population Survey
BG	Born Global
C	Control group
CPI	Corruption Perception Index
DID	Difference-In-Differences
EE	Entrepreneurship Education
EET	Entrepreneurship Education and Training
ET	Entrepreneurship Training
EUR	Euro
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GEI	Global Entrepreneurship Index
GEM	Global Entrepreneurship Monitor
GVC	Global Value Chain
HL	Holt & Laury
IB	International Business
ID	Identification number
IEO	International Entrepreneurial Orientation
IFC	International Finance Corporation
IMF	International Monetary Found
INV	International New Ventures
MNE	Multi-National Enterprise
NBIA	National Business Incubator Association
OECD	Organization for Economic Co-operation and Development
PEG	Public Educational and Government
SEBRAE	Serviço Brasileiro de Apoio às Micro e Pequenas Empresas
SG	Sabater-Grande and Georgantzis
SME	Small Medium Enterprise
TEA	Total Early-Stage Entrepreneurial Activity
TR	Treated group
UN	United Nations
UNCTAD	United Nations Conference on Trade And Development
USD	United States Dollar
VI	Virtual Incubator
WTO	World Trade Organization

Abstract

As a result, fostering entrepreneurship has become a key element of several development programs around the world.

This thesis, attempts to identify the determinants of export versus FDI from a developing country. More specifically, we study how the decision maker's attitudes and personal characteristics can be relevant in determining them. We do so by using experimental economic methodology, which allow us to identify and better figure out what are the main individual determinants, which push business manager toward FDI rather than export. The thesis was developed in collaboration with UNCTAD, United Nations Conference on Trade and Development. The experiments were conducted in Panama, on October 2016.

 The results suggest that gender, risk aversion and previous international experiences matter for FDI at the individual level. Finally, our protocol allows us to provide a further contribute in understanding how training program can get better and what are the main determinants the training program should work on in order to enable an international mind-set in would-be entrepreneurs. From the collaboration with UNCTAD, some interesting answers to the research questions emerged.

Abstract (Italian version)

Il rapporto tra imprenditorialità e sviluppo economico è piuttosto complesso. Di fatto, diverse tipologie e fasi di imprenditorialità possono influenzare la crescita economica secondo modalità diverse in differenti parti del mondo.

Alla luce di ciò, lo sviluppo e la promozione del tema dell'imprenditorialità sono diventate degli elementi chiave di diversi programmi di sviluppo nel mondo.

Questo lavoro di tesi si prefigge dunque, di indagare le determinanti dei flussi di export rispetto a Foreign Direct Investment da paesi emergenti. In particolare, il progetto studia come le predisposizioni dei "decision-makers" e le caratteristiche personali degli stessi possano essere rilevanti nella decisione di ricorrere a un FDI. Pertanto, in questa sede verranno utilizzati modelli di economia sperimentale che consentono di individuare e comprendere meglio quali siano le principali determinanti individuali, che spingono i Manager all'adozione di un FDI piuttosto che di un export. La tesi è stata sviluppata in collaborazione con l'UNCTAD, United Nations Conference on Trade and Development. Inoltre, la fase sperimentale è stata condotta a Panama durante tutto il mese di ottobre 2016.

Attraverso l'analisi dei risultati preliminari, si osserva che il genere, l'avversione al rischio e precedenti esperienze internazionali risultino essere fattori determinanti nella scelta di un FDI a livello individuale. Il nostro protocollo, pertanto, è volto a fornire un contributo alla comprensione della modalità con cui programmi di formazione manageriale possano essere migliorati. Inoltre, esso mira ad individuare le principali caratteristiche su cui i suddetti programmi dovrebbero basarsi al fine di trasmettere un mind-set internazionale ad aspiranti

imprenditori. La collaborazione con l'UNCTAD ha quindi permesso di fornire interessanti risposte alle investigazioni effettuate.

Executive summary

The relationship between entrepreneurship and economic development is quite complex. Different types and phases of entrepreneurship may impact economic growth differently in different parts of the world (Sternberg & Wennekers, 2005). Generally speaking, researchers have identified a U-shaped relationship between entrepreneurship and economic development which implies a higher rate of entrepreneurial activity in low-income countries than in middle-income countries (Acs & Audretsch, 2010). This result might reflect the fact that entrepreneurs in developing countries are less innovative and tend to be proportionately more 'necessity' motivated (Acs & Audretsch, 2010). Higher levels of GDP may therefore be associated with more 'innovative' forms of entrepreneurship. *De facto* entrepreneurship does make a fundamental contribution to development by fostering structural change and growth and acting as a tool for people to escape from poverty and inequality (Naude, 2010a). As a result, fostering entrepreneurship has become a key element of several development programs around the world (World Bank, 2005). At the same time, entrepreneurs could exploit new opportunities in developing countries due to the increasing fragmentation and internationalization of the global value chains (GVCs) and global sourcing. For many countries, especially low-income countries, the ability to effectively insert themselves into GVCs is an essential condition for their development. Participation in the GVCs has been

shown to open prospects for local companies, thus leading to economic benefits, in terms of productivity, sophistication and diversification of exports (OECD, 2015). Thus, the social, cultural and political contexts play a key role in fostering local entrepreneurship, namely cross-border or international entrepreneurship, which could theoretically be involved in international paths and global networks.

In this thesis we study the determinants of export versus FDI from a developing country and how the decision maker's attitudes and personal characteristics can be relevant in determining them. We do so by using experimental economics methodology, which allow us to identify and better figure out what are the main individual determinants, which push business manager toward FDI rather than export.

Experimental methods offer the opportunity to significantly improve the evidence for causal relationships in several ways. In describing the usefulness of experimentation in economics research, Croson, Anand & Agarwal (2007) noted that experiments can "be designed to capture what researchers believe are the relevant dimensions of the field and to replicate the regularity in controlled conditions. Moreover, experimentation, offers strong tests of internal validity. Internal validity concerns causality (Campbell & Cook, 1976) or the assessment of a cause and effect relationship between two variables. Finally, experimental thinking can help in evaluating evidence for cause and effect, and to reinforce design choices and analytical approaches that allow stronger causal tests if true experiments are not possible.

To the aim of our analysis, we adopted the Georgantzis' experiment, developing a two-stage oligopoly game under demand uncertainty and asymmetric information. More specifically, in this game a foreign firm decides whether to serve the host market through exports or foreign direct investment and, then, it competes in quantities against an informed host firm. Only when entry occurs through direct investment the foreign firm could solve the uncertainty problem:

it learns whether the demand realization is the good state or the bad state. Variability in demand favours the investment strategy absent risk aversion. However, this may change when the foreign firm is risk averse. A sufficiently high degree of risk aversion will turn variability in demand advantageous to the export strategy. The question then arises, will the risk-averse foreign firm still have an incentive to enter via investment and learn local demand characteristics? More in detail, a high degree of risk pushes firms leaning toward the adoption of an export strategy. Therefore, we argue that, when the foreign firm is sufficiently risk-averse, variability in demand increases the expected utility of exports and decreases that of investment. Entry via FDI requires a significant probability of the good state of demand (larger than under risk neutrality), thus higher returns. Hence, only in this scenario firms will be able to cover the fixed setup costs.

The implemented experimental design relates somehow to Oechssler & Schipper (2003), as it involves subjects who are uncertain about the game they are playing. Their focus is on the ability of subjects to learn the game they are playing in a repeated framework, while our design allows subjects to invest in a costly strategy letting them know the game they are playing with certainty. We can assume that FDI is a costly but uncertainty-reducing strategy, whereas exports involve lower costs but a higher uncertainty concerning the demand conditions in the local market.

From this game, the following hypotheses can be derived and experimentally tested:

H_1: Local firms will play the dominant strategy in the market game regardless of the foreign firm strategies.

H_2: Informed foreign firms will play the dominant strategy in the market game.

H_3: Uninformed foreign firms are more likely to play A the more risk averse they are.

H$_4$: For any probability of the good state of demand, foreign firms are more likely to purchase information the more risk averse they are.

The experiment was played with subjects (N=84) being randomly assigned to either the role of a local or foreign firm with two treatments: low cost of FDI (Treatment 0, x=2.5$) and high cost of FDI (treatment 1, x=5$), in a between subject design. When experiments involve manipulation of the treatment and random assignment to conditions, could be vulnerable to a variety of threats to internal validity. For instance, despite random assignment across treatment conditions, it is possible that the groups obtained had pre-existing differences on a quality that systematically altered the response of one group to the treatment as compared with the other. In this case, the observed relationship could be spuriously generated by the unobserved difference between the groups. Being aware of this problem, we firstly needed to demonstrate that subjects who played treatment 0 (x=2.5$) were statistically equal to those who played treatment 1 (x=5$). We demonstrated that this hypothesis is confirmed in two ways: graphically, using the error bars methods, and analytically, performing a t-test for the two groups of subjects. Once demonstrated the overlapping between the two groups of subjects we came out the Georgantzis experiment.

The results of our analysis can be summarized as follows:

       Result 1: *The prediction of dominant play (strategy A) by initially informed players (local firms) and ex post informed ones (foreign firms adopting FDI) in game L (bad state of demand) receives strong support both treatment (70% and 65.22%).*

       Result 2: *The prediction of dominant play (strategy B) by initially informed players (local firms) in game R (good state of demand) playing against uniformed rivals (exporters) is confirmed in the low treatment game (only 35%*

play against this prediction) and slightly confirmed in the high treatment game (43.48% play against this prediction).

This results provide full support to hypotheses H_1 and H_2.

Results 3: *The number of subjects who have used FDI in the high 'x' treatment (69.57%) is lower than those who have done so in the low 'x' treatment (80%).*

It can be seen that the increasing cost of purchasing information reduces the number of purchases itself. This result qualitatively confirms H_3. More specifically, the two indicators of risk, risk propensity and average risk, show an average value higher than the mean of the variable (risk propensity: 7.675 and 7.045, mean=5; average risk: 2.5 and 2.53, mean=2.5). Moreover, given the fact that firms are sufficiently risk-inclined, we can argue that the expected utility of FDI increases and the one of exports decreases. Therefore, we are not surprised about the high number of subjects who purchased information. Finally, this result is not in accordance H_4.

Results 4: *Surprisingly, initially informed players (local firms) significantly vary across treatments the frequency of their cooperative play against informed entrants (foreign firms adopting FDI) in game R (good state of demand) (it doubled from 30% treatment 0, to 65.22% treatment 1), depending on the value of 'x' (higher fixed setup cost).*

Results 5: *Surprisingly, initially uninformed players (foreign firms), who have decided to become informed, significantly vary across treatments the frequency of their cooperative play against informed players (local firms) in game R (good state of demand) (from 50% treatment 0, to 65.5% treatment 1), depending on the value of 'x' (higher fixed setup cost).*

These findings can be motivated considering that the higher the cost of FDI, the higher the likelihood of collaborating. Indeed, a high fixed setup costs the firm should sustain to acquire information, implies a high bargaining power of the foreign firm. Thus, this means both parties will have equal bargaining power. In

other words, bargaining power depends to a large degree on the credibility of the parties. More financial resources are needed and the higher is the risk associated to the investment of foreign firm, the greater will be the incentives for local firm to collaborate. Hence, collaboration between the two parties' can be sustained if they interact over a long span of time. Therefore, a key condition for such mechanisms to work is that the foreign players should care sufficiently about investing in the host country and about future payoffs.

Results 6: *Surprisingly, the behaviour of initially uninformed players (foreign firms) who have decided to remain uniformed (exporters) significantly varies under different values of 'x'. Specifically, a lower 'x' (FDI-related cost) makes an exporting firm behave significantly less cooperatively than under a higher one (0% vs. 57.14%).*

Indeed, when firms have decided to enter as exporting sellers into foreign market, they behave less cooperatively when their decision to export has been taken in a setup which is more favourable to FDI.

As far as the individual-level determinants of FDI are concerned, our results suggest that:

Result 1: *Firstly, according to the linear regression emerge that the "Gender" has a significant statistically impact on FDI. The analytical results show the gender variable has stronger impacts to the investors' decision than some other factors. We can show thus that an individual's gender shapes her attitudes towards FDI. More specifically, the results demonstrate that men are more likely to think they can benefit from FDI. On the contrary, women tend to be relatively more sceptical about FDI.*

Result 2: *The coefficient estimate of "unemployed" is negatively and marginally statistically significant suggesting that unemployed individuals tend to be more reluctant in selecting FDI strategy compared to their employed counterparts.*

Result 3: *It can be seen that the "International entrepreneurship experiences" are associated with increasing FDI flow. The prediction is also confirmed by literature, which argues that, an individual who has already had previous entrepreneurship experience is more tolerant to risk, and thus, has a higher propensity to pursue FDI. Generally speaking, entrepreneurial past experience enable individuals to get better their entrepreneurial abilities giving them the possibility to better evaluate information and through these to detect new entrepreneurial opportunities.*

Result 4: *According to the linear regression emerge that risk aversion, as measured by the Holt and Laury experiment, has a significant statistically negative impact on FDI. This result is consistent to what demonstrated before. In fact, in HL, the average number of the switch line (line at which a subject chooses to switch from lottery A to lottery B) was 11. The identification of the switch line allows to identify an interval estimate of the subjects' coefficient r of relative risk aversion. Thus, given the structure of the battery of lotteries a switch line from L11 to L19 would reveal risk aversion (the greater the number of the switch line, the higher r, the degree of risk aversion. Therefore, given the fact that firms are risk-averse, we can argue that the expected utility of FDI decreases and the one of exports increases.*

As far as the analysis of moderating factor is concerned, the interaction between these variables and FDI was found to be not significant. However, it should be noted that the number of observations is limited. Therefore, among those variables that are not statistically significant, there are some that could be interesting to assess and could provide some significant indications to the policy-makers.

The study collected in this thesis is a part of a big research developed by Politecnico di Milano in collaboration with UNCTAD (United Nations

Conference on Trade and Development, Genève) started on March 2016. Polimi team was composed by three different pairs of students, sharing the same common goals. Moreover, each pair focused on different specific topics related to the objectives of the thesis, and come as a part of a more articulated and wide analysis regarding the importance of entrepreneurship for development. The extended research analysis includes an impact evaluation of a training program aimed at spurring entrepreneurship, and international entrepreneurship, in developing countries. This analysis suggested that training programs can get better and what are the main determinants they should work on in order to enable an international mind-set. Our work contributes in this direction by showing which are the individual-level characteristics of the managers that determines their choices in the internationalization process.

Chapter 1

Literature review

Between 1945 and 1980 many developing countries in Africa, Asia, Latin America and the Caribbean used several policies and strategies in their development pursuits, in particular two forms of industrial policy were massively implemented (Acs & Audretsch, 2010). The first one was import substitution: a process of industrialization by producing previously imported goods for the country's domestic market (Acs & Audretsch, 2010). The second one was export promotion: in the 1980s many developing countries faced the economic crisis and turned to this second strategy whose aim was to promote their internal output (Acs & Audretsch, 2010).

However, with the exception of some countries in East Asia, none of the above mentioned industrial strategies showed in meaningful economic development. Both development approaches relied on strong state intervention and persistent market distortions to sustain their viability (Acs & Audretsch, 2010).

After failed attempts at development through import substitution and infant industry protection programs and somewhat mixed results from export promotion strategies, developing countries are beginning to focus on their business environments and generating an economic space which is favourable to private enterprise, both domestic (i.e., local entrepreneurs) and foreign (i.e., foreign direct investment) (Acs & Audretsch, 2010). Indeed, the promotion of

entrepreneurship and the promulgation of small and medium sized enterprise (SME) policy has become an important development prescription in recent years (Word Bank, 2016).

Aim of the literature research, hence, is to understand the relationship between entrepreneurship in international business and the economic development. More specifically, our analysis introduces the Small Business Economics issue dealing with the integration and the relation of entrepreneurship and economic development in order to better figure out entrepreneurship in developing countries.

The analysis begins by presenting the relation between entrepreneurship and development. It then focuses on briefly reviewing the two strands of international entrepreneurship research: comparative international entrepreneurship and cross-border entrepreneurship. Comparative international entrepreneurship research examines cross-national differences in entrepreneurial activity, including new and small firms, as well as "entrepreneurial" large and established organizations. This part also includes the examination of the linkage between entrepreneurs and the environment where they operate, explaining why developing a strong entrepreneurial ecosystem is a crucial aspect for the attractiveness of a country. The next step examines the international role of entrepreneurship, analysing the role of entrepreneurs in the global value chain. In section 3, the aim is to provide a general overview and definition of both incubators and training programs and the main differences which characterize them. Still, in the two following sections, the focus is to better understand the role of incubators and training programs in developing countries, considering their advantages and disadvantages, and to what extent they are a source for development. Moreover, in section 6 we focus on understanding the outcomes of specific EET programs taking into account existing evaluations.

Yet, section 8 aims to assess whether entrepreneurship-training programs have differential effects on individuals based on their personality or psychological

characteristics such as risk aversion and locus of control. Indeed, Risk aversion and Locus of control represent the main characteristics on which we will focus on in the design of the experiments. The last section describes the two entry mode strategy comparing their effects. Then, we will provide a theoretical framework based on existing theories relevant to understand the importance of FDI when firms start a new business abroad. Finally, we will identify the main determinants of FDI explaining the rationale behind the two entry mode strategy.

1.1 Entrepreneurship and Development

The relationship between entrepreneurship and economic development is quite complex. Different types and phases of entrepreneurship may impact economic growth differently in different parts of the world (Sternberg & Wennekers, 2005). General speaking, researchers have identified a U-shaped relationship

Figure 1 - GEM model of entrepreneurial activity
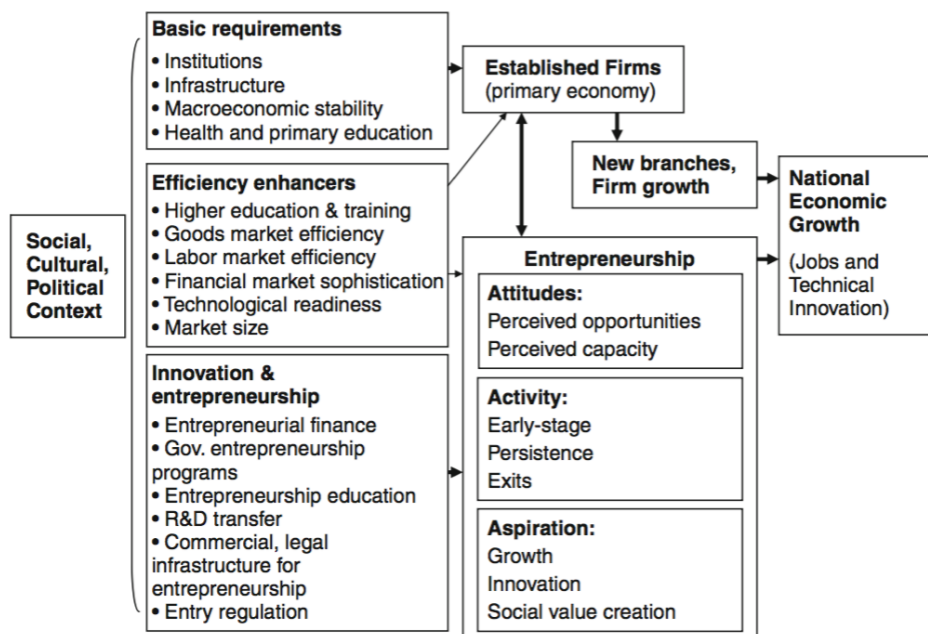
Source: (Acs & Audretsch, 2010)

between entrepreneurship and economic development, as measured by GDP per capita at the country level. The U-shaped relationship implies a higher rate of entrepreneurial activity in low-income countries than in middle-income countries (Acs & Audretsch, 2010). This result might reflect the fact that entrepreneurs in developing countries are less innovative and tend to be proportionately more 'necessity' motivated (Acs & Audretsch, 2010). Higher levels of GDP may therefore be associated with more 'innovative' forms of entrepreneurship.

In addition, from a theoretical perspective the relationship might work in both directions: entrepreneurship may affect economic development, which in turn may affect entrepreneurship. Based on the existing evidence on the link between entrepreneurship and economic growth, and "projecting" this evidence on the GEM data, Zoltan Acs and László Szerb, (2009) developed a global entrepreneurship index (GEI). Two main assumptions served as their point of departure: (i) attitudes, activity, and aspirations need to be included in such an index; (ii) the effect of these components on economic development is a function of the presence and level of specific institutional conditions. They identify several components for each sub-indicator. Typically, these components consist of one genuine entrepreneurship indicator (mostly derived from GEM data) and one institutional climate indicator (mostly from sources outside GEM).

Acs and Szerb argue that opportunity-driven entrepreneurial activity makes a bigger contribution to economic development when doing business has been made easier in the country. Thus, they combine the GEM measure of opportunity-driven early-stage entrepreneurial activity with the World Bank's measure of "ease of doing business" into a unique measure. This measure is in turn combined with five other measures dealing with entrepreneurial activity, forming a sub-indicator of entrepreneurial activity. Finally, combining three

sub-indicators dealing with entrepreneurial attitudes, activity and aspiration results in an overall index for entrepreneurship: ***the global entrepreneurship index (GEI).***

The contributions in the literature illustrate that it is possible to jointly study integrate entrepreneurship and economic development. Moreover, the analysis shows that not only the entrepreneur can be modelled to address issues concerning economics development, but such modelling allows us the possibility to further understand the role of the entrepreneur in the development process. *De facto* entrepreneurship does make a fundamental contribution to development by fostering structural change and growth and acting as a tool for people to escape from poverty and inequality (Naude, 2010a).

Entrepreneurship is therefore a valid and important subject of study, and development is a worthwhile subject of study for entrepreneurship and management scholars. The growing availability of more and better data from emerging and developing economies, the increasing adoption of rigorous evaluation methods in policy assessments, are positive aspect useful for the intersection of development and entrepreneurship.

1.2 The Importance of the entrepreneurial ecosystem

Why some firms prefer to invest in a country rather than in another one is a broad question with a wide range of answers. Though there are many reasons behind this choice, our aim is to explain why developing a strong entrepreneurial ecosystem is a crucial aspect to attract new foreign investments. Multinational firms willing to invest abroad face an asymmetry information

problem: they do not know the market and need to pay for having information about that market. The internationalization process of a company requires time and money; as a matter of fact, firms have to find a skilled workforce to start operation abroad, that is why countries with an already established network system are more appealing than others: firms do not have to waste time training new employees as already skilled.

Entrepreneurs as gap fillers

With the collapse of centrally planned economies, it has been realized that governments cannot allocate resources efficiently and that markets are, indeed, necessary. Moreover, the recognition of the importance of the entrepreneur and the necessity of the markets for the entrepreneur to operate has led many countries to begin to work on making more accessible their markets by eliminating barriers to entrepreneurship and other market failures (Acs & Audretsch, 2010). Entrepreneurship is essential for development because in developing countries entrepreneurs fill in important gaps left by incomplete and underdeveloped markets (Leff, 1979). Indeed, a key function of entrepreneurship in developing economies is precisely to mobilize factors such as capital and specialized labour which, being imperfectly marketed, might otherwise not be supplied or allocated to the activities where their productivity is higher (Leff, 1979). Entrepreneurs respond to these market imperfections by using various gap-filling: overcome underdeveloped markets for primary factors, risk and intermediate products in developing countries such as Panama (Leff, 1979). Per capita income growth requires shifts from less productive to more productive techniques per worker, the creation or adoption of new commodities, new materials, new markets, new organizational forms, the creation of new skills and the accumulation of new knowledge. The entrepreneur as gap filler and input-completer is probably the prime mover of

the capacity creation part of these elements in the growth process (Leibenstein, 1968).

Definition of an entrepreneurial ecosystem

Entrepreneurial activity arises only in those environments where there is an eco-system able to trigger, and transform in business, the creativity of entrepreneurs. These systems rely on specific characteristics that allow the formation of a new market and affect directly the entrepreneurial performances in terms of firms, employment and wealth while the final impact is on the economic growth, job creation and poverty reduction of the country itself. A definition of entrepreneurial eco-system can be the following:

> "A set of interconnected entrepreneurial actors (both potential and existing), entrepreneurial organizations (e.g. firms, venture capitalists, business angels, banks), institutions (universities, public sector agencies, financial bodies) and entrepreneurial processes (e.g. the business birth rate, numbers of high growth firms, levels of 'blockbuster entrepreneurship', number of serial entrepreneurs, degree of sell- out mentality within firms and levels of entrepreneurial ambition) which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment" (Mason, Colin; Brown, 2014).

In Figure 2 are shown the eight major pillars and determinants that are essential to define an entrepreneurial eco-system.

Figure 2 - Entrepreneurial Eco-system and its determinant

ENTREPRENEURIAL ECO-SYSTEM							
Accessible Markets	Human resources workforce	Funding and finance	Mentors advisors support system	Regulatory framework and body	Education and training	Major universities as catalysts	Cultural support
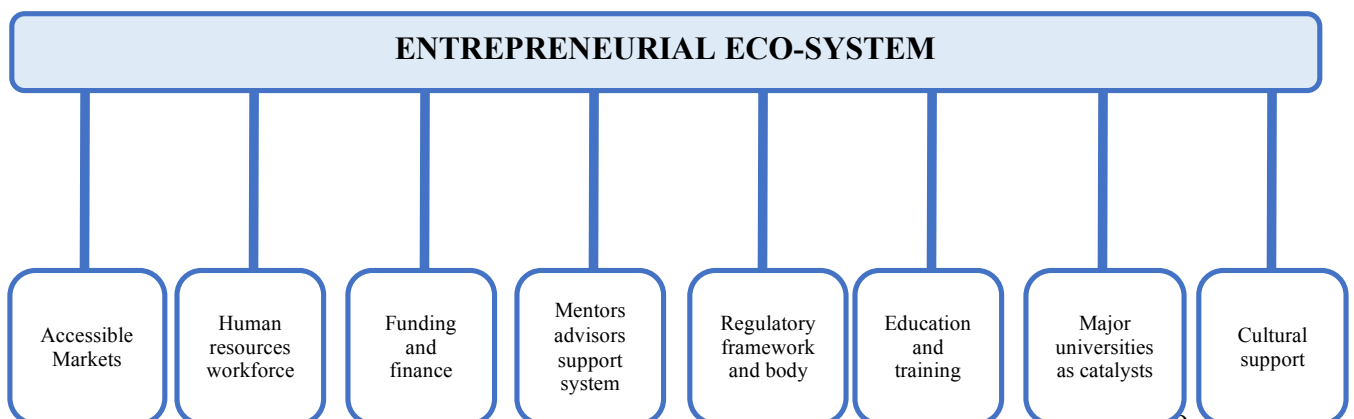
DETERMINANTS OF ENTREPRENEURIAL ECO-SYSTEM PILLARS

Accessible Markets – Domestic Market: large/medium/small companies as customers, governments as customer. Foreign Market: large/medium/small companies as customers, governments as customer.

Human Resources Workforce – Management talent, technical talent, entrepreneurial company experience, outsourcing availability, access to immigrant workforce.

Funding and Finance – Friends and family, angel investors, private equity, venture capital, access to debt.

Mentors Advisors Support System - Mentors/advisors, professional services, incubators/accelerators, networks of entrepreneurial peers.

Regulatory Framework and Body – Ease of starting a business, tax incentives, business-friendly legislation/policies, access to basic infrastructure, access to telecommunication/broadband, access to transport.

Education and Training – Available workforce with pre-university education, available workforce with university education, entrepreneur-specific training.

Major University as Catalysts – Promoting a culture respect for entrepreneurship, playing a key role in idea-formation for new companies, playing a key role in providing graduates to new companies.

Cultural Support – Tolerance for risk and failure, preference for self-employment, success stories/role models, research culture, positive image of entrepreneurship, celebration of innovation

Source: (World Economic Forum, 2013)

The listed attributes, principles, and pillars show that the entrepreneurial ecosystem approach contains a shift of traditional economic thinking about businesses, and especially on markets and market failure, to a new economic view on people, networks and institutions. The common denominator appears to be the fact that entrepreneurs create new value, organized by a wide variety of governance modes, enabled and confined within a specific institutional context. This does not mean that companies and markets (and market failure) do not impact. But markets and companies are governance modes which, like all other forms of governance, will always be imperfect. Moreover, entrepreneurship is often about companies and markets "in the making", and not about situations that come close to a 'fully efficient market equilibrium', as in the ideal of the market failure approach (Stam, 2015).

1.3 International entrepreneurship for development

As we have seen above, the economic benefits of entrepreneurship and its role in achieving economic and social development have been widely recognized beneficial for economic growth and development. Entrepreneurship has been remarkably revamped over the past three decades in countries that achieved substantial poverty reduction, such as in China (W. Naudé, 2013). Moreover, donors and other forms of business angels have turned to entrepreneurship to improve the effectiveness and sustainability of aid (W. Naudé, 2013). Therefore, fostering entrepreneurship has become a key element of several development programs around the world (World Bank, 2005). At the same time, entrepreneurs could exploit new opportunities in developing countries due to the increasing fragmentation and internationalization of the global value chains (GVCs) and global sourcing. For many countries, especially low-income

countries, the ability to effectively insert themselves into GVCs is an essential condition for their development. This implies an ability to access GVCs, to compete successfully and to "capture the gains" in terms of national economic development, capability to build and generate more and better jobs with the purpose of reducing unemployment and poverty (Gereffi & Fernandez-Stark, 2011). Participation in the GVCs has been shown to open prospects for local companies, thus leading to economic benefits, in terms of productivity, sophistication and diversification of exports (OECD, 2015). The social, cultural and political contexts play a key role in fostering local entrepreneurship, namely cross-border or international entrepreneurship, which could theoretically be involved in international paths and global networks. Nevertheless, the economic literature evidences that business skills and managerial capital are key determinants of major social problems such as unemployment, poverty and crime as well as a crucial limitation to growth in developing countries (Meghir, Kugler, & Attanasio, 2009), and this deficit might obstruct the rise of entrepreneurial activities and their internationalization, thus constraining this development path. However, these mind-sets, types of knowledge, and skills can be effectively taught, and learned. As a result, several educational training programs have been used as potential tools to promote entrepreneurship in general and international entrepreneurship in particular.

A number of training programs for disadvantaged workers have been introduced in recent years in many Latin American countries, including Argentina, Brazil, Chile, Colombia, the Dominican Republic, Panama, Peru and Uruguay (Meghir et al., 2009). Despite the increasing number of such programs worldwide, a complete agreement about their effectiveness is still missing reflecting differences in the delivery methods, the context and the circumstances of beneficiaries (Valerio, Parton, & Robb, 2014). Precisely, the analysis of different programs with different goals and methods highlighted different effects

measured as entrepreneurial mind-sets, entrepreneurial capabilities, entrepreneurial status, and entrepreneurial performance (Valerio et al., 2014).

1.4 Incubators and training programs

Fostering entrepreneurship means first of all create support for entrepreneurs, developing the right environment to ensure rapid growth and success. In the last decades, incubators played an important role to transform a new established start up in a successful firm. In fact, first generation incubators, from '80s to '90s, aimed at job creation and new venture creation both catalysts for economic development. In the last fifteen years they boomed shifting the focus from traditional topics (new venture creation, job creation, economic development) to specific ones (transfer of technology, sector-specific objectives) and providing higher quality management advice and business support services (Akçomak, 2009). According to literature, incubators can be qualified either considering their mandate (for-profit or not-for-profit), their funding scheme (public, private or mixed sponsor) or their objectives (mixed-use or niche) (Scaramuzzi, 2002). Typical niche incubators are the ones related to technology and bio-technology. Incubators can be classified in different ways, but a thorough analysis of available literature suggests to highlight the following five categories to embed all types of incubators:

1. *Technology incubators*: they focus on a wide variety of high technology fields such as new materials and environmental technologies. They usually have an affiliation with university with a focus on a specialized technology that coincides with the area of expertise at the university. They provide space and general service to start-ups, which originate

from university, research institutes and state-owned enterprises (Chandra, 2007).

2. *Specialized high-tech incubators*: they focus on a certain aspect of high-technology to capitalize on proximity to university resources or other sources of funding. They are often affiliate to specific industry clusters and to corporations that support their development, this is very common in Brazil (Chandra, 2007).

3. *University based incubators*: they are established in or by university campuses. Universities are important to link technology, research, capital and know-how to leverage entrepreneurial talent, accelerate the development of new technology firms, and speed-up the commercialization of technology (Scaramuzzi, 2002).

4. *Virtual incubators*: they are non-property-based incubators ventures which require low fixed investments and are regarded as a possible way of providing SMEs in areas with a low critical mass. They usually generate externalities among firms linked via computer and telecommunication networks (Scaramuzzi, 2002). Their network is regionally based and mostly online. The funding scheme is composed by private investors and do not have physical infrastructures (Zedtwitz & Grimaldi, 2006).

5. *Private corporate incubators*: they are in-house incubators to grow businesses related to the entity's needs. They are usually funded by their parent corporations or venture capitalist (Chandra, 2007). The main advantage of this type of incubator is that large companies can promote new ventures selectively in order to gain the benefits of innovation.

1.5 Incubators in developing countries

The aim of our analysis is detect what are the main characteristics of incubators and how they are managed in developing countries.

First of all, in order to better explain the role played by incubators in a business environment, we have to mention industrial clusters as an imporant aspect that is widely present in all emerging countries and explain the link between them. According to Porter (1990), an industrial cluster is a geopgraphic cooperative group that includes suppliers, consumers, peripheral industries, governments and supporting institutions like universities. The author proposed a structure to analyze local clusters using the well-known four-dimension diamond metaphor that includes 'factor conditions', 'demand conditions', 'related and supporting industries' and 'firm strategy, structure and rivalry' (Porter, 1990). Incubators are located in the centre of four dimensions where each dimension of industrial clusters not only interacts with the others but also affects the incubators, and incubators in turn affect each dimension of the cluster correspondingly (Figure 3) (Hsu, Shyu, Hsiao-Cheng, Chao-Chen, & Lo, 2003). Hsu et al. (2003) found a positive feedback interelation between the Hisinchu industrial cluster, which affects the performances of the ITRI incubator, and ITRI incubator which works as a catalyst to accelerate innovation and enterprise. The case study provided by the researchers represented a succesful case of usefulness of incubators in Asian devolping countries (Hsu et al., 2003).

One of the key fact of incubators in developing countries is that most of them are not-for-profit, with funding generally provided by public resources such as central or local government, altohugh some resources may also be provided by other sponsors or partners, including from the private sector.

Figure 3 - A model of interactions between incubators and industrial clusters
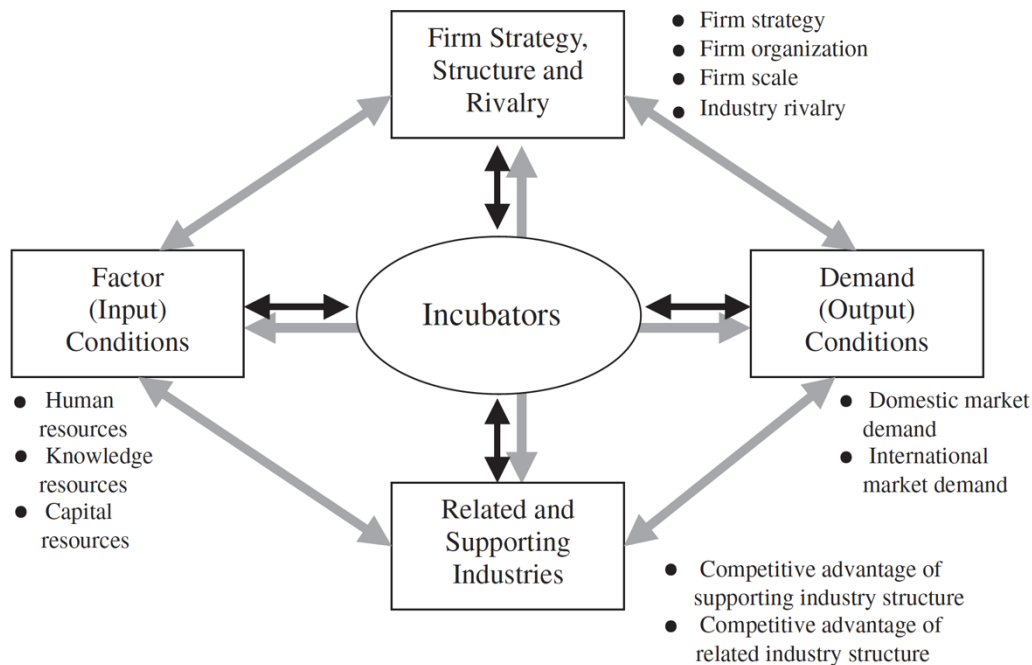
Source: (Hsu et al., 2003)

One of the critical issue of incubators in emerging countries is that they lack of private investors: for-profit incubators are not so popular because of the lack of venture capitalist firms which want to undertake the risk of giving money for equity of the firms. This trend leads incubators to rely on government both in terms of promotion and funding, being unable to self-sustain theirs operation: self-sustenance requires networking, strategic planning and diversified funding sources while government should only facilitate incubators to become self-suistaninable (Akçomak, 2009).

Moreover Akçomak (2009) identified other three additional relevant weeknesses in his study, when considering incubators in devolpoing countries:

- *The focus on tangible services rather than intangible ones* - in developopng countries the emphasis is on tangible services, such as office space, infrastucture and laboratories while is paid less attention to

intangible and specialized services, such as networking strategy, assistance in making business plans and marketing, for tenant firms. In many cases there has not been a balanced mixed between tangible and intangible services that are offered by the incubators (Akçomak, 2009).

- *Lack of qualified personnel and skilled managers* - managerial skills of incubator managers and staff are critical for the success of tenant firms and the incubator. In almost all emerging countries incubator managers are neither business-orientend nor have a sufficient busines background. This leads the incubator to the impossiblity of embedding tenants firms into networks and having problem in evaluating and developing their business plan. Finally, incubators increase the demand for managers but it is impossible to train and generate qualified incubators staff at the same speed (Akçomak, 2009).

- Lack of planning and creativeness in solving problems and providing services: each incubator should provide three sets of indicators:

  a) performance outcomes: monitoring and screening tenants to asses whether they are on the right track and whether they meet their targets (Akçomak, 2009).

  b) Management policies and their effectiveness: measuring the effective use of the resources against the incubator's objectives (Scaramuzzi, 2002).

  c) Services and their value added: assessmnet of the perceived value added to the client firms in terms of services and facilities provided, and the perceived value associated to the knowledge sharing and to the incubator's environemnt (Scaramuzzi, 2002).

1.6 The role of training programs

A current focus of entrepreneurship promotion is the role of mind-sets and skills in enabling individuals to both recognize and capitalize on entrepreneurial opportunities. In particular, the aim of our analysis is detect interventions that stimulate individuals' decisions to become and succeed as entrepreneurs. To support and strengthen our analysis we rely on Levie and Autio (2008) studies that highlights how education provides individuals with the cognitive ability to match potential entrepreneurial opportunities with their respective skills and abilities.

According to the literature, *Entrepreneurship Education Training (EET) programs represent academic education or formal training interventions that share the broad objective of providing individuals with the entrepreneurial mind-sets and skills to support participation and performance in a range of entrepreneurial activities.*

The study is structured by four key points concerning EET programs:

> *(a) what are typology for EET programs (b) Who do EET programs target? (c) What outcomes do EET programs aim to achieve? and (d) Areas for Further Entrepreneurship Education and Training Research*

What are typology for EET programs?

EET programs can be classified into two distinct categories: **education and training programs.** More deeply both aim to stimulate entrepreneurship, but they are distinguished because of their variety of program objectives or outcomes. On one hand EET programs tend to focus on building knowledge and skills *about* or *for the purpose of* entrepreneurship. On the other hand,

Entrepreneurship training (ET) programs, tend to focus on building knowledge and skills, explicitly in preparation for starting or operating an enterprise.

<u>Who Do EET Programs Target?</u>

There are various target groups of EET programs, including: *secondary education students, higher education students, potential entrepreneurs,* and *practicing entrepreneurs*. More specify our analysis provides details about the characteristics of the two last participants typology that these programs target. Concerning potential **entrepreneurs**, entrepreneurship programs aim at recruiting a range of participants from potential high-growth or opportunity-driven entrepreneurs to necessity-driven self-employed entrepreneurs.

As regards training programs targeting **practicing entrepreneurs**, interventions recruit a range of participants, from high-growth entrepreneurs to necessity-driven, self-employed entrepreneurs.

<u>What Outcomes Do EET Programs Aim to Achieve?</u>

Part of EET programs objectives refers also to entrepreneurial mind-sets and capabilities as well as entrepreneurial status and performance. Across program types, there is an increased emphasis on outcomes in the status and performance domains; and among EET programs, there is also a significant emphasis on mind-sets (and the associated outcomes of socio-emotional skills and entrepreneurship awareness). This trend is to be expected as the target audience changes from students to practicing entrepreneurs and, in turn, as success is measured according to an individual's increased income or profitability.

Eventually some evaluations do look at the development of participants' socio-emotional skills as well as entrepreneurship awareness, suggesting that

entrepreneurial mind-sets are valued beyond EET students.

1.7 Further entrepreneurship education and training research

Nowadays understanding the outcomes of specific EET programs is a growing area of interest for a number of researchers. However, existing evaluations on the outcomes of EET programs are methodologically weak.

In addition to methodological weakness, studies find mixed results. For example, on one hand some studies point out a positive short-term influence on entrepreneurial intentions. On the other hand, a set of other studies, as detailed by Lautenschläger and Haase (2011), highlight insignificant or negative effects. Furthermore, evaluated EET outcomes can vary across types of training. A meta-analysis by Martin, McNally Jeffrey J. and Kay (2013) finds differential effects between academic-focused and training-focused EET interventions.

Eventually, further experimental studies specifically investigate the impacts of EET programs, tracking graduates of EET programs in order to see whether they become business owners or go into self-employment. Moreover, it is not completely clear about teaching approaches, corresponding learning outcomes (Lautenschläger & Haase, 2011), the content of certain programs or learning strategies helps develop skills that result in entrepreneurial activity. Given the diversity of EET programs, future training research could test the relative importance of different combinations of program characteristics. This may bring critical aspect helping to identify what types of programs work for particular beneficiaries to achieve particular outcomes, within particular contexts.

1.8 Risk aversion and locus of control

A growing literature examines the relationship between personality traits and entrepreneurship, but no previous studies explore whether personality or psychological traits predispose individuals to benefit more from entrepreneurship training program. More in details, a relatively new and growing literature examines whether the personality or psychological characteristics of individuals are important determinants of entrepreneurship in addition to the more traditionally determinants such as education, family business experience and access to financial capital. However, it is not completely clear whether individuals with ''pro-entrepreneurial'' personality characteristics benefit more or less from entrepreneurship-training programs. Therefore, the main purpose of this analysis is to examine whether entrepreneurship-training programs have differential effects on individuals based on their personality or psychological characteristics such as risk aversion and locus of control. It is possible that some individuals possess the psychological attributes that predispose them for success in business ownership, but do not achieve it because of a lack of business exposure, information and expertise. On the other hand, individuals with personality characteristics that predispose them for business success might not benefit from entrepreneurship training.

Moreover, individuals who possess the personality characteristics predisposing them for business success may be more likely to select entrepreneurship training program when they know these programs will benefit them. Business ownership is risky and it is evident that individuals who are more risk tolerant are more likely to become entrepreneurs. Still, one of the key characteristics of business ownership is having autonomy in decision making. Furthermore, related to this finding, there is some evidence that having an internal locus of control is also an

important determinant of entrepreneurship (Fairlie & Holleran, 2012).

Indeed, Individuals who have a high internal locus of control are ones that believe that they will determine their performance and future outcomes by their own actions instead of external forces. Being innovative has also been found to contribute to entrepreneurial success (Fairlie & Holleran, 2012).

One area of potential improvement is in the participant's knowledge of what it takes to be an entrepreneur. By receiving more information about entrepreneurship through the training program, individuals who possess entrepreneurial personality traits may be more likely to ultimately try self-employment than individuals who do not possess these characteristics. But, even with a pre-disposition towards entrepreneurship, the effects may be small or non-existent as studies of entrepreneurship training and education programs do not provide clear evidence of positive overall effects.

Eventually Entrepreneurship training may thus remove barriers for risk tolerant entrepreneurs. However, more research is clearly needed on the effectiveness of entrepreneurship programs and their potential for assisting different groups of the population in starting their own businesses.

1.9 FDI and Export

A firm when starting a new international business can serve foreign demand in two ways, either it can export its product or it can create productive capacity via foreign direct investment. Thus, in order to better figure out the pro and cons of FDI and export we will structure this paragraph as follow. First we briefly describe the two entry mode strategy comparing their effects. Then, we will provide a theoretical framework based on existing theories relevant to understand the importance of FDI when firms start a new business abroad.

Finally, we will identify the main determinants of FDI explaining the rationale behind the two entry mode strategy.

Foreign Direct Investments

According to what UNCTAD states, Foreign Direct Investments (FDIs) refers to an investment made to **acquire lasting interest** in enterprises operating outside of the economy of the investor. The most important characteristic of FDIs, which distinguishes them from foreign portfolio investment, is that it is undertaken with the intention of exercising control over an enterprise. The forms of investment by the direct investor which are classified as FDIs are equity capital, the reinvestment of earnings and the provision of long-term and short-term intra-company loans (between parent and affiliate enterprises). As countries do not always collect data for each of those components, reported data on FDIs are not fully comparable across countries. Foreign Direct Investments are one of the main forms of internationalization and they have been expanded strongly over the last 20-30 years. In addition, historically, FDIs have been carried out mostly by the developed economies, however in recent years (from 2000 on) also the developing economies are even more involved in them.

Pro and cons: Foreign Direct Investments are believed to positively affect the development of those countries into which they are made, and, in particular, the higher the number and the amount of FDIs received the higher the development. Thus, Foreign Direct Investment (FDI) plays an extraordinary and growing role in global business. It can provide a firm with New Markets and Marketing Channels, Cheaper Production Facilities, Access to New Technology, Products, Skills and Financing. For a host country or the foreign firm which receives the investment, it can provide a source of New Technologies, Capital, Products, Organizational Techniques, Management Skills, and as such can provide a

strong impetus to Economic Development. Still, FDI is seen as the fundamental part for an open and successful international economic system and a major mechanism for development. For this reason, Foreign Direct Investments have become the major economic driver of globalization, accounting for over head of all cross-border investments. Moreover, FDI allows lower marginal cost than exports. The disadvantage is that FDI is mostly irreversible and, hence, entails the risk of creating under-utilised capacity in case the market turns out to be smaller than expected. Finally Compared with export and other short-term entry mode strategy, FDI is much more stable and resilient to changes in economic environment.

Several forms of Foreign Direct Investments exist:

- **Green-field**: Through a green-field a parent company starts a new venture in a foreign country by constructing new operational facilities from the ground up. In general green-field investments occur when multinational corporations enter into developing countries to build new factories and/or stores. Green Field Investment is new facilities or the expansion of existing facilities. Greenfield investments are the primary target of a host nation's promotional efforts because they create new production capacity and jobs, transfer technology and know-how, and can lead to linkages to the global marketplace.

- **Brown-field**: Through a brown-field a company purchases or leases existing production facilities in a foreign country to launch a new production activity;

- **Cross-border M&A**: Through a cross-border M&A a firm, called acquirer, acquires another existing firm, called target; Cross - Border Acquisitions occur when the control of assets and operations is

transferred from a local to a foreign company, with the local company becoming an affiliate of the foreign company.

Export

Exporting is the most traditional and well established form of operating in foreign markets. It can be defined as the marketing of goods produced in one country into another.in such entry mode strategy no direct manufacturing is required in an overseas country. Most of the largest companies operating in advanced economies will derive a substantial portion of their annual revenues from exports to other countries. The ability to export goods helps an economy to grow by selling more overall goods and services. Basically firms have two main alternatives when exporting:

- Indirect export: There is an indirect export when the exporter does not seek export sales and when the exporter concentrates on domestic market and leaves export to experts;
- Active export: There is an active export when the exporter actively participates in finding market abroad;

Pro and cons: Export is a less-risky solution since manufacturing is home based therefore, it gives an opportunity to "learn" overseas markets before investing. By entering through export firms reduces the potential risks of operating overseas. The disadvantage is mainly relative to the lack of control. Moreover, exporting is not attractive when lower-cost manufacturing locations exist, there are high transport costs and high tariff barriers

1.9.1 Theoretical framework

Most theories of international trade are dedicated to some important issues aimed at explaining why firms undertake Foreign Direct investments becoming multinational companies. The first issue is based on explanation of why some firm invests and some others do not. The second refers to why some firms invest in some countries and some firm in other countries. Finally, the third issue concerns why some firm prefer FDIs and some others prefer other forms of internalization such as export. these questions have been partially answered from modern and dynamic theories. Thus we will briefly describe the contribute of some theories: Vernon's theory of product lifecycle, Eclectic paradigm (OLI framework) and Stage theories. More specifically, these theories are the ones that exhibit the strongest elements of dynamism: situation change, and firms adapt to changes as well as generating them (Vernon, 1966).

Vernon's theory of product lifecycle: this theory explains the internationalization process of a firm in relation to the product life cycle (Vernon, 1966). According to Vernon, **FDIs depend on the product lifecycle**. In particular, it is possible to distinguish among four stages:

- ***Introduction***: In the introduction phase the product enters on the market for the first time and its entrance is characterized by high uncertainty and risk of failure. Since the innovative product producers benefit from a monopolistic position and sunk costs are too high the **internationalization**, especially through FDIs is not worthy. Therefore, in this stage the firm should only focus on local market without taking further risk of penetrating a foreign market.

- ***Growth***: In the growth phase the product becomes successful, its features start to become stable, and thus production can be standardized. In this phase the

innovative product producers still benefit from almost the monopolistic position, but tanks to the increasing demand they can leverage on economies of scale. In this scenario internationalization can help companies to improve profitability first by exporting and, after a certain threshold, by producing directly in the market where the product is sold. In this phase trade and FDIs are substitute;

- *Maturity*: In the maturity phase the product gains its momentum becoming more and more diffused. This leads new firms to enter the market by imitating the new product and the monopolistic advantage of the fist-producing firms is gradually eroded. As a consequence, firms must be more efficient and so that they would place **FDIs in developing countries** to delocalize labour intensive stages of production;

- *Decline*: In the decline phase the product loses its momentum and costs cannot be reduced under a certain threshold. In this scenario the competitive pressure increases and firms move the **whole value chain in developing countries**;

Given this detailed lifecycle description Vernon suggested that Companies tend to leverage both export and *FDIs*. However, *FDIs* **are** generally **preferred** to export when (1) there are threats of rivals beginning imitation in foreign countries, (2) production costs are lower in other countries, and (3) there are a lot of import control from foreign countries.

Stage theories developed by the Scandinavian school are models which explain and explore the stages of the internationalization path. In particular, this theory focus on strategy in relation to the stages and modalities of internationalization that companies go through. According to this theory the decision about the future modalities, countries of interest and resources to be committed abroad

depend on the path already followed in the internationalization process. Therefore, they explain two typical patterns of internationalization:

More in details the Scandinavian School's model explains two typical patterns of internationalization:

- The first concern the involvement into a specific foreign market/country. More specifically this tends to increase, meaning that firms initially tend to simply do business with a foreign market/country and that, after a while, they gradually tend to increase their involvement in that markets/countries. In particular firms usually start exporting their production via agents, then they set up agreements and alliances to open sales subsidiaries and finally they carry out FDIs setting up production subsidiaries;

- The second pattern refers to the spread of internationalization from the home country to others. Thus according to this pattern, Internationalization spreads from close countries to far countries, meaning that firms initially expand in countries which are characterized by low physical, and thus also cultural distance, and then they tend to enlarge to farthest countries;

These patterns have two elements in common: first of all, they result from incremental decisions (the outcome of a decision consists in the input of the subsequent decision), and secondly they unfold along a linear sequence (from small to large commitment).

The Eclectic paradigm: the choice of MNEs to establish in a country is explained by the (Dunning, 2001). Expressed for the first time during the 1950s (Dunning, 1958) this theory describes the reasons of superiority of MNEs and the reasons that lead them to move their activities in a certain country. The three

letters of the acronym summarize the advantages that MNEs experience: ownership (e.g. economy of scale), location (e.g. lower costs in the country selected for the different activities) and internationalisation (e.g. access to new markets). Helleiner (1989) gives a complete description of the role of MNEs in developing countries. He makes an overview of the history of MNEs' activities after the Second World War and describes both the positive and the negative aspects of the presence of foreign firms in developing countries. In his overview, he describes the different forms of participation of foreign firms in the host economy (like joint ventures), underlines the impossibility of making generalization because each sector has its own characteristics and explains the relationship occurring with governments. He also illustrates the problem of transfer pricing: the multinational enterprise, in order to pay low taxes, attributes the production to countries where the financial constraints are lesser, even if the real production has taken place elsewhere.

Moreover, in recent years, a new affair is taking place: the countries of origin of multinational firms are changing. In fact, although MNEs from developed countries are still very important, MNEs from developing countries are approaching the international scenario (Madhok & Keyhani, 2012). They have to face more difficulties than traditional MNEs: to the 'liability of foreignness' they combine the 'liability of emergingness'. They have to battle for being accepted and for demonstrating the quality of their products. At the same time, on the contrary, they could have a better knowledge of the surrounding environment, if their home countries are quite similar to the host ones in terms of institutions.

1.9.2 Impact of FDI on entrepreneurship

Impact of FDI on the host country entails different aspects and it can be either

positive or negative.

Positive effects: positive effect regards both the home and the foreign country. First of all, once FDI come in a country they make the global economy more integrate and inter-correlated and this is a positive effect especially for developing countries, whom economies are usually closer and weaker. FDI introduce in the host countries a world-class technology and technical know-how in terms of productive chain, organisational skills, new products and machines. Among the supporter of positive effects of FDI within the host-country we can include Borensztein, De Gregorio and Lee, (1995). They recognize the importance of FDI for technology transfer, underlining that necessary condition for this transfer is an adequate human capital endowment. Both Borensztein et al. (1995) and Campos and Kinoshita (2002) find that FDI positive stimulate economic growth of the host country. Moreover, one of the most important positive consequences regards the "spill over" effect: it should be kept in mind that firms bring their knowhow and technologies to the host country, but these technologies can become available also for domestic firms whereas spill over occur. Other positive effects are related to the selection process that happens after the entry of the firms through FDI in the foreign country: less competitive firms leave the market and only the more efficient ones survive. This fact will also imply positive consequences for consumers: accordingly, to the law of demand and supply, price of goods will be lower and quality of goods will be higher. Eventually, the presence of foreign investments of course increases fiscal revenues and thus the States could be stimulated to make better the business conditions, for example in terms of rule of law, control of corruption, bureaucracy, tax rate and endowment of infrastructure.

Negative effects: The impact of FDI on the domestic economy can also be

negative. Another negative consequence of the entry of foreign firms is the possibility that potential entrants do not start a business. In fact, if they can obtain more advantages (e.g. higher wages) like employees than independent entrepreneurs, they will not become entrepreneurs. This is a matter because opportunity-driven entrepreneurs can add more value to the country's economy than necessity ones, can assume other workers and can bring more innovation.

1.9.3 Determinants of FDI

The foreign direct investment concept has become an important role in the economic development of large number of countries in the world. Therefore, now we attempt to identify the main determinants of FDI flows at the macro level. More specifically, we want to understand which are the macro characteristics of the countries that determine their willingness to go for an FDI instead that for export.

Thus, we will here deal the macro determinants of FDI, those factors that influence the profitability and the choice to invest at an economy wide level. In the following section we will discuss the adoption of FDI rather than export. *De facto* both macro and micro determinants may be necessary conditions for FDI and their lack may prevent the possibility of Foreign direct investments adoption.

Among the different variables, there are five affecting FDI inflow significantly.

Size and growth of the host country

Market-oriented FDI aims to set up enterprises to supply goods and services to the local market. FDI may be undertaken to exploit new markets. The market size, prospects for market growth, and the degree of development of host

countries are very important determinants for FDI. The general implication is that host countries with larger market size, faster economic growth and higher degree of economic development will provide more and better opportunities for these industries to exploit their ownership advantages and, therefore, will attract more market-oriented FDI. Even for export, the market size of host countries is important because larger economies can provide larger economies of scale and spill-over effects.

Human resource endowments, cost and productivity of labour

One of the most important factors which lead toward FDI is the advantage in competitive production factors: labour force, land and natural resources in the host country (W. Naudé & Krugell, 2005). The degree of development of host countries is often considered one of the most important determinants of FDI flows because it is positively related to domestic entrepreneurship, education level, and local infrastructure. Still, lower labour cost reduces the cost of production. However, rather than just low wages, it is important that wages reflect productivity (W. Naudé & Krugell, 2005). It is generally believed that highly educated personnel are able to learn and adopt new technologies faster, and the cost of retraining is also less (Pigato, 2001). Thus, countries with a large supply of cheap but skilled human capital attract more FDI.

Physical, financial and technological infrastructure

It can be presumed that the availability of physical infrastructure affects the decision of selecting the investment place: The more highways, railways and interior transport waterways are adjusted according to the size of host province, the more a FDI is convenient. Another important variable is the level of telecommunication services. Higher levels of telecommunications services will

save time and reduce the costs of communication and information gathering, thus facilitating business activities.

Investment Regulation

In terms of accessibility it is important the host country implement a series of preferential policies to encourage international trade. Duty exemptions for intermediate products used in the production of exports have been particularly important in boosting FDI. Liberalization is among the most dominant long-run determinants of FDI. Therefore, government policy commitment as measured by the number of Bilateral Investment Treaties (BIT) signed by a host country and membership in Multilateral Investment Guarantee Agency (MIGA) plays an important role in attracting FDI. Moreover, FDI regulations that have liberalized restrictions have significantly contributed to the improvement of the investment climate (UNCTAD, 1998). They provide for non- discrimination between foreign and domestic private investors, allow profit repatriation, protect against expropriation, grant incentives, strengthen the standards of treatment of foreign investors, and shift away from targeting specific sectors or foreign investors (UNCTAD, 1998).

Economic and Political Uncertainty

Several studies have found that FDI in developing countries is affected negatively by economic and political instability. Political instability subsumes many kinds of events like anti-government demonstrations, assassinations, cabinet changes, constitutional changes, coups, government crises, purges, revolutions, and riots. It is expected to decrease FDI because it increases uncertainty about the cost and profitability of investment (W. Naudé & Krugell, 2005). In turn, instability in macroeconomic variables as evidenced by the high incidence of currency crashes, double digit inflation, and excessive budget

deficits is associated with macroeconomic policies that are not sustainable and thus makes investment unattractive (Naudé & Krugell, 2005). Eventually countries that are less risky attract more FDI per capita.

Chapter 2

Economic and social context

2.1 Panama overview

Panama, officially the Republic of Panama, connects Central and South America and is located between Costa Rica and Colombia. The capital is Panama City. Its tropical climate combined with a current strengthening economy and political stability have attracted both visitors and investors to the area. In 2013, Panama ranked 5th among Latin American countries in terms of the Human Development Index, and 59th in the world (World Bank, 2016). Since 2010, Panama remains as the second most competitive economy in Latin America according to the Global Competitiveness Index from the World Economic Forum (Schwab et al., 2014). Still, Panama is considered to be one of the best countries in the region, for establishing corporate coordination and distribution centres for multinational enterprises.

In order to conduct a more precise strategic analysis and market research we can adopt a PEST analysis, which gives an overview of the different macro-environmental factors we have to take into consideration. Thus we carry out an analysis of the country considering market growth or decline, business position, potential and direction for operations.

2.2 PEST analysis

2.2.1 Political environment

The President of the democratic republic of Panama is both head of state, head of government, and of a multi-party system. Executive power is exercised by the government. The judiciary is independent of the executive and the legislature. Moreover, the impact of the powerful forces of authoritarianism, military dominance, the US presence, joint with the strategic and economic importance of the Panama Canal, are important variables for current and future political strategies (Deloitte, 2014).

Panama is very attractive to investors given its dollarized economy with no exchange risk. Moreover, an absence of barriers for foreign investment, low inflation, and its stable and significant banking sector make this country very attractive for foreign investor.

Still, Panama's political environment faces no threats of hostility either domestically or externally. However, Corruption remains widespread and represent one of the main problem of the country. The World Economic Forum's report on global competiveness shows that corruption is viewed by business executives as the most problematic factor for doing business in Panama (Schwab et al., 2014). According to the report, even though Panama has improved its overall competitiveness, public trust in politicians is low and judicial independence is judged to be one of the lowest in the region. In June 2011, the Martinelli government and the United Nations Office on Drugs and Crime (UNODC) signed an agreement to establish a regional anti-corruption academy in Panama.

Finally, the organization of commercial companies and commercial activities is regulated by special laws and by the Commercial Code on issues that have not

been regulated. There is no price control authority in Panama, but rather a government authority is in charge of surveillance against bad business practices.

Table 1 - Country indexes

	2011	2012	2013	2014	2015
GDP (million US$)	34,373	39,955	44,856	49,166	53,132
GDP per capita (US$)	9,336	10,672	11,787	12,712	13,268
Private Consumption (LCU per international $)	0.553	0.573	0.588	0.593	0.593
Export of goods and services (% of GDP)	72.9	70.7	60.5	53.6	-
Imports of goods and services (% of GDP)	83.7	79.7	68.6	61.4	-

Source: (Word Bank, 2016)

2.2.2 Economic environment

Panama has been a member State of the World Trade Organization (WTO) since 1997 according to Law 23 of 1997. Because of such affiliation, a number of economic measures have been implemented by successive Governments, including the privatization of State-owned companies, the adequacy of internal laws to international standards, as well as the drastic reduction in import tariffs and tariff process in the agricultural sector. Panama has signed comprehensive bilateral trade agreements with several trading partners (e.g. the United States – Panama Free Trade Agreement, 2007), and it is also currently engaged in negotiations of additional free trade agreements (FTA) with other important trading partners in order to enhance the country's competitiveness in the

international economy. The US dollar is the legal currency in Panama, thus it has free circulation and there are no foreign exchange regulations.

Over the past decade, Panama has been one of the fastest growing economies worldwide. Average annual growth was 7.2 percent between 2001 and 2013, more than double the regional average. As shown in Figure 4, the Panamanian economy grew by 6.2 percent in 2014, 5.8 percent in 2015, and for 2016 the forecast is 6.0 percent, keeping on rising to 6.1 and 6.2 percent in 2017 and 2018, respectively.

Figure 4 - Annual GDP growth
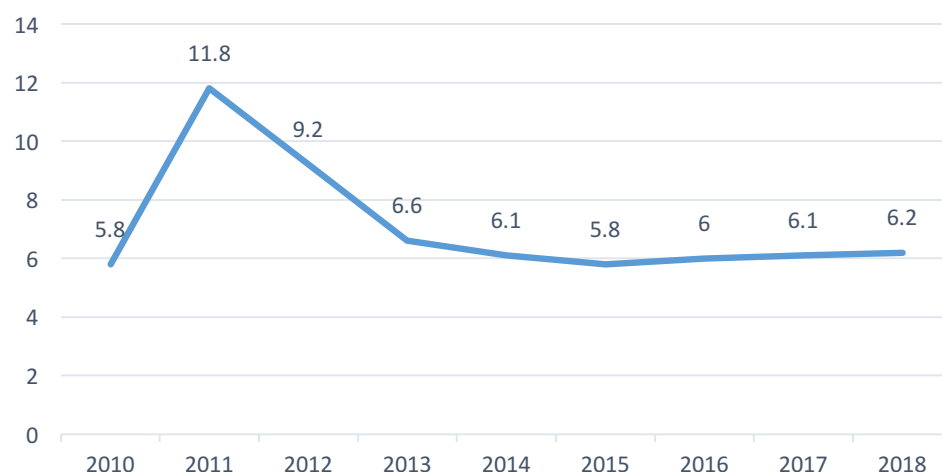
Source: (World Bank, 2016)

According to this data, Panama's growth is likely to remain one of the highest in Latin America, between 6 and 6.5 percent. Both private and public investments should remain high and strong, involving the construction of the second Metro line and expected additional traffic generated by the expanded Canal.

Furthermore, Panama has made significant progress in reducing poverty in recent years. In the period between 2008 and 2014 poverty was reduced from

26.2 percent to 18.7 percent, and extreme poverty from 14.5 percent to 10.2 percent. This means that, of a population of about 3.9 million people, an additional 168,000 Panamanians overcame extreme poverty while close to 300,000 are the people who live in poverty.

However, despite the initiatives to reduce poverty, significant disparities remain. Poverty prevails and is quite concentrated in rural areas, mainly inhabited by indigenous people. The statistics data shows that in urban areas, extreme poverty is below 4 percent, while in rural areas it is about 27 percent.

Moreover, in indigenous territories, known as "*comarcas*", poverty is above 70 percent and extreme poverty above 40 percent. Lack of services, particularly access to water and sanitation, and health continues to be a constraint in the "*comarcas*".

There are different ways of conceptualizing and measuring poverty across different countries. In order to have a comprehensive and thus more effective overview of poverty in Latin America and Caribbean, we can rely on the Human Development Index (HDI). The Human Development Index (HDI) is a comparative measure of life expectancy, literacy, education and standards of living for regions worldwide (UNDP, 2015). Countries fall into four broad categories based on their HDI: very high (for developed countries), high and medium (for developing countries) and low (for least developing countries). More specifically, the HDI was created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. The HDI can also be used to question national policy choices, asking how two countries with the same level of GNI per capita can end up with different human development outcomes. These contrasts can stimulate debate about government policy priorities.

Figure 5 provides a synthetic view of the index.

Figure 5 - Human Development Index
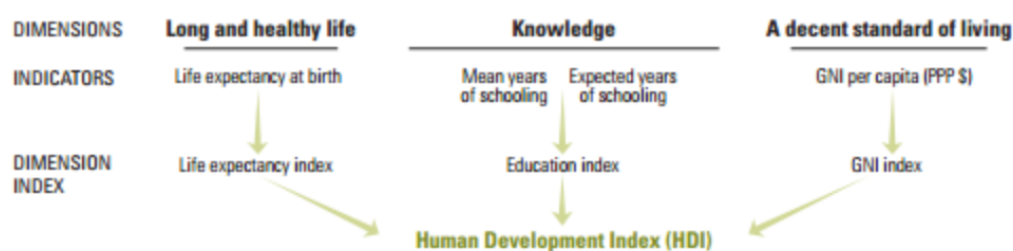
Source: (UNDP, 2015)

Table 2 covers the list of Latin American countries by **Human Development Index (HDI)** as released by the United Nations Development Program's Human Development Report (UNDP, 2015).

As we can see from the table, in terms of individual countries' performances, Argentina remains the Latin American country with the highest HDI rating, ranked 40st in the world with a score of 0.836.

Moreover, Panama (60th, 0.780) results the highest Central American country on the list. In more general terms, Latin America and the Caribbean remains the developing region with the highest overall HDI rating, but in line with the rest of the world progress has slowed in recent years in comparison with the 'boom years' of 2000-2008.

Table 2 - Human Development Index ranking

HDI rank	Country	Value 2014
	VERY HIGH HUMAN DEVELOPMENT	
40	Argentina	0.836
42	Chile	0.832
	HIGH HUMAN DEVELOPMENT	
52	Uruguay	0.793
60	Panama	0.780
69	Costa Rica	0.766
71	Venezuela (Bolivarian Republic of)	0.762
74	Mexico	0.756
75	Brazil	0.755
84	Peru	0.734
88	Ecuador	0.732
97	Colombia	0.720
101	Dominican Republic	0.715
	MEDIUM HUMAN DEVELOPMENT	
112	Paraguay	0.679
116	El Salvador	0.666
119	Bolivia (Plurinational State of)	0.662
125	Nicaragua	0.631
128	Guatemala	0.627
131	Honduras	0.606
	LOW HUMAN DEVELOPMENT	
163	Haiti	0.483
	OTHER COUNTRIES OR TERRITORIES	
	Developing countries	0.660
	Latin America and the Caribbean	0.748
	Least developed countries	0.502
	World	0.711

Source: (UNDP, 2015)

However persistent inequality, as we reported before, remains a serious problem in Panama. Eventually, Latin America and the Caribbean remains the most unequal region in the world in terms of income, although it has experienced the largest fall in inequality over the past few years, with income inequality falling in 14 out of 20 countries between 1990 and 2012, while it rose in four countries and remained relatively constant in two.

This extreme income concentration and inequality is also confirmed by the analysis of the global map, Figure 6, which shows the HDI distribution in a selected region.

Figure 6 - American map HDI
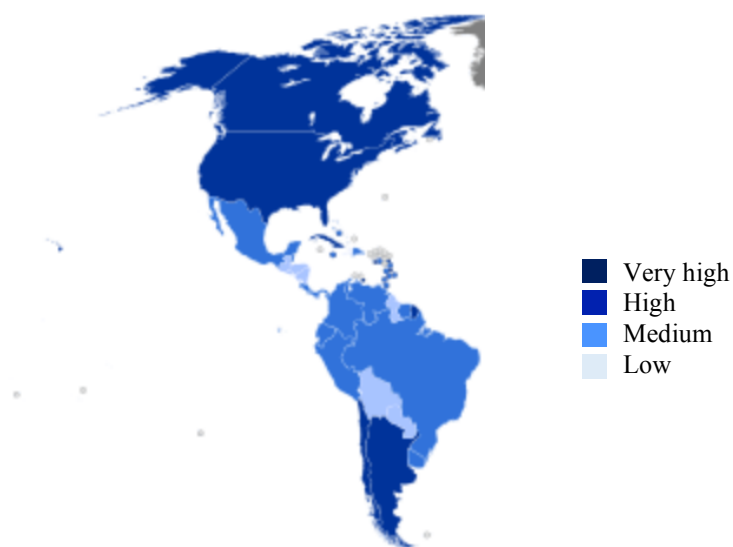
Source: (UNDP, 2015)

Through this map we can take another look at differences in income distribution within nations in the Central area and the rest of America. Thus, the map points out how unequal is inequality across the world. From this perspective, as index of poverty distribution, it's becoming clear that two further measures are worthwhile for our purpose: **Latest Country inequality** and **Latest Country Poverty Data.** These represent further measures of poverty, allowing us the possibility to compare Panama's situation with the one of the rest of Central America.

These measures can help us to better figure out a more effective allocation of resources by making possible the targeting of those with the greatest intensity of poverty. Still, they can help address strategically and monitor impacts of policy intervention. More in detail:

1. **Latest Country Inequality Data:**

   This chart (Figure 7) illustrates the degree of inequality within each country. One can see to what extent poorer quintiles (1/5th) of a population have disproportionately smaller shares of total income (or consumption) compared to richer quintiles.

Figure 7 - Latest country inequality data
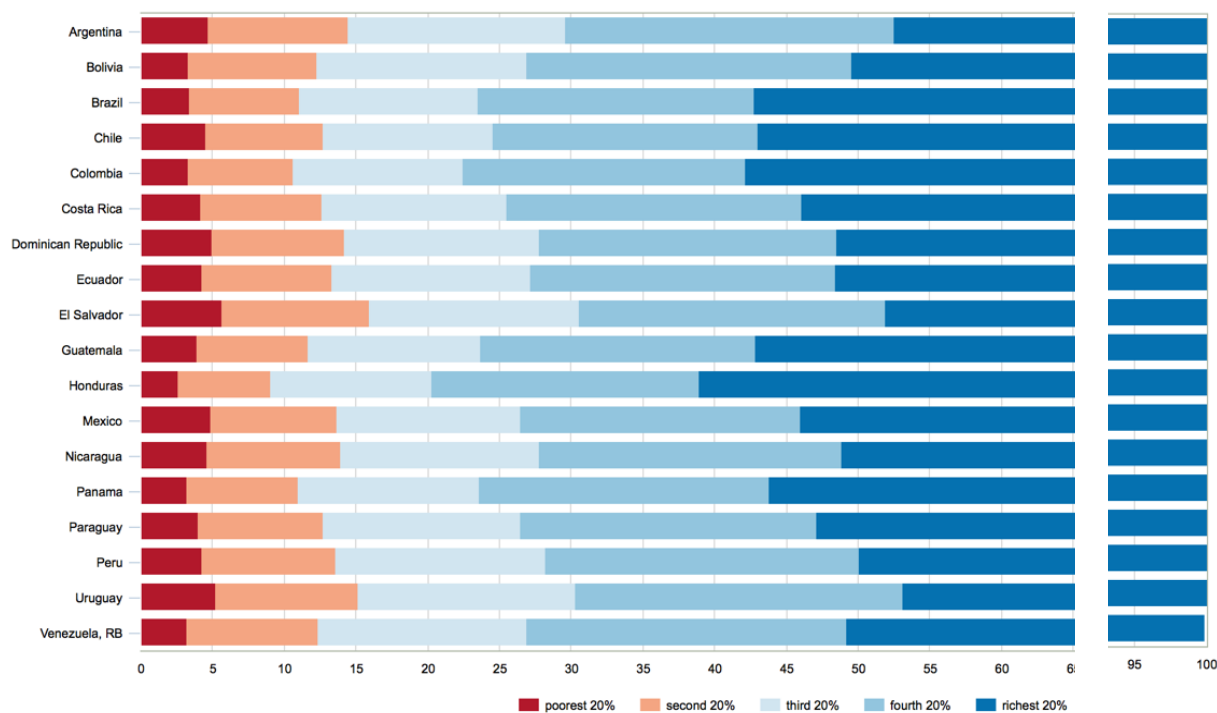
Source: (Word Bank, 2016)

2. **Latest Country Poverty Data:**

This chart (Figure 8) shows the latest poverty rates using the international poverty line (2011 PPP*), for countries in the selected region. The use of a common poverty line facilitates comparisons of poverty across countries.

Figure 8 - Latest country inequality data, PPP
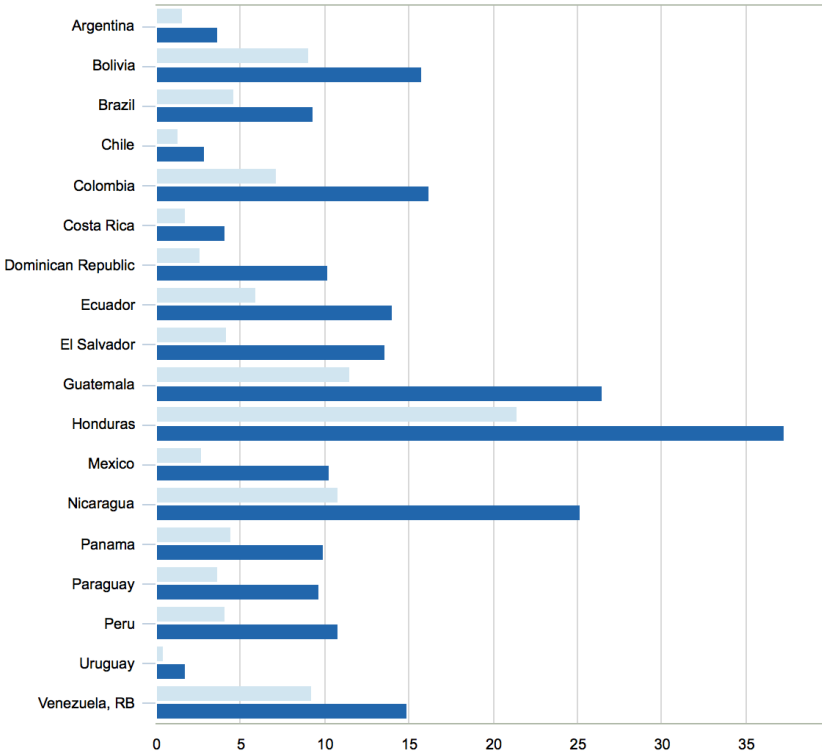
% of population below the poverty line

$1.90 a day (PPP) $3.10 a day (PPP)

Source: (Word Bank, 2016)

2.2.3 Social environment

According to the World Bank Data (2016), Panama has a population of 3.929.141. The culture, customs, and language of Panama are predominantly Caribbean Spanish. In 2010 the population was 65% Mestizo (mixed white, Native American), 9.2% Black, 6.8% mulattoes, 13% White and 6% Native Americans.

Ethnic groups in Panama include Spanish British and Irish, Dutch, French, Germans, Italians, Portuguese, Poles, Russians or Ukrainians (a large number are Jews), and Americans. More than half the population lives in Panama City.

For what concern religion, even though it is considered freedom, Catholicism has certain advantages over other faiths in the country. The Constitution recognizes Catholicism as "the religion of the majority" but, it has not been designated as the official religion. The Constitution also dictates that Catholicism must be taught in schools.

One of the main problem of the country regarding the social issue is the women condition. In the past several decades, the status of Panamanian women has changed, but not as much as one would have hoped. The key factor which has affected this status is the cultural traditions of the indigenous people living in the urban areas.

Many women in Panama are unemployed due to their lack of education and the societal roles they must pursue towards becoming a mother. The unemployment rate for women (8.9%) is almost as twice as much as men (4.7%). Employed women make up 38% of the workforce and 62 percent of the workforce is men. Women that do have jobs in Panama typically work in retail and wholesale commerce, hotels and restaurants, manufacturing, teaching, and domestic services. Also, the salary paid to men is estimated to be double the salary that is paid to women (KPMG, 2015). This is based on the annual income per capita of employed men when compared to employed women in 2002. What emerge is that even if women do get well educated in Panama, they are underpaid and are not given as many opportunities as men are, in order to reach the same status. It is not just education matter but women need to be recognized in society as having a more authoritative position.

2.2.4 Technological environment

Panama's economy, because of its key geographic location, is mainly based on a well-developed service sector strongly related to banking, commerce, tourism, and trading. In fact, more than 70 percent of the Gross Domestic Product and 50 percent of the Nation's employment resulting from this sectors. There are more than 810, 000 people working in the service sector (KPMG, 2015). Still, constructions will be a key driver of future development in Panama, with the canal expansion serving as a key catalyst. In addition to the massive investment on the waterway, Panama City has finished construction of the first line to the region's only underground subway, a project that is costing approximately US$2 billion. The government spent US$15 billion, or approximately 50 percent of GDP during the period 2009-2014 for its Public Investment Program (PIP). The PIP focuses on road construction to foster transportation and logistics, irrigation systems for agricultural development, airport expansion and construction to support tourism, and infrastructure investments to boost education—all sectors that have been identified as offering high potential returns in terms of growth and employment

2.3 Country attractiveness

Theoretically, a country will be attractive for a foreign investor if, by investing in that country, she/he gets a return that is equal to or higher than her/his risk adjusted weighted cost of capital. There are various dimensions that contribute to country attractiveness, the most relevant are: Market growth, Resources, Incentives and Risks.

<u>Market growth</u>

Thanks to its strong growth and a stable financial sector, Panama is now among the highest rated emerging markets, on par with Brazil, Mexico and Peru. Panama continues leading the economic growth of the region and at the same time it has one of the lowest inflation rates. This is added to its competitive advantages that include its geographical position, dollarized economy, with investment grade since 2010, a robust financial sector and committed to transparency. Thanks to all these factor it will remain a very attractive country for foreign investment, making Panama's future growth prospects very significant. According to IMF (2016), new investment opportunities coming from the infrastructure development, the expanded Panama Canal, the recent approval of Free-Trade Agreements with the United States, the European Union, and Canada, as well as a large private mining project should help to support growth over the medium term.

The demand for goods and thus the market growth of a country is often triggered by the presence of an affluent middle class. Emerging markets such as Panama, particularly experience what is known as the "middle-class effect", an effect which is due to the skewed nature of the income distribution in emerging countries. According to this effect, the demand for products emerges when disposable income reaches a certain threshold. The government is now defining middle class workers as those who earn a monthly income between $800 and $1,500. Therefore, those who are in this range have access to the housing tax incentive and are considered middle-class.

Moreover, the number of these people increases faster than the average income; this triggers a rapid increase in demand for branded goods and consumer durables.

Based on these considerations, the Panamanian middle class is the driving force behind the economy. They are the main consumers of goods and services, and

make up a large majority of the country. According to the census taken in 2010, 32% of the population, that means 1,056,000 people, make up the middle class, according to the government's definition.

According to statistics cited by government analysts, members of the middle class provide around 40% of the workforce for companies producing goods and services, and between 12% and 15% of the public sector

This phenomenon is clearly illustrated by the curve, Figure 9, according to which an increase of 20% in the GDP per capita origins an increase in middle class of 66%.

Figure 9 - GDP distribution Panama
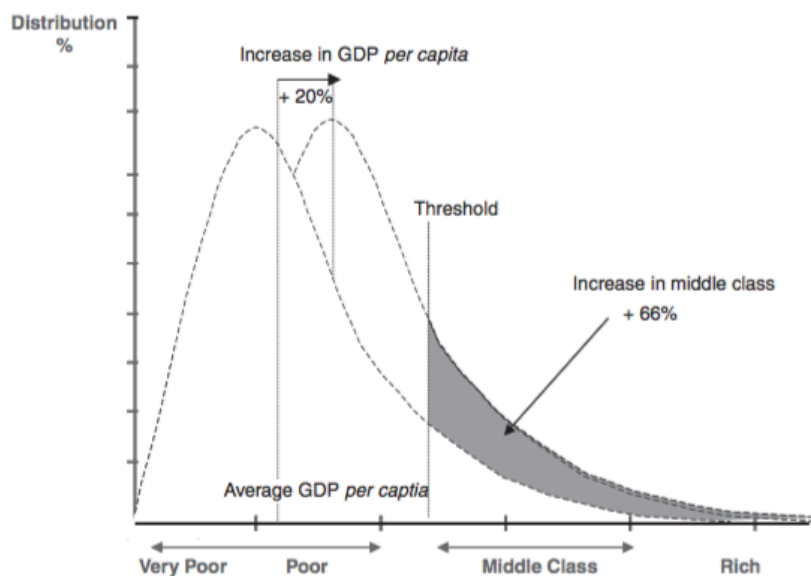
Source: (IMF, 2016)

<u>Resource analysis</u>

The resources that attract foreign investors fall into three broad categories:

Natural resources;

Human resources;

Infrastructure and support industries resources;

Natural resources: Sustainability is a relatively new term for Panama. The government still tends to act in the interest of powerful groups that exploit rather than preserve the country's natural resources. Climate change is also expected to have a significant impact on Panama, as far as water, energy, and human security are concerned. Thus, to both sustain a strong economy and mitigate the effects of climate change, it is crucial for Panama to protect natural ecosystems and create sustainable economic alternatives for stakeholders.

The country has moved towards greater environmental protection over the past fifty years, and today some 25 percent of Panama's total area is protected. Still, most agricultural practices continue to be unsustainable, as forests and mangroves are cleared to make way for farms, ranches, and real-estate development. Mainly Panama has obtained substantial income through the pipeline. Oil and gas is probably the most globally sensitive industry, given the highly strategic nature of the commodity. Another important, but small sector of the economy is agriculture. The main products are: bananas, rice, corn, coffee, sugar, vegetables, meat and shrimp. Clay, limestone, and salt are the main mineral products, and gold, sand ferrous and manganese have been small-scale mining.

Infrastructure and support industries resources: The main infrastructure investment projects remain focused on the expansion of the Panama Canal and the metro rail system in the capital, Panama City. The nation's infrastructure is relatively well developed. Roads in the urban areas are generally good, but in the rural areas of the nation, they remain poor. Panama has 11,258 kilometres (6,996 miles) of roads, but only 3,783 kilometres (2,350 miles) are paved (PWC, 2015). Therefore, the Panama infrastructure is unevenly distributed throughout the country, giving to Panama City the role of a 'hub' and regional centre. However, recent government initiatives have put plans in place to improve and build new roads, metro rails, and infrastructure projects in the coming years. The

industry continues to grow, and therefore Panama must try to keep up and expand the canal in order to meet the demands and continue to be able to generate profits from the canal. Indeed, the canal continues to serve as a crucial part of the global transportation industry. They are investing in infrastructure and trying to keep up with the demands of the world.

Human resources: With historically low unemployment, there is a scarcity of skilled workers—but youth unemployment is high. In this context, a comprehensive reform is needed to support sustainable and significant growth. This will require increasing human capital and maintaining labour market flexibility to improve productivity and competitiveness. Indeed, the government has started to implement initiatives to increase school attendance, aligning it with skills demand, enhance access to technology in the classroom, and increase the provision of professional training in partnership with the private sector. These efforts should help to increase skills and ensure better opportunities for all Panamanians. Looking forward, incomes will grow faster outside Panama City as authorities seek to boost inclusive growth. Moreover, improvements to education will remain a priority to increase the availability of skilled workers for small businesses. Finally, government will be committed to labour mobility. The minimum wage in Panama is at US$ 310. The average monthly salary is around US$ 500 for public sector employees and around US$ 420 for private sector (PWC, 2015).

Incentives analysis

Above the competition-shaping forces an additional source of competition opportunities is related to the **government incentives**. The main sources of incentives granted by Panama governments are the fiscal and competitive ones.

The Government is encouraging foreign investment and working to position Panama as the primary destination in Latin America for foreign investors. There are no major restrictions on foreign investment. Special trading rules, granting migration, labour, and tax incentives for investment and creating the PROINVEX office are some of the principle ways Panama has encouraged foreign investment. PROINVEX is a "one-stop shop" where every investor interested in investing in Panama may obtain in a single office all the information required to achieve a successful investment. Investors can also obtain updated information on special fiscal regimens such as the Multiregional Headquarters (MHQ), Panama Pacific Special Economic Zone (APP), The City of Knowledge, Colon Free Zone (ZLC), Investment Stability Law, and other Free Trade Zones. Therefore, Panama is considered to be one of the best countries in the region, for establishing corporate coordination and distribution centres for multinational enterprises. The country offers great flexibility as to the possibilities of structuring international transactions. Furthermore, Corporate tax rates in Panama are low, since it does not tax income from non-Panamanian sources, making it a preferred base for holding and sales operations. Generous tax incentives are available, mainly for export- related concerns and investments in tourism. A company (or branch of a foreign company) in Panama is liable for tax on both Panamanian-sourced and export income, but not on non-Panamanian income. Many tax advantages and financial incentives are offered to firms in exchange for doing business in various sectors such as trade, services, banking, manufacturing, agro-industrial sector, tourism, transportation logistics, communication technologies, real estate amongst others (KPMG, 2015).

The Panamanian Constitution guarantees private property and freedom of investment, while foreign investors' intellectual and industrial property is subject to the same regulations as a national investor (KPMG, 2015). The construction sector is one that is benefiting enormously from such tax exemptions and incentives. Moreover, one of the incentives provided in the

development of industrial laws is the protection from foreign competition by establishing tariffs and import quotas on some sensitive products. There are imposed tariffs on all foreign goods entering the country, except those who are exempted by law or special contracts. Tariffs are taxes on either the value or are based on quantity, weight, size or volume. Rates vary from low to significant or clearly protectionist (0% protectionist low 33%).

Risks analysis

The country risk analysis has the purpose to assess the probability that adverse circumstances owing to political, economic or social actions will negatively affect business performance. The risk assessment is organized by risk category (economic, political, financial system). Once identified the categories, we need to rate the risk. The rating will determine whether or not it is safe enough for foreign investors starting a business in Panama or whether additional measures are needed to reduce or eliminate the risk still further. We can adopt a **Qualitative Risk analysis** which means we can simply decide whether the risk is minimal, low, moderate or high. Thus, the rating depends on how big the risks are, both individually and collectively, in relation to the most important threats and opportunities investors should face in order to achieve their overall goals by opening a business in Panama. Hence, it depends upon the likelihood of a threat occurring, from most unlikely (minimal risk) to most likely (high risk).

Economic risk: moderate

Panama has a small and open economy that has diversified in recent years, however it is still vulnerable to global economic shocks due to its dependence on export oriented services, the use of the US dollar and the country's reliance on trade. A main challenge for the economy continues to be growing levels of income inequality. Income distribution continues to be among the most uneven in the world. Figure 10 provides a snapshot of the current and future level of both GDP and inflation.

Figure 10 - GDP growth and inflation
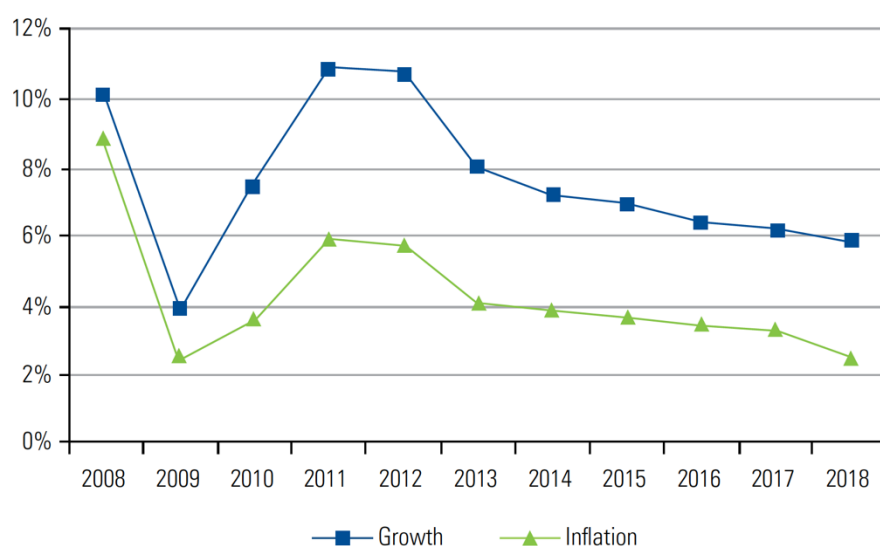
Political risk: moderate

President Varela elected on July 2014 has continued the general positive attitude toward foreign direct investment and unlikely to modify the country's pro-business sentiment. The government is trying to reduce levels of poverty and high levels of unemployment by emphasizing increased private sector

investment. However, the increasing levels of corruption, the environmental activist opposition to mining project development and the potential for lower government spending due to the Fiscal Responsibility Law involve a political risk exposure.

Financial system risk: moderate

Insurance in Panama is regulated by the Superintendent of Insurance and Reinsurance. The Insurance Law of 2012 created a strengthened insurance registration system. Panama has no central bank or formal lender of last resort. The U.S. dollar is legal tender in Panama which limits the country's ability to manage monetary policy. Eventually the 2016 release of the "Panama Papers" have highlighted the country's need to strengthen transparency in both the financial and legal systems.

 To conclude, Panama is well positioned to continue making progress and being attractive for foreign investors. Yet sustaining growth over the medium to long term will require addressing some structural constraints that may become binding as the country continues developing. They include: infrastructure, education and skills, and the effectiveness of public institutions.

The Government's 5-year Strategic Development Plan 2015-2019 relies on two pillars of inclusion and competitiveness and includes five themes:

• Enhancing productivity and diversifying growth
• Enhancing quality of life
• Strengthening human capital
• Improving infrastructure, and
• Improving environmental sustainability, including management.

Chapter 3

Empretec, the insights of the program

3.1 Empretec overview

In the literature review we have seen two different approaches to promote entrepreneurships among countries. On one hand we understood what are the advantages for an entrepreneur to run a business leveraging on the support of an incubator, what are the benefits for a community to take part of a national training program, on the other hand we comprehended the drawbacks of each approach, such as the structural problems related to incubators in developing countries. To overcome the disadvantages of both approaches and at the same time to exploit the benefits of incubators and training programs, the United Nations Conference on Trade and Development (UNCTAD) run a new program named Empretec. UNCTAD is a branch of the United Nations organizations responsible for dealing with development issues and providing technical assistance to those countries with economies in transition and developing countries, which need help to build the capabilities they need to become equitably integrated into the global economy. Since its formation some years ago in 1988, when the first workshop was held in Argentina, Empretec has successfully trained over 370,000 people helping to found or expand businesses, and creating thousands of jobs in the process (UNCTAD, 2014). The name came

from the contraction of two Spanish words "emprendedores" (entrepreneurs) and "tecnologia" (technology), while *empretecos* and *empretecas* were coined to identify the members of the program and are now used worldwide. Empretec can be considered as a mash up of the two approaches we have previously discussed: Empretec's centres, to assist the local community and have a physical presence in the country of interest, and training programmes are currently active in 37 countries worldwide, all of them are developing countries. The core product for Empretec is the Empretec Training Workshop (ETW), this promotes a methodology of behavioural change that helps unqualified business to grow, by fostering participants' motivation and self-confidence. The Empretec methodology is based on the finding that everyone has inner motivation to improve. This motive for action is divided into three motivational categories: achievement, affiliation and power. There are ten Personal Entrepreneurial Competencies, which form the basis of the ETW. The ten competencies are: opportunity-seeking and initiative, persistence, fulfilling of commitments, demand for quality and efficiency, calculated risk-taking, goal-setting, information-seeking, systematic planning and monitoring, persuasion and networking, independence and self-confidence. The ETW leverages all the soft skills an *empreteco* should have to be successful in his business but ETW goes further to this point: if when the program had been launched the focus was mainly on strengthening soft skills, later on UNCTAD understood that an inadequate training in business planning leads to SME vulnerability, and contributes to a credibility gap with lending institutions and with some business development service experts. That is why, nowadays, ETW is also based in empowering *empretecos* with hard skills, assisting them in the preparation of business plan and in obtaining finance for their business ventures, helping the entrepreneurs to arrange mutually beneficial connections with larger national and foreign companies and building long lasting bonds and networks. This last point is a key success factor for the success of this program since it can allow

sharing different experiences among *empretecos*, creates a national network to boost the local communities and, if possible, creates an international network to expand abroad the new businesses. Networking sustainability is whether national programmes have been able to develop networks that are likely to survive in the future. Usually they do not seem to expand very much in particular with respect to networking with foreign firms but they usually build rather significant networks since their inception. ETW aims is also to create an international Empretec community, organize yearly meeting of trainers as well as yearly meeting of Empretec national directors.

Empretec concept is extremely valid since it has demonstrated adaptability to diverse environments and is in high demand all over the world. UNCTAD Empretec has now shifted the focus from a primarily advisory to a much greater supervisory and leadership role. Finally, UNCTAD awareness concerns also youths and women, and new initiatives has been developed recently. More in detail, the Empretec program consist of four main products:

- **ETW** is the central product of Empretec. It aims at coaching entrepreneurial behaviour and attitudes by focusing on 10 key competencies of a successful entrepreneur. It fosters motivation and self-confidence of participants;
- The **BDS** component provides access to follow-up consulting services to participating entrepreneurs to help them maintain, grow and expand their businesses. These include specialized courses in business planning, marketing, accounting, access to financing and other technical courses.
- **The Empretec network**, another core product, has several levels, including local, national, regional and global. Local networks are created by participants to share experience and information, and facilitate their business opportunities. Local networks evolve into national networks,

that, with the support of UNCTAD, are integrated into regional forums and the global Empretec network.

- The programme also builds a **national institutional facility**, led by a national Empretec Director, assisted by an Advisory Board which consists of major players and stakeholders from the public and private sector in the area of entrepreneurship to ensure coordination of Empretec activities with national policies in this area.

The programme aims to enhance productive capacity and international competitiveness for the benefit of economic development, poverty eradication and equal participation of developing countries in the world economy. Empretec is a mechanism that instils behavioural change into a select group of promising entrepreneurs. It is dedicated to helping promising entrepreneurs put their ideas into action and helping fledgling businesses to grow.

The Empretec methodology is based on the research conducted by a psychologist from Harvard University, Professor David McClelland, who had done extensive work on entrepreneurship since the late 1950s. His research demonstrated that everyone had inner motivation to improve. This "motive for action" was called an archetype by McClelland. He classified the 40 archetypes in three motivational main types, led by the achievement, affiliation or power drive.

Achievement

The motive for achievement is a need that makes people accomplish great things. They love challenges. They want to drive themselves so that they are capable of doing what they aim to do. The desire to achieve is evident in all aspects of their personal and professional lives.

Affiliation

We all have a relative in our family who loves to organize the New Year's Eve get-together. Their motive is a tremendous need for aggregation. Entrepreneurs love this lifestyle and love to associate with important people in the community.

Power

Entrepreneurs love the freedom and independence of being their own boss. Entrepreneurs have to be free to pursue their own ideas, follow their own road. They are the movers and shakers, the people who make things happen. Can this motive, the need for achievement, be taught to people? Based on McClelland's research, a number of training programmes have been developed for business people to increase their achievement motivation.

The workshop

At the heart of the Empretec service is the Empretec Training Workshop (ETW). The ETW promotes a methodology of behavioural change that helps entrepreneurs put their ideas into action and helps business to grow. Training is initially delivered by international master trainers who, in turn, would train local participants to become master trainers. All trainers are also entrepreneurs. Furthermore, the program aims at building the entrepreneurial skills of the individual through an interactive process of role play, structured exercises and experience-sharing modules. The programme framework involves lectures, exercises, role-play and business creations and competitions, worthwhile for understanding how a particular PEC is related to the success of an entrepreneur Empretec workshop is based upon research funded by the United States Agency for International Development (USAID) which was conducted by McBer and

Company (David McClelland's consulting firm) and MSI (United States) to determine the behavioural competencies which distinguish successful entrepreneurs from less successful entrepreneurs.

Focused interviews lasting four hours were conducted with hundreds of entrepreneurs in a number of countries. The research team then compared the answers, the discussions and the way of thinking and behaving of these different groups in order to understand what it was that was really different about the personal competencies, the actions and the thoughts of the successful entrepreneurs.

Finally, after months of testing, they came to understand that there were certain common competencies, from one country to another and from one business to another, which all the successful entrepreneurs had. These competencies were called Personal Entrepreneurial Competencies or PECs. The Empretec training programme is about those PECs.

The first cluster – Achievement

Opportunity-seeking and initiative

An entrepreneur is someone who seeks opportunities. Where other people see problems, entrepreneurs see opportunities and take the initiative to transform these opportunities into profitable business situations. They demonstrate the following behaviours:

• Do things before being asked or forced to by events;
• Take action to extend the business into new areas, products or services; and
• Seize unusual opportunities to start a new business, obtain financing, equipment, land, work space
or assistance.

Persistence

Entrepreneurs have the determination to persevere in the face of obstacles. When most people tend to abandon an activity, entrepreneurs stick with it. They demonstrate the following behaviours:

• Take action in the face of significant obstacles and challenges;
• Take persistent actions, or switch to an alternative strategy to meet a challenge or obstacle; and
• Take personal responsibility for the performance necessary to achieve goals and objectives.

Fulfilling commitments

Entrepreneurs always do what they say they will do. They always keep their promises, no matter how great the personal sacrifice. They demonstrate the following behaviours:

• Make a personal sacrifice and extraordinary effort to complete a job;
• Pitch in with employees, or take their place if needed, to get a job done; and
• Strive to keep customers satisfied and place long-term goodwill above short-term gain.

Demand for quality and efficiency

This has to do with passion: being obsessed by the need to improve quality, to do something better,
faster or cheaper. This passion is reflected in the integrity of entrepreneurs and the pride they have in their work. They demonstrate the following behaviours:

• Find ways to do things better, faster and cheaper;

• Act to do things that meet or exceed standards of excellence; and

• Develop and use procedures to ensure that work is completed on time and that work meets agreed-upon standards of quality.

Taking calculated risks

Taking calculated risks is one of the primary concepts in entrepreneurship, the element that makes them entrepreneurs. They are willing to take risks. They demonstrate the following behaviours:

• Deliberately calculate risks and evaluate alternatives;

• Take action to reduce risks and/or control outcomes; and

• Place themselves in situations involving a challenge or moderate risk.

The second cluster – Planning

Goal-seeking

This is the most important competency because none of the rest will function without it. Entrepreneurs know what they want. They know where they're going in business. They're always thinking about the future and set goals. They demonstrate the following behaviours:

• Set goals and objectives which are personally meaningful and challenging;

• Articulate clear and specific long-term goals; and

• Set measurable short-term objectives.

Information-seeking

Entrepreneurs do not like uncertainty or assumptions. They don't like to count on others for information. It seems that an entrepreneur spends a lot of time gathering information about their clients, suppliers, technology and opportunities. They demonstrate the following behaviours:

• Personally seek information from customers, suppliers and competitors;

• Do personal research on how to provide a product or service; and

• Consult experts for business or technical advice.

Systematic planning and monitoring

Systematic means "in an orderly, logical way". Planning is deciding what you are going to do. Monitoring means checking. It is, in fact, what a business plan is for: to see if something is feasible prior to trying it. Entrepreneurs demonstrate the following behaviours:

• Plan by breaking large tasks down into sub-tasks with clear time-frames;

• Revise plans in light of feedback on performance or changing circumstances; and

• Keep financial records and use them to make decisions.

The third cluster – Power

Persuasion and networking

Entrepreneurs use a definite strategy for influencing other people to follow them or do something for them. A successful persuasion strategy depends upon all parties involved, that is, the entrepreneur and the people he is trying to persuade.

Entrepreneurs demonstrate the following behaviours:

• Use deliberate strategies to influence and persuade others;

• Use key people as agents to achieve own objectives; and

• Take action to develop and maintain a network of business contacts.

Independence and self-confidence

This competency concerns entrepreneurs' quiet self-assurance in their capability or potential to do something. It is an internal confidence that is reflected by the challenges they choose to undertake in life. Being self-confident means taking total responsibility for making things happen. They demonstrate the following behaviours:

• Seek autonomy from the rules and/or control of others;

• Attribute the causes of successes and failures to oneself and to one's own conduct; and

• Express confidence in their ability to complete a difficult task or to face a challenge.

Key benefits of the Empretec programme

- **Overall:** inspires entrepreneurs to start, grow and develop their businesses;
- **For the government:** generates employment, improves quality of life, strengthens the base of the national economy;
- **Lending institutions:** lender-client relationships become more reliable, stable, and pro table;

- **Transnational companies**: better quality of suppliers, lower transaction costs;

- **SMEs:** improves productivity and efficiency, and increases domestic and cross-border business linkages.

These benefits have been delivered to stakeholders of the programme in 34 countries and over the 23 years that Empretec has been in existence.

Table 2 - Empretecos benefits

How did Empretecos (those who participated in ETWs) benefit from the workshop		
Your annual revenues before and after the ETW	Higher 73% Lower 6%	Equal 21%
Has Empretec contributed to your growth?	Strong 80% Weak 2%	Average 18%
Profitability before and after the ETW	Higher 61% Lower 8%	Equal 31%
Easier to get a job after becoming an *Empreteco*?	Yes 88%	No 12%

Source (UNCTAD, 2012)

3.2 ETW Panama

The program

The Entrepreneurship Training Workshop (ETW) in Panama addresses the essential issues of how entrepreneurial competencies and behaviours of business owners influence the conduct and above all, the results of their businesses. It

focuses on changing participant's behaviours and conveying the "Can-Do" spirit through attitudinal transformation and building self-confidence by reinforcing the Personal Entrepreneurial Competencies (PECs). Empretec is different from other programmes in the sense that methodology used during the workshop is based on a behavioural approach to entrepreneurship. The Empretec Programme strives to identify and reinforce these successful entrepreneurial traits through self-assessment individual transformation and business simulation activities. Successful graduates of the programme obtain a clear vision of what they want to do with their businesses in the short and long term. It seeks to build a culture of entrepreneurship where participants become open-minded and forward thinking and look for win-win situations.

We will explain later in more detail the main pro and cons of the programme taking into consideration the short and long term effects.

Methodology

The methodology used for the ETW in Panama is highly interactive and experiential. In place of traditional lectures, the training uses structured exercises, small and large group activities, video presentations, diagnostic tools, case studies, questionnaires and other means designed to identify participant's PEC's and enhance them through practice. Through this framework it is possible to figure out how a particular PEC is related to the success of an entrepreneur.

After the first presentations and case studies, all the participants were required to join with another member and run a kind of business game, facing a sales strategic challenge. Going deeper they had to identify a specific business scenario and set up company defining several parameters such as the marketplace changes, the competitors, the critical sales challenges and the final objectives. Finally, the team profit was generated on the basis of the simulated company's sales and costs, and a ranking was determined.

The major benefit of this simulation training is that it gave a real prospective sale in which people experienced the competitive environment dealing with mistakes and learning from their errors.

Duration

The ETW consists of a very intensive 6 days' workshop preceded by a pre-training evaluation of the competencies of the participants. At the end, a post training evaluation is also conducted to see the difference and evaluate the participant's business readiness.

During our stay in Panama two ETW run, respectively in the second and last week of October 2016.

Target groups

- Business owners, including SMEs in all sector activities
- Potential or emerging entrepreneurs, including women, young graduates etc. with plans to establish or expand a private business venture
- Those aspiring to start their business one day
- Retired individuals and those who face early retirement
- Adults or employed professional not satisfied with their current incomes and willing to explore other income-generating opportunities

During the two workshop took place in October 2016, a wide group of people participating to the workshop, came from "Suma Financiera Fundacion". More in detail, it consists of an institution of people, with key strategies in the development of the microenterprise sector. It operates with the main aim to establish strong and lasting relationships with customers, increase the degree of

customer loyalty, reduce financial risk, promote a stronger portfolio to ensure higher profits.

3.3 Pro and cons of the Panama Empretec training workshop

In order to highlight the main benefit of the ETW in panama, we believe that the best way to deal with this explanation is mentioning personal consideration ex *Empretecos* have done in our interview. Beside this, we will make further consideration relying on what we observe with our eyes. According to what people said, most of the participant of the ETW entered the workshop thinking not very highly of themselves. In this sense the workshop empowers the people and allow them to realize and figure out what their strengths and weaknesses really were. Moreover, Empretec gives the courage to assume all their responsibilities and verify the risks. By operating in this way, at the end of the workshop, people were able to detect new opportunities such as the distance learning and to set relevant and challenging goals.

Furthermore, Empretec workshop reinforced motivation and passion of people to start a new business with a social vision as well.

Still, ETW boosted the self-confidence and teaches to keep more control over the decision people take, being aware of the importance of their behaviour and how much it affects their business decisions. After the training, people use to modify and change their business attitude, thus avoiding to be too strict with themselves, acknowledge their weaknesses and focusing more on their strengths. During our interviews people claimed they benefited from the Empretec workshop both at personal level and a business one. People learned to recognize the characteristics of a successful entrepreneur in themselves, evaluating their strengths and weakness. Moreover, people can acquire valuable tools and

information about new sources of financing and key elements to consider in business planning and negotiations. Nevertheless, after the workshop, one of the skills they most improved was planning. They catch the importance of systematic planning towards smart goals that they set on regular basis. In this way people are able to spend the time in more efficient way reducing unnecessary risk and costs.

Empretec give the possibility to take full advantage of the contacts and the ability to build a successful team work.

Hence, they spread the importance of motivating people when working in a team. This is a major challenge, especially when dealing with people who have been unemployed for a while and who have limited job opportunities. Thus, involving them in decision making process, encouraging them and allowing them to develop new idea represent an important point to success.

3.4 Limitations of the Panama Empretec training workshop

However, even though the program seems to have positive effect in the short run, a deeper analysis over the long run in order to assess whether the effects are persistent is necessary. We show how assumptions about long-run persistence can be important enough to change program adoption decisions. Thus studies of the medium- and long-run effects will be carried out by the team with further research on field in order to consider the Empretec programme successful. Still, the first results show that in the short run the programme has positive effects compared to nonparticipation. Therefore, a further analysis will assess whether, after a first period in which participant appear appeased and fulfilled for having

taking part to the course, the programme produces some lock-in effect due to reduced job search or difficulty in setting the own business.

The extended research analysis includes an impact evaluation of a training program aimed at spurring entrepreneurship, and international entrepreneurship, in developing countries. However, several directions for future research arise from these findings and limitations. From the literature review analysis, we understood the importance of international entrepreneurship for development. Thus, the economic benefits of entrepreneurship and its role in achieving economic and social development have been widely recognized beneficial for economic growth and development. *De facto* entrepreneurship does make a fundamental contribution to development by fostering structural change and growth and acting as a tool for people to escape from poverty and inequality (Naude, 2010b). However, what emerge from preliminary results is that Empretec programmes does not produce any positive effect in fostering the creation of already internationalized firms. Therefore, as far as it concerns the future researches may verify deeper who are the subjects involved in the internationalization. Furthermore, a deeper analysis might give insights into how and why entrepreneurs decide to move or not their business overseas. In future researches, several topics should be analysed in a deeper way, starting from our study. Hence, future studies could build upon this limitation to examine which individual characteristics and subject's attitudes impact negatively hindering international entrepreneurship.

How do the results of our thesis are worthwhile? What indications can we provide to the policy-makers?"
The studies collected in this thesis and the experimental work we made, provide clear guidance for policy makers. Specifically, through this analysis they may figure out the role of mind-set and skills in enabling individuals to both

recognize and capitalize on international entrepreneurial opportunities.

Thus, eventually, to understand how training programs can get better and what are the main determinants they should work on in order to enable an international mind-set.

Chapter 4

Methodology

In this Chapter, we present the methodology applied to investigate the objective of the thesis. In other words, we will describe the methodology and methods used in this research process, what was done, how and why. According to what literature suggests, a mixed method approach has been adopted by the Project Polimi Team in conducting the research. Thus, the study adopts qualitative and quantitative and experimental analyses.

4.1 Experimental Economics

Given the nature of entrepreneurship and the fact that it is still an emerging field especially in developing countries, we consider experimental methods as necessarily in order to better understand international entrepreneurship in Panama and ensure a strong robustness of our study. The question that motivate our choice is "what experimental economics offers?", "why it is important to adopt it?".

More specifically, Experimental methods offer the opportunity to significantly improve the evidence for the causal relationships in international business

research in several ways. In this section we highlight the importance of experiments as a useful tool to study international entrepreneurship in developing countries: making a theoretical contribution is central, and the evidence available supporting the causal relationship proposed in the theory is a significant component when judging the level of insight and impact the study's conclusions provide. Still, experimental methods can be used to make strong theoretical contributions to IB, and we suggest that by thinking experimentally it is possible to evaluate the origins of constructs and the robustness of the causal relationships in theory. In describing the usefulness of experimentation in economics research, Croson, Arnad and Agarwal (2007) noted that experiments can "be designed to capture what researchers believe are the relevant dimensions of the field and to replicate the regularity in controlled conditions. Moreover, Experimentation, offers strong tests of internal validity. Internal validity concerns causality (Campbell & Cook, 1976) or the assessment of a cause and effect relationship between two variables. However, experiments, even when involving manipulation of the treatment and random assignment to conditions, still remain vulnerable to a variety of threats to internal validity. For instance, despite random assignment across treatment conditions, it is possible that the groups obtained had pre-existing differences (as noted previously, could result from random assignment with small sample sizes) on a quality that systematically altered the response of one group to the treatment as compared with the other. In this case, the observed XY relationship was spuriously generated by the unobserved difference between the groups. However, by being aware of this problem, known as selection threat, can we implemented a research design with a pre-test of the dependent variable. Thinking experimentally involves, among other things, critical thinking to rule out plausible alternatives, better understanding of our theoretical constructs by considering the research context, and thoughtful effort to enhance conclusions about covariation, causal order, and alternative explanations through research

design. Moreover, by adopting experimental economics we have the possibility to better understand the nature of our constructs by separating the function of the construct from the context in which it is embedded. Yet by thinking experimentally, we evaluate constructs in terms of their relationship to other constructs, while controlling for the effects of specific contexts. Finally, Experimental thinking can help in evaluating evidence for cause and effect, and to reinforce design choices and analytical approaches that allow stronger causal tests if true experiments are not possible.

The choice of the methodology is influenced by the practical objectives of the thesis, and comes as a part of a more articulated and wide research that has been developed by Politecnico di Milano in collaboration with UNCTAD United Nations Conference on Trade and Development, Genève).

The next section will describe more deeply the experimental methods used while the qualitative and quantitative methods implemented by other members of the research team will be described only here.

Among the qualitative methods of investigation, the literature indicates different possibilities to capture the experiences of the professionals: narratives, interviews, diaries, surveys, observations films and photos.

Qualitative methodology is more than a set of data-gathering techniques, it is a way of approaching the empirical world (J. Taylor et al., 2015). Nevertheless, qualitative researches develop concepts, insights and understanding from patterns in the data rather than collecting data to asses preconceived models, hypothesis or theories (J. Taylor et al., 2015).

On the other hand, quantitative research aims at quantifying opinions, attitudes and behaviours and find out how the whole population feels about a certain issue, allowing us the possibility to make a statistical comparison between the different groups involved. More specifically, in assessing the effectiveness and

impact of social programs, the dominant evaluation paradigm adopted by the team is based on the Differences-in-differences-type strategies that use repeated observations to control for unobserved omitted factors. This method enables to identify the causal relationship between certain outcomes and the "treatment" (Angrist J. D. and J. S. Pischke, 2008).

The chapter is organised as follow: the first part is dedicated to the context of application and the research setting, considering the actors involved and the location selected. The second part is a focus on the tools adopted during the research analysis (survey and experiments), while the third one describes the approach and the procedures adopted to prepare participants.

4.2 Research Setting

Actors involved

Our experiments include at least three main actors:
- *The group of participants*: typically formed by 10 to 25 people, coming from the same background. The more homogeneous the groups in terms of background and perspectives the better. Large groups increase the difficulty of management and arrangement, usually demanding more involvement of the researchers, with a bigger challenge to maintain discipline.

  Thus, it was important to set up groups where participants were likely to share common interests and encounter similar characteristics.
- *Polimi team:* the team was composed by six members, each of them was in charge of a specific function.

- *An assistant coordinator*: this position was usually in charge of the Doctor Rotondi, who managed and supported the team during all the experimental sessions.

<u>*Location*</u>

When selecting a location to conduct both the surveys and the experiments, we took into consideration different issues:

- **Comfortable and Accessible**: Select a room that is comfortable for participants. Make sure that the furniture is adequate since participants sit for at least one hour. Moreover, during our activities, we made sure the room could accommodate the invited number of participants;
- **Neutral:** Choose a "neutral" setting for the meeting. More importantly, when setting up the room it was important to prepare classroom by placing benches sufficiently spaced so that participants cannot communicate neither with each other nor to copy. Thus the seats were arranged in a circular or U–shape. Nevertheless, over each bench it was placed a number that indicates the ID of the participant.

4.3 Survey

4.3.1 Introduction to the use of a survey

The next step of the application of the methodology is to understand the real context of entrepreneurs through the perceptions of personal backgrounds, personal attitudes and dominant traits of an entrepreneur.

The tools which best suit the aim of this work are observations, interviews and surveys.

The survey method has been chosen for a certain number of reasons (Giacomazzi, 2002):

- Possibility to reach a remarkable number of entrepreneurs in a short range of time;
- In a non-intimidating survey environment, we learn about what motivates survey respondents and what is important to them, and gather meaningful opinions, comments, and feedback. A non-intimidating survey environment is the one that best suits the privacy needs of the survey respondent. Respondents are more likely to provide open and honest feedback in a more private survey method;
- Surveys results provide a snapshot of the attitudes and behaviours – including thoughts, opinions, and comments – about our target survey population. This valuable feedback is the baseline to measure and establish a benchmark from which to compare results over time.

The surveys, nevertheless, include also negative aspects in comparison to other methods:

- Possibility of a low redemption rate, which can affect the representativeness of the sample;
- The survey that was used from the very beginning, as well as the method of administering it, cannot be changed all throughout the process of data gathering;
- Questions in surveys are always standardized before administering them to the subjects. We are therefore forced to create questions that are

general enough to accommodate the general population. However, these general questions may not be as appropriate for all the participants as they should be.

These are considered acceptable disadvantages, because the methodology involves further investigations.

The survey is considered the initial collection of information in order to better figure out the results of the following experiments. To be effective, a survey should be simple, clear and short. The structure of the document depends on the phenomenon investigated, on the method of interview and on the question's type (Bradburn, Sudman, & Wansink, 2004).

4.3.2 Construction of the survey

The three different pairs of students composing the Polimi Team created their own version.

They share the same framework, but not the same questions. Therefore, each pair developed its survey focusing on specific topics that could better analyse and investigate the characteristics of the entrepreneurs. Thus, the final survey is the mash up of the three different surveys: we took into account the most relevant topics for each surveys and created a Final survey, which explores all the aspects useful to deeply understand traits and behaviours of the entrepreneurs.

In this section, it is first explained how the Final survey is composed and the meaning of the topics. Secondly it is described the validation process of the survey and finally what is the population surveyed.

4.3.3 Survey design

The Final survey, which follows a semi-structured layout, is composed of six main categories/topics:

1. *General questions*: asked in order to know the level of instruction, gender, age, language, marital status of the entrepreneurs. They allow to have a first screen of the person. Moreover, it includes also *Family background* questions, which try to investigate the composition of the family and role of the entrepreneur in the family.

2. *Networking*: in this section we aim at understanding what is the connection between the entrepreneurs and the environment, their future expectations and the degree of satisfaction in their social contest.

3. *Risk aversion and locus of control*: the aim is to understand how strongly people surveyed believe they have control over the situations and experiences that affect their lives and the degree of risk aversion of an individual. In particular, locus of control refers to how entrepreneurs perceive the causes of their professional success or failure in managing a business, while risk aversion refers to what extent entrepreneurs prefer a certain outcome rather than a risky one.

4. *Overconfidence and personal attitudes*: measures the personal traits of individuals. Overconfidence refers to the tendency to be very sure of a fact and later finding that the objective reality was different. Personal attitudes include the understanding of innovative behaviours of a person, the degree if innovativeness and creativeness when dealing with a

business and accepting new ideas, and attitudes towards entrepreneurship
such as facing new situations and challenges.

5. *Entry in a new foreign market:* wants to understand whether the
   entrepreneurs have an international mind set and want to expand their
   activity overseas. Moreover, tries to discover the reasons behind their
   choice and what are the entry mode options to expand abroad the
   activities.

6. *Ambiguity aversion:* also known as **uncertainty aversion** is a preference
   for known risks over unknown risks. An ambiguity-averse individual
   would rather choose an alternative where the probability distribution of
   the outcomes is known over one where the probabilities are unknown.
   Specifically, the ambiguity aversion topic is treated in the last conclusive
   question in which was introduced the Ellsberg paradox choice.

4.3.4 Ambiguity Aversion

Ambiguity Attitudes and Economic Behaviour

One of the fundamental problems in the study of decision making is the analysis
of choices under uncertainty, especially when the probabilities or payoffs to an
event are unknown. In decisions under uncertainty the probabilities of the
underlying events can often be imprecise, vague, or ambiguous. Choices
involving uncertain events can generally be classified in two categories: risky
events and ambiguous events. Hence, people must consider both the *risk* and the
ambiguity of future outcomes when making decisions. A risky event is an event
that is typically thought of as having a clear probability for a given outcome.
Ambiguous events encompass a greater degree of uncertainty. This would

include not only being unsure of the outcome of an event, but also not being sure of the probability of an event or the payoff associated with an event.

However, the advent of the Ellsberg paradox reintroduced the importance of ambiguity in affecting decision-making (Ellsberg, 1961). More specifically he showed that people usually prefer risk rather than ambiguity, and he defined an *ambiguity-averse* individual as one who prefers a lottery with known probabilities over a similar lottery with unknown probabilities. By using the traditional two-urns Ellsberg, it is possible to examine the predictive power of alternative principles of choice under uncertainty, the sure-thing principle, and the principle of insufficient reason. Ellsberg choices are expressions of rational decision makers facing ambiguity.

Therefore, we developed a survey module for the general population that elicits respondents' ambiguity attitudes using questions based on the classic Ellsberg urn experiment. Our method has several attractive aspects. More specifically, we aim at testing whether ambiguity attitudes can explain a rich variety of real-world economic behaviours. We next try to figure out whether ambiguity attitudes help to explain why a large fraction of the subject decide to no enter in a given market to start a new business. Several theoretical papers propose that ambiguity aversion can explain non-participation.

Measuring Ambiguity Attitudes

In order to measure ambiguity attitudes. We set up a question in which each subject had to choose between an ambiguous Urn B (Unknown) and an unambiguous Urn A (Known), similar to the famous Ellsberg (1961) two urn experiment. Still, both boxes contain exactly 100 balls, which can be red or white. For Urn A, the number of balls is explicit (50 red balls and 50 white. For Urn B, the number of white and red balls is not given, and the respondent only

knows it is between 0 and 100. Thus, if a respondent prefers Urn A Over Urn B, it implies he displays ambiguity aversion (an aversion of making decisions with unknown probabilities). Vice-versa if a respondent prefers Urn B over Urn A, it implies he displays ambiguity propensity (proneness of making decisions with unknown probabilities).

Eventually, an ambiguity-neutral subject treats Urn B as if the subjective probability of winning is 50%, equal to the 50% known probability of winning for Box A. Finally, in a following question we asked subjects to suppose of being in the second case, Urn B. The respondents had to answer whether he/she were willing to pay something in order to switch into the first scenario.

4.3.5 Risk aversion and locus of control

An examination of ambiguity aversion necessitates an ex- amination of risk aversion, to separate out the two effects. Therefore, a section of the survey is dedicated to the investigation of the risk aversion and locus of control topic. One of the objectives of the survey, indeed, is to understand to what extent the people interviewed perceive the risk, exanimating the **degree** to which entrepreneurs' **locus** of **control**. Theory of choice under uncertainty implies that preferences for risk should strongly affect individuals' choices in a variety of contexts. Thus, differences in risk attitudes and locus of control across individuals should be very important in explaining observed differences in entrepreneurship behaviour.

The survey has a specific section designed to elicit attitudes towards risk. Each participant was asked answer a question, self-grading themselves in a range from 0 to 10. Specifically:

"How do you see yourself: Are you in general a person who takes risk or do you try to evade risks?"

To complete the understanding, there is also the request to specify to what extent their beliefs agree or disagree with some International Entrepreneurship Risk Taking Propensity statements.

We believe that elicited risk aversion and locus of control have considerable predictive power for a number of key entrepreneurship decisions, including the decision to enter in a given foreign market. The theory of choice under uncertainty implies that the attitude an individual has towards risk is decisive in a variety of contexts that are critical for understanding individual behaviour. According to theory, differences in risk aversion among individuals should show up sharply in their occupational choices and their decisions on how to allocate accumulated assets, how much insurance to buy in the market, how much security and in their choices of making plans for the future.

4.3.6 Validation of the survey

The final version of the survey has been evaluated, discussed and modified in collaboration with Empretec Panama and the Doctor Valentina Rotondi: the local staff identified some problems in the survey, which could have led to difficulties and misunderstanding in the surveys' distribution. In particular, we had the possibility to work with Lourdes Navarro, strategy and management consultant for Empretec Panamá, who helped us to improve the comprehensibility of the survey.

To be precise, the main points on which we stressed are:

- *Survey's anonymity* - The survey is introduced by a preliminary question that asks name and surname of the interviewee. The survey was meant to be anonymous, actually it was, but jointly with the local staff we opted to ask to write the name and surname of the person surveyed. This because of we need to carry out a follow up survey in which we ask to the same person to retake an identical survey.

- *Questions order* - Every question is distributed into specific a section according to its category. In the first version of the survey, some questions regarding general features of the entrepreneurs such as the educational and family background were divided in more than one question. During the validation, it seemed useful to group them in one longer question and reduce the overall amount of questions.

- *Further question* - During the validation process, through a benchmarking with the Politecnico di Milano's professors, we found useful for our analysis introducing additional questions in the survey regarding entry mode choices for a new foreign market.

- *Not appropriate lexical choices* - This was definitely the major critical aspects of the validation process. Still, the people surveyed were very heterogeneous and most of them had a very low level of education background: this means that we had to review all the questions with a complex lexical language and make them as simple as possible. Some questions were streamlined and some multiple-choice answers were reduced.

- *Misunderstanding in the Ellsberg paradox* - During the different sessions emerged a misunderstanding related to the question thirty-five, the conclusive one, regarding the Ellsberg paradox. According to what we

said before, a simplification was needed in order to make the question easily understandable for our target.

The last version of the survey is attached in appendix A (Spanish version).

4.3.7 Ways of submitting the survey

The survey was thought to be supplied in two different ways:

- Paper filling;
- Attached to an e-mail for the follow up.

As we previously mentioned, the research analysis involves a follow up; thus the local staff jointly with the Polimi researchers will commit to retake the survey to the same individuals in specific time windows: three weeks later and three, six, twelve and eighteen months later. More specifically, the follow up aims at measuring and analysing the outcome variation of the answers. Eventually, since it looks not to be useful for the purpose of this study, we do not include the follow up analysis.

4.3.8 Sampling

The sample is drawn upon non-probability, which means that the researchers have not chosen the sample upon random. The choice of people interviewed was made in collaboration with the Empretec centre and from there the chosen people were selected. The target of people interviewed has been very heterogeneous, hence this allows to have a wide range of data to explore and analyse.

In particular, we had five different typologies of people to conduct the survey:

- *Local entrepreneurs:* men and women, who are attending or have already attended a training program to become entrepreneurs. Specifically, some of those have already established entrepreneurial activities.
- *Women:* they are a particular typology of women coming from an extremely complicated social background who previously lived in social risk area. This women, thanks to the help of some volunteer foundations, are acting in order to get better their life.
- *Students:* group of students who are attending the university and aim at becoming entrepreneurs.
- *Professors:* group of professors coming from the same university of the previous mentioned students.
- *Pandillas*: group of people who had a criminal background in local clan and are now willing to change their life becoming entrepreneurs.

In the following tables are listed the amount of people surveyed and their percentage composition.

Table 3 - Sample observations

Entrepreneurs	Women	Students	Professors	Pandillas
96	27	99	24	8

Source: Authors' analysis, 2016

Figure 11 - Survey sample
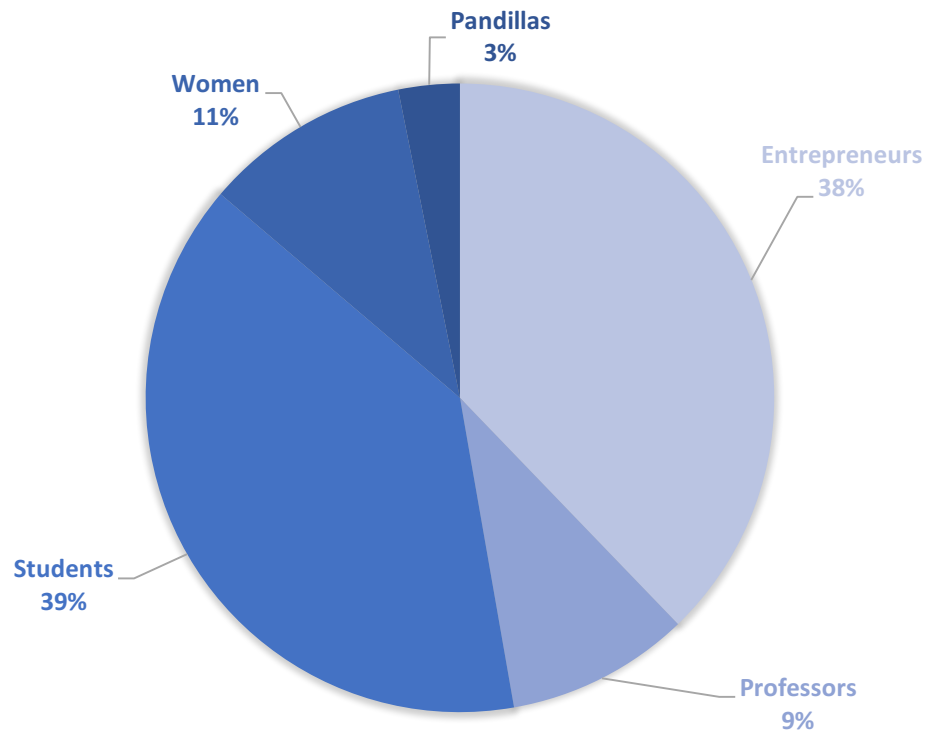
From this population, in this thesis we restrict the sample study to specific groups: Students and Entrepreneurs.

These groups of people were selected because of the suitability with the aim of our analysis and specifically with the Georgantzis experiment.

4.4 Georgantzis experiment

4.4.1 Introduction and game explanation

After the survey, the methodology includes also the three experiments we have

adopted, suggested to have a deeper understanding of the context. In a previous stage, we implemented two risk-elicitation tasks, one introduced in Holt and Laury, (2002) and the other in Sabater-Grande & Georgantzis, (2002) the description of the two experiments is presented in Appendix E and F. More specifically, the first is a test designed to classify subjects according to the intensity of their aversion or attraction to risky choices. The latter is designed to measure the degree of risk aversion, making no distinction between risk loving and risk neutral behaviour.

In a second stage we implemented Georgantzis' experiment, the one on which we focus on in this thesis, which proposes an explanation of a firm's entry choice into a foreign market based on the interaction between two factors. The first, an external one, depending on market uncertainty and the second, an internal one, related to the decision maker's attitude towards risk. A firm is more likely to prefer the FDI entry mode rather than to export, the higher the informational benefits from directly investing in and learning on the local market. Therefore, firms with a more risk averse attitude require a higher learning advantage to undertake FDI. Barac and Moner-colonques, (2015) argues that the foreign firms own an informational disadvantage relative to the host firm regarding host demand. This is also known as "liability of foreignness". Liability of foreignness (LOF) is a well-known concept in international business domain. At the core of LOF is the insight that firms face social and economic costs when they operate in foreign markets. Still, it is shown that there is a strategic learning effect associated with the FDI strategy.

In our analysis, we developed a two-stage oligopoly game under demand uncertainty and asymmetric information, where first the foreign firm decides whether to serve the host market through exports or direct investment and, then, it competes in quantities against the informed host firm. As we said before, only when entry occurs through direct investment the foreign firm could solve the uncertainty problem: it learns whether the demand realization is the good state

or the bad state.

Variability in demand favours the investment strategy absent risk aversion. However, this may change when the foreign firm is risk averse. A sufficiently high degree of risk aversion will turn variability in demand advantageous to the export strategy. The question then arises, will the risk-averse foreign firm still have an incentive to enter via investment and learn local demand characteristics? Risk aversion shapes the intensity of competition. More in detail, a high degree of risk push firms leaning toward the adoption of an export strategy. We argue that, when the foreign firm is sufficiently risk-averse, variability in demand increases the expected utility of exports and decreases that of investment. Entry via FDI requires a significant probability of the good state of demand (larger than under risk neutrality). Hence, only in this scenario firms will be able to cover the fixed setup costs.

Our experimental design relates somehow to (Oechssler & Schipper, 2003), as it involves subjects who are uncertain about the game they are playing. Their focus is on the ability of subjects to learn the game they are playing in a repeated framework, while our design allows subjects to invest in a costly strategy letting them know the game they are playing with certainty. We can assume that FDI is a costly but uncertainty-reducing strategy, whereas exports involve lower costs but a higher uncertainty concerning the demand conditions in the local market. In the following part we present the model describing the experimental design.

4.4.2 Experimental design

A population of 89 subjects, recruited among heterogeneous group of people between Panama City and the rural areas, participated in 4 different sessions.

Left (L)

Foreign / Local	A	B
A	(11, 11)	(9, 10)
B	(10, 9)	(8, 8)

Right (R)

Foreign/Local	A	B
A	(18, 18)	(15, 19)
B	(19, 15)	(16, 16)

The table shows the pay-offs corresponding to the two games implemented in order to represent interaction between the local and the foreign firm in the local market. The game on the left (L) corresponds to the bad state of demand and the game on the right (R) to the good state. It could be observed that for a subject who knows the state of demand, A is the dominant strategy in L and B is the dominant strategy in R.

A corresponds to a low output and B to a high output, yielding a prisoner's dilemma in the good state of demand, while the Nash equilibrium is Pareto dominant in the bad state. There are two different kind of players: Foreign and Local.

The Foreign Player knows in which box is located (and thus is an informed player) or do not know in which box is located (therefore is an uninformed player).

Each of the two players choose a strategy, A or B.

- *The Local player* select a strategy for each panel. This means he can choose a different strategy for each box, or the same strategy for both.
- *The Uninformed Foreign player* have to submit a single strategy, A or B, without knowing whether they are facing the good or the bad state, hence whether they will be playing Game L or Game R. However, he has the possibility to pay a fixed amount, in order to become informed (this sum

corresponds to the FDI-related fixed cost), thus, acquiring the right to play different strategies across the two games. During our session we adopted two different treatments, one with a low (2.5$) and another with a high (5$) value of X.

- Finally, *the Informed Foreign players* can choose a different strategy for each box, or the same strategy for both.

At the beginning of the experiment, the role of a foreign firm was randomly assigned to half of the subjects and the role of a local firm to the other half. Therefore, each subject submitted a strategy either as a local or as a foreign firm.

In the case they were playing as Local firm they submitted their strategy if they were playing both with an Informed Foreign player and Uninformed Foreign player.

In the case in which they were playing as a Foreign firm they submitted a single strategy for both games under the scenario of being uninformed and two strategies, one for each game, under the scenario of being informed. Finally, when playing as foreign firm, they decided whether to enter into the foreign market using FDI or through exports. This was based on the two values of FDI-associated extra fixed cost, the sum X (either X=2.5$ o X=5$ depending on the session). Eventually the final payoffs were determined for each participant relying on each subject's decision in the scenarios chosen. Importantly, we provide real rewards to subjects based on their choices, since prior studies have found that this helps focus participant attention.

From the Georgantzis game the following hypotheses can be derived and tested experimentally:

H_1: Local firms will play the dominant strategy in the market game regardless of

the foreign firm strategies.

H$_2$: Informed foreign firms will play the dominant strategy in the market game.

H$_3$: Uninformed foreign firms are more likely to play A the more risk averse they are.

H$_4$: For any probability of the good state of demand, foreign firms are more likely to purchase information the more risk averse they are.

The Spanish version of the Georgantzis game instructions are attached in Appendix B.

4.5 Stages and procedures

The experiment followed five main stages:

1. *Preparation*

    Participants were summoned outside the classroom. An assistant waited for them outside and made them come gradually in one by one, giving them a coupon indicating the ID of the participant. The other assistants, which were inside the classroom helped the participant to reach the post corresponding to his ID.

2. *Introduction*

    The instruction during all the conversation were red in Spanish in order to allow all the participants to understand. Finally, the Polimi team proceeded to the delivery of the general instruction, which are attached in Appendix C.

3. *Games elaboration*

- The moderator explains the game reading the tasks. Once red each task, the moderator summarizes in four to five minutes the key questions and the main ideas that emerged during the discussion. The Polimi assistants asked the participants to expose their doubts and perceptions, to which they will answer.

- The assistant will give a sealed envelope. Inside there is a sheet on which is indicated if the participants are a foreign player or a local one

- The assistants deliver the answer sheet according to the type of player the participant is. Together with the 'answer sheet delivery, one of the assistants verifies that the answer sheet's ID corresponds with the ID of the assigned place. When all participants have chosen, the assistant gathers them together with the instruction sheet.

- At the end of the experiment if this task was chosen to be paid, each participant is randomly paired with another player.

- It then proceeds to the extraction of a ball from an urn containing a yellow ball and a white ball. If the ball drawn is yellow, the foreign player is an informed player. If the ball drawn is white, the foreign player is an uninformed player.

- Then the assistants proceeded to the extraction of a ball from an urn containing 2 balls. If the ball drawn back "L" the game was played taking into account the cell "L", otherwise in the "R".

Finally, each participant is paid in dollar the amount shown in the table, in the cell resulting from the intersection of the strategy he chose and strategy the other player chose.

4. *Survey elaboration*

   Participants are asked to fill a survey in which the questions refer to different topics. While participants perform Survey, assistants run between the participants to answer their questions.

5. *Closure*

   At the end of the Survey it is extracted on of the three tasks that will be used to determine the gains of each participant. Moreover, this stage is useful to thank participants for attending the session, to acknowledge the experiences and views of participants.

4.6 Empirical analysis

The collection of the data has been done locally using the 'paper and pencil' method: Polimi team met personally each subject in different locations and distributed the experiments' instructions, the experiments' answer sheet and the questionnaire to each of them. People interviewed filled each answer in the papers and the data were collected. Each answer, both for the experiments and questionnaire, was coded (i.e. considering the questionnaire, question "What is your gender", the answer "Male" assumed value 1 while "Female" assumed value 0). Each answer coded was inserted in a master sheet in Excel, named "Final database". The process of coding was needed because the following step is to analyse the data using a software called Stata. It is a powerful tool where you have to programme instructions in order to extract and analyse data from a

database. The database must be composed only by numbers; the software does not read words or strings. That is why we needed to code all the answer in numbers. To better understand how Stata works see (Broekhuizen, 2014).

4.6.1 Error bars

In our analyses we need to demonstrate that two samples of subjects are statically identical. We firstly perform a graphical analysis to see whether the two sample are comparable or not. An error bars statistical significance indicates whether or not the difference between two groups' averages most likely reflects a "real" difference in the population from which the groups were sampled. In order to assess whether the groups are comparable or not, we use the Standard Error as benchmark to perform the error bars analysis. First of all, we need to calculate the standard error as follow:

$$Std. Error = \frac{\sigma}{\sqrt{n}}$$

where σ is the standard deviation and n is the number of observations. SD is calculated as follow:

$$Std. Deviation = \sqrt{\frac{\Sigma(X-M)^2}{n-1}}$$

Where X refers to individual data point, M is the mean, and Σ (sigma) means to add the sum to find the sum, for all the n data points. SD is, roughly, the average or typical difference between the data points and their mean, M.

A big advantage of inferential error bars is that their length gives a graphic signal of how much uncertainty there is in the data: the true value of the mean μ

we are estimating could plausibly be anywhere in the 95% confidence interval. Wide inferential bars indicate large error; short inferential bars indicate high precision. It is highly desirable to use larger *n*, to achieve narrower inferential error bars and more precise estimates of true population values (Cumming, Fidler, & Vaux, 2007).

Two groups are comparable if the two error bars overlap, this is the case (a) and (b) in Figure 12.

Figure 12 - Bar errors
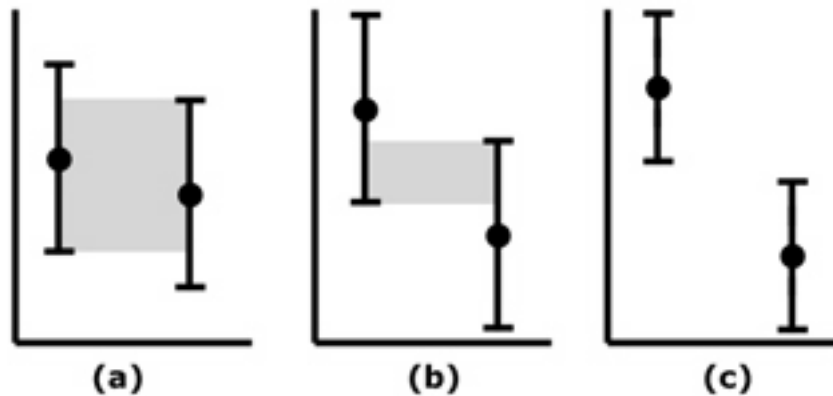
Source: Authors' analysis, 2016

4.6.2 T-test

Another way to assess whether two samples are comparable or not is to perform a two sample t-test with equal variance. The t-test assesses whether the means of two groups are *statistically* different from each other. This analysis is appropriate whenever you want to compare the means of two groups, and especially appropriate as the analysis for the post-test-only two-group randomized experimental design.

Figure 13 - T-distribution

Group X

Group Y
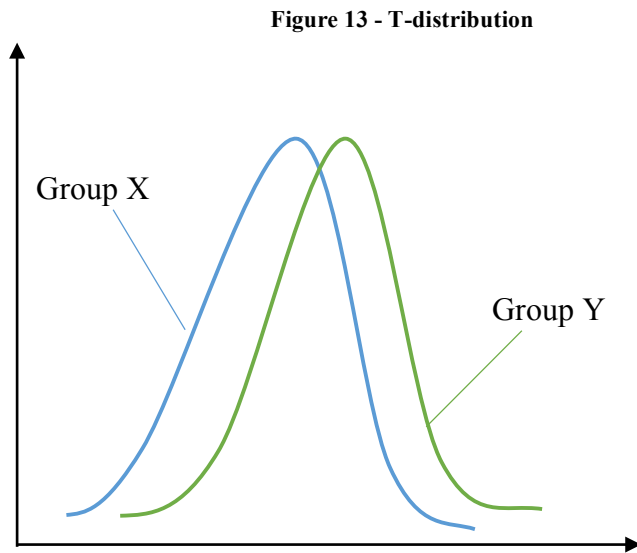
Source: Authors' analysis, 2016

The formula for the t-test is a ratio. The top part of the ratio is just the difference between the two means or averages. The bottom part is a measure of the variability or dispersion of the scores. This formula is essentially another example of the signal-to-noise metaphor in research: the difference between the means is the signal that, in this case, we think our program or treatment introduced into the data; the bottom part of the formula is a measure of variability that is essentially noise that may make it harder to see the group difference.

$$t\text{-}value \ = \ \frac{difference \ between \ group \ means}{variability \ of \ groups}$$

$$= \frac{\bar{x} - \bar{y}}{SE(\bar{x} - \bar{y})}$$

The top part of the formula is easy to compute, just find the difference between the means. The bottom part is called the standard error of the difference. To compute it, we take the variance for each group and divide it by the number of people in that group. We add these two values and then take their square root.

$$SE(\bar{x} - \bar{y}) = \sqrt{\frac{\sigma_x^2}{n_x} + \frac{\sigma_y^2}{n_y}}$$

The final formula is:

$$t = \frac{\bar{x} - \bar{y}}{\sqrt{\frac{\sigma_x^2}{n_x} + \frac{\sigma_y^2}{n_y}}}$$

The t-value will be positive if the first mean is larger than the second and negative if it is smaller. Once we compute the t-value we have to look it up in a table of significance to test whether the ratio is large enough to say that the difference between the groups is not likely to have been a chance finding. We set as risk level (alpha level) equal to .05. This means that five times out of a hundred we would find a statistically significant difference between the means even if there was none (i.e., by "chance"). We finally need to determine the degrees of freedom (DF) for the test. In the t-test, the degrees of freedom are the sum of the persons in both groups minus 2.

$$Degrees\ of\ freedom = n_x + n_y - 2$$

Given the alpha level, the DF, and the t-value, we look the t-value up in a standard table of significance to determine whether the t-value is large enough to be significant. If it is, we can conclude that the difference between the means for the two groups is different (even given the variability).

4.6.3 Regression analysis

The final step of our research is to perform a regression analysis. It is a statistical tool for the investigation of relationships between variables. In particular, we use a multiple regression technique, that allows additional factors to enter the analysis separately so that the effect of each can be estimated. It is valuable for quantifying the impact of various simultaneous influences upon a single dependent variable. Further, because of omitted variables bias with simple regression, multiple regression is often essential even when the investigator is only interested in the effects of one of the independent variables (Sykes, 2005). In our we will consider the following formula:

$$Y = \alpha_i + \beta_i Entry + \gamma_i X_i + \varepsilon_i$$

where

Y = Probability of a subject to enter in a new market with FDI;

α_i = constant amount for the observation I;

β_i = coefficient of the variable 'entry' for the observation i;

γ_i = coefficient of the variable 'X' for the observation i;

ε_i = noise term reflecting other factors that influence our model.

In the following chapter we explain all the variables that we used for the regression analysis.

We need to introduce now the concept of dummy variable. A dummy variable is a numerical variable used in regression analysis to represent subgroups of the sample in your study. In our case we use a 0-1 dummy variable where a person is given a value of 0 if they are in the control group or a 1 if they are in the treated group. Dummy variables are useful because they enable us to use a single regression equation to represent multiple groups. This means that we don't need to write out separate equation models for each subgroup. The dummy variables act like 'switches' that turn various parameters on and off in an equation. In particular, we use dummy variables in our regression analysis to analysis the four different groups presented in the following chapter. In our case is:

$$Y = \alpha_i + \beta_0 Risk_i + \beta_1 Risk_i Group1_i + \beta_2 Risk_i + \beta_3 Group2_i + \beta_4 X_i$$

where

Y = Probability of a subject to enter in a new market with FDI;

α_i = constant amount for the observation I;

β_0 = coefficient of the variable 'Risk' for the observation i;

β_1 = estimates the difference between groups;

β_2 = coefficient of the variable 'Risk' for the observation I;

β_3 = estimates the difference between groups;

β_4 = coefficient of the variable 'X' for the observation i.

Group1 and Group2 are dummy variables that assume value 1 if we are considering that group, 0 otherwise. In the following we explain in details all the variables used for the regression analysis.

Chapter 5

Empirical results

This section presents the data collected with the application of the methodology described in Chapter 4. In order to be clear, we will organize the result analysis in the following way. First we report **summary statistics** in order to summarize the set of observations found and communicate the largest amount of information as simply as possible. Second we present the main finding coming out from the Georgantzis experiment. Finally, we will interpret coefficients that appear in the output for linear regression analysis. On this basis, below we start with the presentation of summary statistics.

5.1 Summary statistics

According to what said in the previous chapter, due to financial and time constraints, we restricted the sample study to Students and Entrepreneurs. These groups of people were selected because of the suitability with the aim of our analysis and specifically with the Georgantzis experiment. More specifically, we selected the four groups of people listed in Table 4.

Table 4 - Group statistics

Group	Freq.	Percent	Cum.
Empretecos	18	20.93	20.93
Entrepreneurs Chorrera	20	23.26	44.19
Students Chitré	28	32.56	76.74
Students Ocú	20	23.26	100
Total	86	100	

Source: Authors' analysis, 2016

- Group 1: has been labelled *"Empretecos"* as it embeds entrepreneurs who attended the Empretec course described in previous chapters. If we look at Figure 14 and 15, we can see that their age varies from 18 to 54 years and their educational level is mainly a diploma or a bachelor degree; only two of them have a higher level of education. The experiments with the group has been done at the *Universidad de Latina*, Panama City, Panama.

- Group 2: is a group of local entrepreneurs belonging to the district of La Chorrera, located about 30 km south-west of Panama City. Their average age is slightly higher than group 1 but their ages also varies from 18 to 54 years. The same consideration can be made for their educational level but it is remarkable and must be underlined that three of them have never attended school or attended only a primary school. The experiments were conducted at *Casa de la Cultura*, municipality of La Chorrera, Panama.

Figure 14 - Group segmentation by Age
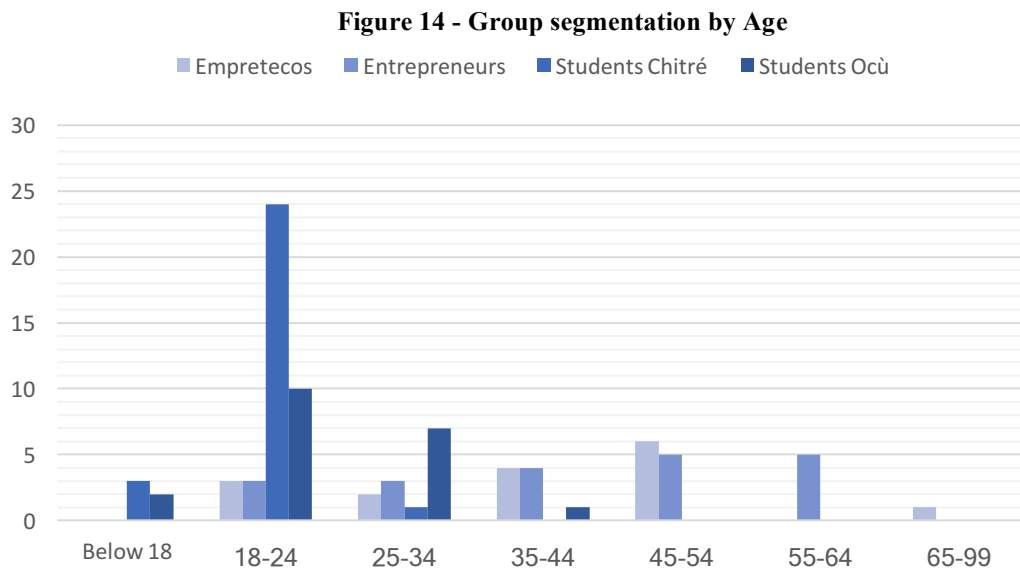
Source: Authors' analysis, 2016

- Group 3: it is a group of students from the municipality of Chitré, the capital of the Panamanian province of Herrera. Chitré is located about 7 km inland from the Gulf of Panama on the Azuero Peninsula. 70% of the students are females, while only 30% are males. Moreover, their age is concentrated between 18-24 years with few exceptions. Considering that they are students, all of them have attended at least a secondary school.

- Group 4: it is a group of students from the municipality of Ocú, in the district of Ocú, province of Herrera. 80% of them are females, while only 20% are males. Moreover, their age is concentrated between 18 and 35 years with few exceptions. As said for the previous group, considering that they are students, all of them have attended at least a secondary school, but, differently from the other group, the majority also have a diploma or bachelor degree.

Figure 15 - Group segmentation by Education
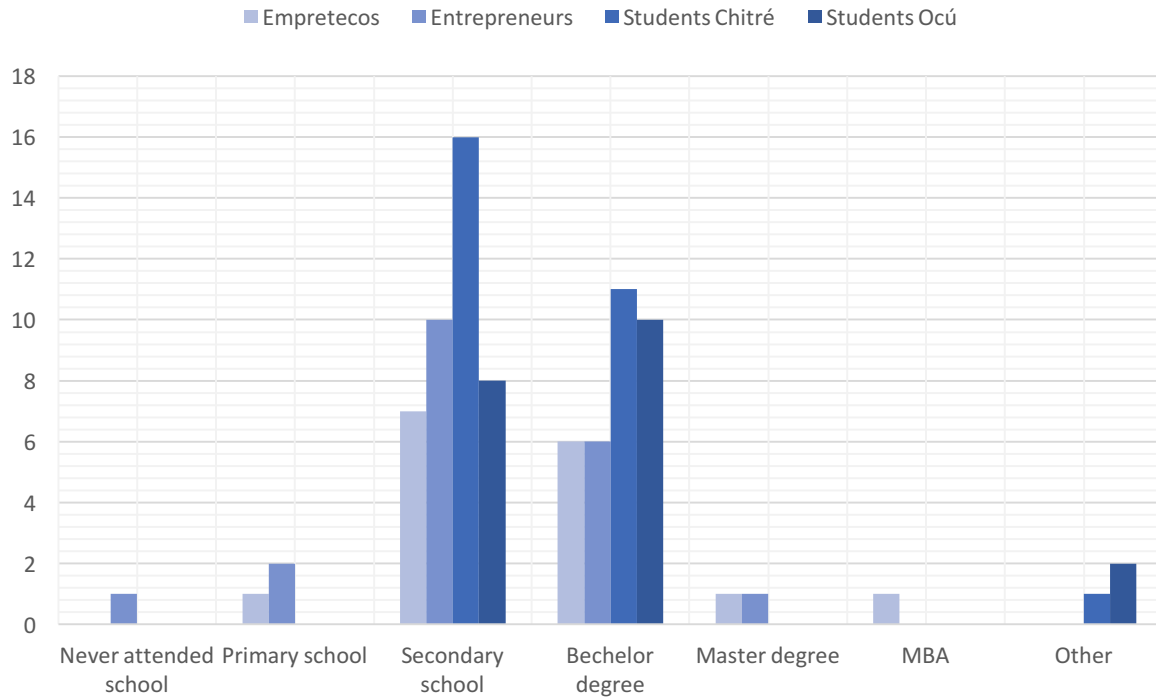
Source: Authors' analysis, 2016

Taking into account the above mentioned characteristics for each group, it was decided to play the Georgantzis game with either the low or the high 'X', as shown in Table 5.2. Following the rules of the game, each group was randomly split in two equal parts: half of the group played the game as a 'foreigner' while the remaining half as a 'local'.

Table 5 - Group statistics by Treatment

Group	Treatment		
	x=2.5$	x=5$	Total
Empretecos	0	18	18
Entrepreneurs Chorrera	20	0	20
Students Chitré	0	28	28
Students Ocú	20	0	20
Total	40	46	86

Source: Authors' analysis, 2016

Moreover, considering that the starting point of our analysis was the questionnaire, the next step was to define a set of variables useful for our regression model. A group of idiosyncratic features (gender, age, education, etc.), elicited through the final questionnaire, was therefore identified for them to be useful in the definition of a coherent explanation for future findings. Individual characteristics were associated to other variables that describe the locus of control, the risk aversion, the overconfidence and personal background of the sample. Table 5.3 provides the summary statistics used during the analysis of the data in Stata.

Table 6 - Summary statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Gender	84	0.2738095	0.4485906	0	1
Age	84	3	1.44789	1	7
Education	84	3.559524	0.9737666	1	7
Married	86	0.3139535	0.4668197	0	1
Children	86	0.6976744	0.4619592	0	1
Household head	86	0.2325581	0.4249406	0	1
Employed	84	0.1666667	0.3749163	0	1
Unemployed	84	0.0119048	0.1091089	0	1
Student	84	0.5	0.503003	0	1
Self-employed	84	0.1904762	0.3950352	0	1
Treatment	86	0.5348837	0.5017071	0	1
Family relationship	84	4.107143	1.029889	0	5
Family background	84	0.2380952	0.4284758	0	1
International entrepreneurial xp	84	0.1071429	0.3111524	0	1
Future attitudes	84	4.166667	0.8478653	2	5
Self-confidence	84	1.75	0.8341362	1	4
Innovativeness	84	3.845238	1.023743	1	5
Risk aversion	86	11.59302	4.470499	1	20
Ambiguity	86	0.1627907	0.3713399	0	1
_Igruppo_2	86	0.2325581	0.4249406	0	1
_Igruppo_3	86	0.3255814	0.47134	0	1
_Igruppo_4	86	0.2325581	0.4249406	0	1

Source: Authors' analysis, 2016

- *Gender* - it is a dummy variable which assumes value 1 if the person is a male, 0 if female.

- *Age* - the variable is divided into seven categories (below 18, 18-24, 25-34, 35-44, 45-54, 55-64, 65-99).

- *Education* – abbreviation of education. The variable is also divided in seven categories (Never attended school, Primary school, Secondary school, Advanced diploma/bachelor degree, Master degree, MBA, Other). Thus, having some information about the education background could be helpful in understanding how this variable can affect subject's business decision.

- *Married* – the original variable was 'marital status', composed by five categories (married, single, separated, divorced, widowed). For analytical purposes, we just need to know whether a married person could behave differently from an unmarried person when dealing with business. Therefore, the original variable was transformed in a dummy variable, which assumes value 1 if the person is married, 0 otherwise.

- *Children* – dummy variable, which assumes value 1 if the person has at least one child, 0 otherwise. The original variable investigated the exact number of children but, as in the previous case, we just need to know whether the presence of children affects the economic behaviour of presence.

- *Household head* – dummy variable, which assumes value 1 if the person considers himself/herself the household head of the family, 0 otherwise. The original variable considers other seven categories (wedded partner, unwedded partner, parent in-law, child living at home, house mate, family member or boarder, unknown). In this case, the aim is to discover whether a person with a strong personality in the family applies a specific behaviour when taking decision in business.

- *Employed* – the original variable, named *employment status*, distinguished between "employed by others in full-time work", "employed by others in part-time work", self-employed, seeking-employment, student, unemployed and full-time home-maker. To follow the purpose of our analysis, we

decided to ungroup this variable and create four dummy variables: *employed, unemployed, student* and *self-employed.* The rationale is that, the adoption of Stata, suggests to operate and work with dummy variables rather than using a grouped variable.

- *Unemployed* – as explained before, it is a dummy variable assuming value 1 if the person is unemployed, 0 otherwise.

- *Student* - as explained before, it is a dummy variable assuming value 1 if the person is a student, 0 otherwise.

- *Self-employed* - as explained before, it is a dummy variable assuming value 1 if the person is self-employed, 0 otherwise.

- *Treatment* – identifies the type of Georgantzis game played during the experiment. It is a dummy variable and assumes value 1 if is played the high 'x' (5$), 0 if low 'x' (2.5$).

- *Family relationship* – it a variable that assumes value 1 if the relationship of the interviewed person with his family is very poor, 5 if it is very good. This variable helps to understand the family background of the person and aim to analyse whether people living in positive family environment are less risk averse or more willing to internationalise their business.

- *Family background* – the variable asks whether you grew up in a family business or not. It is a dummy variable and assumes value 1 if the answer is yes, 0 if no. Like in the previous case, it investigates the family background of the person and analyses relationships between the answer and particular business behaviours.

- *International entrepreneurship experience* - the variable asks whether you have had previous international entrepreneurship experiences or not. It is a dummy variable and assumes value 1 if the answer is yes, 0 if no. More specifically, it investigates the personal background and analyses relationships between the answer and particular business behaviours.

- *Future attitudes* – the interviewed persons were asked to what extent they agree to this statement: "I believe it is important to make plans for the future as early as possible". The variable assumes value 1 if they strongly disagree, 2 if disagree, 3 if neither agree or disagree, 4 if agree, 5 if strongly agree. The variable wants to investigate the locus of control of a person and analyses relationships between the answer and particular business behaviours.

- *Self-confidence* - the interviewed persons were asked to what extent they agree to this statement: "My life is determined by my own actions". The variable is measured on a scale from 1 to 5 whereas 1 = strongly agree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree. The variable aims to investigate the locus of control of a person and analyses relationships between the answer and particular business behaviours.

- *Innovativeness* - the interviewed people were asked to what extent they agree to this statement: "I am generally cautious about accepting new ideas". The variable is measured on a scale from 1 to 5 whereas 1 = strongly agree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree. The variable wants to investigate the overconfidence of a person and analyses relationships between the answer and particular business behaviours.

- *Risk aversion* – the variable refers to the switching line in the Holt and Laury game. It assumes value 1 if they prefer to play lottery B (the riskier one), 20 if they always prefer to play lottery A (the safer one). The variable aims to describe a subject's risk attitude and analyses relationships between disclosed degree r of relative risk aversion and particular business behaviours.

- *Ambiguity* – it is a dummy variable which assumes value 1 if people interviewed are ambiguity adverse, 0 otherwise. In order to understand their

degree of ambiguity aversion they ask respond to a simple game (see Appendix A, question 35): if the first answer is 'Bag A' and the second one is 'Yes', it means they are ambiguity adverse. Thus through this variable the purpose is to investigate the ambiguity aversion of a person and analyses relationships between the answer and particular business behaviours.

5.2 Results Georgantzis game

From the game in Chapter 4, the following hypotheses can be established and checked experimentally:

H_1:   Local firms will play the dominant strategy [1] in the market game regardless of the foreign strategies.

H_2:   Informed foreign firms will play the dominant strategy in the market game.

H_3:   It can be assumed that people who played treatment 1 (X=5\$) are statistically equal to those who played treatment 0 (X=2.5\$). Therefore, for any risk attitude an increase in X implies less observed information purchase

H_4:   For any probability of the good state of demand, foreign firms are more likely to purchase information the more risk averse they are.

Before verify the aforementioned hypotheses, we firstly need to demonstrate that subjects who played treatment 0 (x=2.5\$) are statistically equal to those who played treatment 1 (x=5\$). We demonstrate that this hypothesis is confirmed in two ways: graphically, using the error bars methods, and analytically, performing a t-test for the two typologies of subjects. In both cases we took into consideration five variables: gender, age, employment status, risk

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[1] Remember that the dominant strategy for game L is 'A', while for game R is 'B'.

propensity and average risk aversion. The variables gender and age are defined in the previous section. Variable employment assumes value of 1 if the subject is employed, 2 if unemployed and 3 if is a student. Risk propensity assumes value from 0 to 10: subjects self-evaluate their propensity to take risk, 0 means they do not want to bear risk at all, 10 that there are very leaning toward risk. The variable average risk is the average of four variables who investigate the international entrepreneurship risk taking propensity (see Appendix A, question 23).
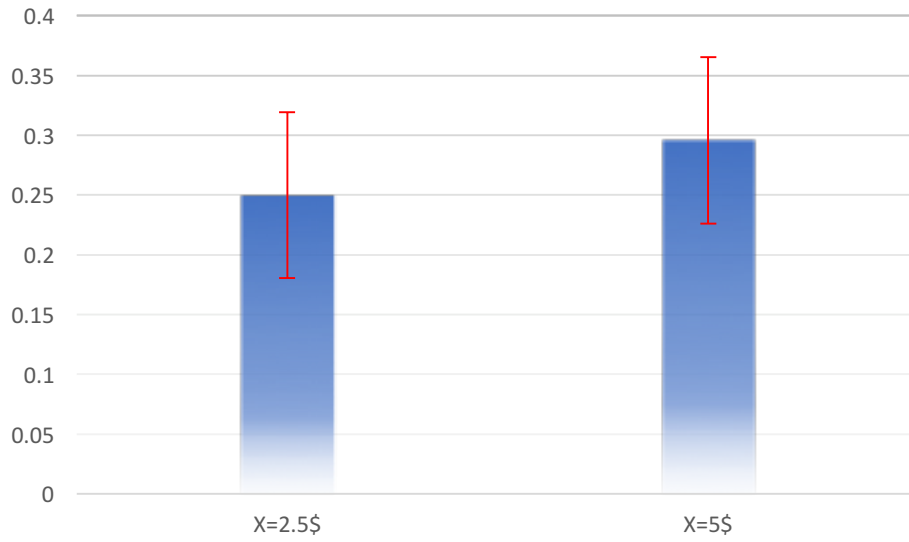
5.2.1 Error bars analysis

In Figure 16 to 20 are plotted the mean of all the variables for both treatments. In order to calculate the error bar for each variable in both treatments we calculated the standard error using this formula:

$$Std.\,Error = \frac{\sigma}{\sqrt{n}}$$

where σ is the standard deviation and n is the number of observations or subjects.

Graphically we see the error bars coloured in red and if the error bar of treatment 0 (x=2.5\$) can be horizontally overlapped with error bar of treatment 1 (x=5\$), it means that there is not a statistically difference between the two samples. It can be seen that this is verified for all the variables except in Figure 17 for the variable age. We conclude that this analysis confirms the hypothesis (H_3) that the two sample do not have statically differences in the means and therefore comparable.

Figure 16 - Error bars gender

Source: Authors' analysis, 2016

Figure 17 - Error bars age
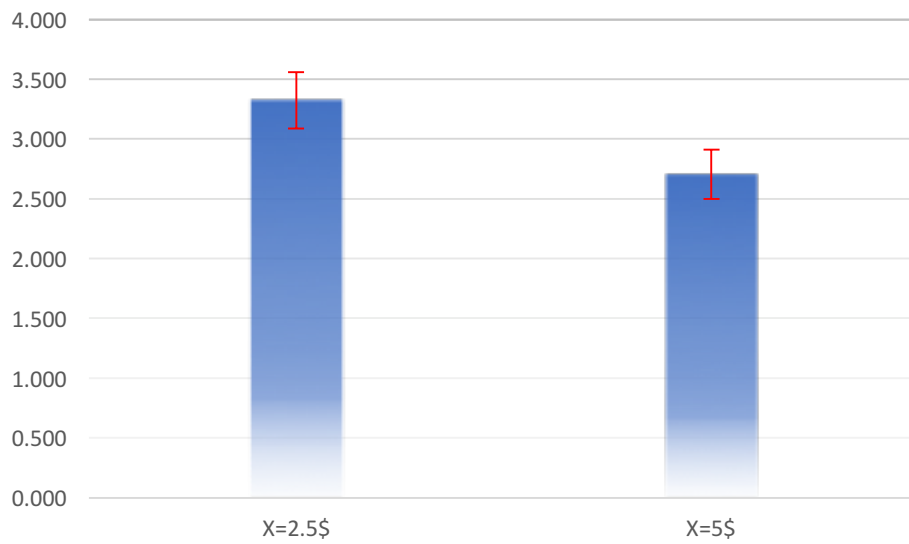
Source: Authors' analysis, 2016

Figure 18 - Error bars employment

Source: Authors' analysis, 2016

Figure 19 - Error bars risk propensity

Source: Authors' analysis, 2016

Figure 20 - Error bars average risk
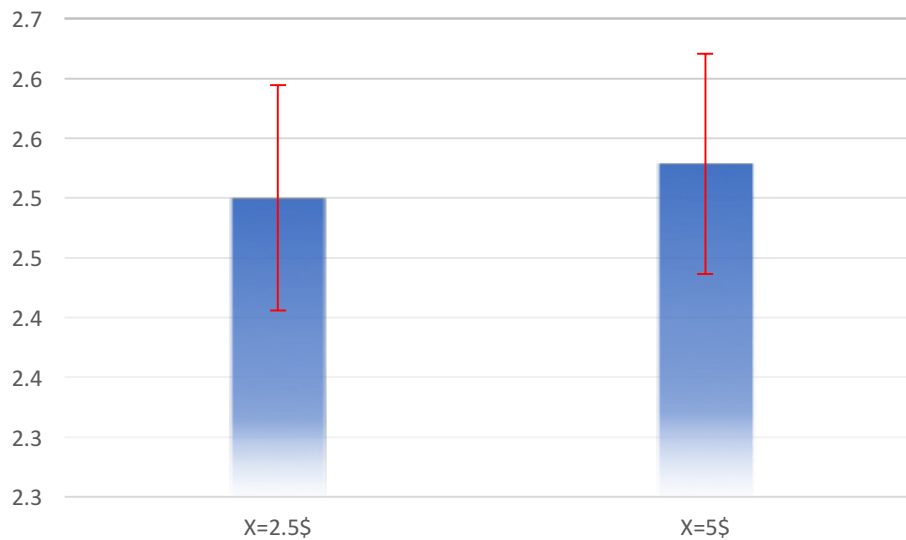
Source: Authors' analysis, 2016

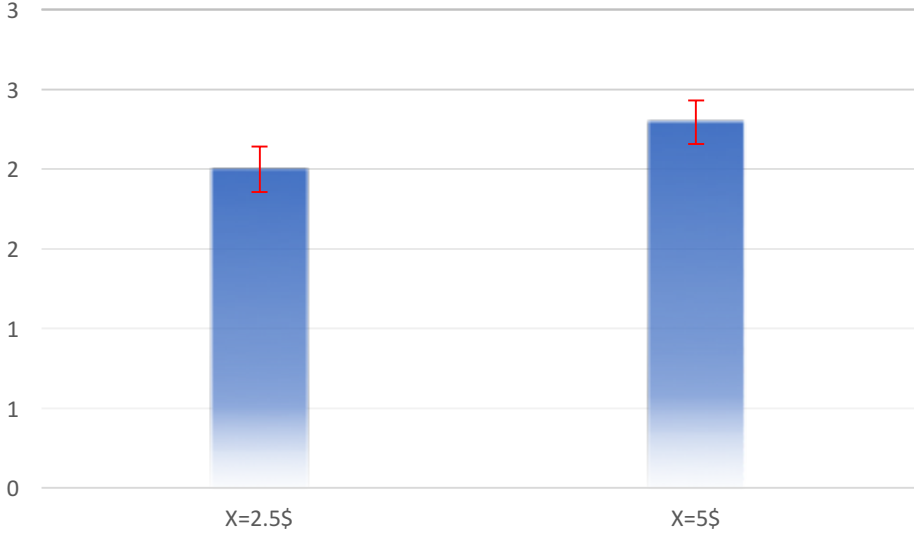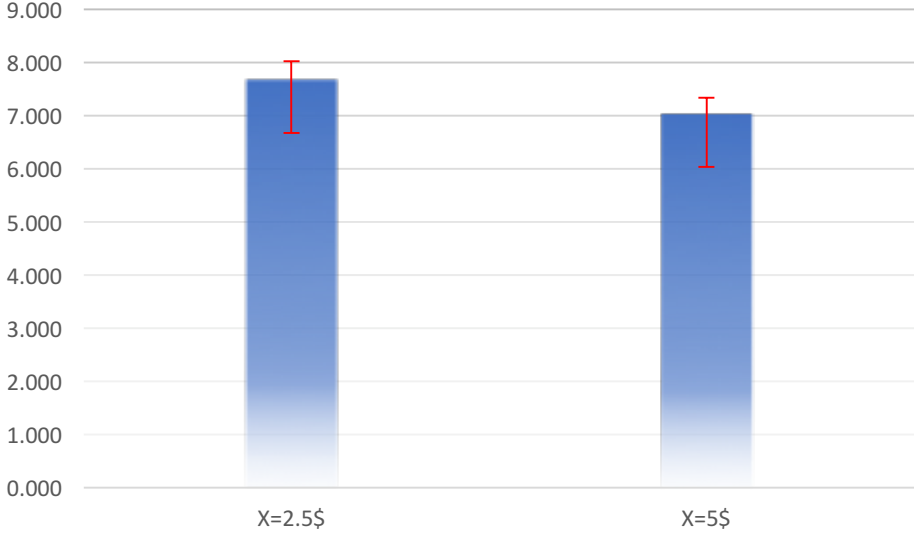### 5.2.3 T-test analysis

We crosschecked analytically the result found with the error bars method and we came up with same results. Looking at Table 7, we calculated the difference in the means of two samples with equal variances and we obtained that the t-statistic is -0.4616 with 82 degrees of freedom. The corresponding two-tailed p-value is 0.6456, which is greater than 0.05 and therefore the difference of means in gender between treatment 0 and 1 is statistically comparable. In Table 8 we obtained a t-statistic equal to 1.9965 and a two-tailed p-valued equal to 0.0492 which is lower than 0.05. In all the other cases (Table from 9 to 11) the related two-tailed p-values is higher than 0.05, as we expected from the previous graphical results. Once again the only dimension on which the two groups are not comparable is the variable 'age', but it can be considered no relevant for our analysis, therefore the hypothesis H_3 is confirmed.

Table 7 T-test Gender

Group		Obs.	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
	0	40	0.25	0.0693375	0.438529	0.1097516	0.3902484
	1	44	0.2954545	0.069577	0.4615215	0.1551392	0.4357699
combined		84	0.2738095	0.0489452	0.4485906	0.1764594	0.3711596
diff			-0.0454545	0.0984696		-0.2413419	0.1504328

diff = mean(0) - mean(1)		t = -0.4616
Ho: diff = 0		degrees of freedom = 82

Ha: diff < 0	Ha: diff != 0	Ha: diff > 0
Pr(T < t) = 0.3288	Pr(|T| > |t|) = 0.6456	Pr(T > t) = 0.6772

Source: Authors' analysis, 2016

Table 8 T-test Age

Group		Obs.	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
	0	40	3.325	0.2358495	1.491643	2.847949	3.802051
	1	44	2.704545	0.2045455	1.356801	2.29204	3.117051
combined		84	3	0.1579778	1.44789	2.685789	3.314211
diff			0.6204545	0.3107737		0.0022267	1.238682

diff = mean(0) - mean(1)		t = 1.9965
Ho: diff = 0		degrees of freedom = 82

Ha: diff < 0	Ha: diff != 0	Ha: diff > 0
Pr(T < t) = 0.9754	Pr(|T| > |t|) = 0.0492	Pr(T > t) = 0.0246

Source: Authors' analysis, 2016

Table 9 - T-test Employment

Group		Obs.	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
	0	40	2	0.143223	0.9058216	1.710304	2.289696
	1	44	2.295455	0.1363196	0.9042418	2.02054	2.570369
combined		84	2.154762	0.0994737	0.9116918	1.956913	2.352611
diff			-0.2954545	0.1977101		-0.6887629	0.0978538

diff = mean(0) - mean(1)	t = -1.4944
Ho: diff = 0	degrees of freedom = 82

Ha: diff < 0	Ha: diff != 0	Ha: diff > 0
Pr(T < t) = 0.0695	Pr(|T| > |t|) = 0.1389	Pr(T > t) = 0.9305

Source: Authors' analysis, 2016

Table 10 - T-test Risk Propensity

Group		Obs.	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
	0	40	7.675	0.3551589	2.246222	6.956623	8.393377
	1	44	7.045455	0.2979041	1.976073	6.444674	7.646236
combined		84	7.345238	0.2312964	2.119866	6.885199	7.805277
diff			0.6295455	0.4607176		-0.2869686	1.54606

diff = mean(0) - mean(1)	t = 1.3664
Ho: diff = 0	degrees of freedom = 82

Ha: diff < 0	Ha: diff != 0	Ha: diff > 0
Pr(T < t) = 0.9122	Pr(|T| > |t|) = 0.1755	Pr(T > t) = 0.0878

Source: Authors' analysis, 2016

Table 11 - T-test Average Risk

Group		Obs.	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
	0	40	2.5	0.0943092	0.5964639	2.309242	2.690758
	1	44	2.528409	0.0920376	0.6105085	2.342798	2.714021
combined		84	2.514881	0.065508	0.6003904	2.384588	2.645174
diff			-0.0284091	0.1319248		-0.2908495	0.2340313

diff = mean(0) - mean(1)	t = -0.2153
Ho: diff = 0	degrees of freedom = 82

Ha: diff < 0	Ha: diff != 0	Ha: diff > 0
Pr(T < t) = 0.4150	Pr(|T| > |t|) = 0.8300	Pr(T > t) = 0.5850

Source: Authors' analysis, 2016

5.2.3 Game results

Table 12 - Georgantzis results

| | X=2.5$ | | X=5$ | |
	L	R	L	R
PERCENTAGE OF "A" STRATEGIES IN EACH SCENARIO				
Foreigner informed	55.00%	50.00%	52.17%	39.13%
Foreigner become informed	68.75%	50.00%	50.00%	62.50%
Local playing against foreigner informed	70.00%	30.00%	65.22%	65.22%
Local playing against foreigner uninformed	35.00%	35.00%	69.57%	43.48%
Foreigner uninformed[2]	0,00%		57.14%	
PERCENTAGE OF PLAYERS BECAME INFORMED				
Foreigner uniformed who bought info	80.00%		69.57%	

Source: Authors' analysis, 2016

Table 12 reports the percentage of subjects playing strategy A. The first row corresponds to the play of an initially informed subject (equivalent to a foreign firm adopting FDI in our game) playing against an informed rival (a local firm). The third row is the same scenario reversed: play of an initially informed subject

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[2] Remember that if you are a foreigner player who decides to not buy information, thus remaining uninformed, you can cannot differentiate the strategy between game L and R.

(a local firm) playing against an informed rival (foreign firm adopting FDI). The second row corresponds to subjects who purchased the information (a foreign firm adopting FDI). The fourth row corresponds to the play of an initially informed subject (a local firm) playing against an uninformed rival (foreign exporter). The fifth row corresponds to the play of an initially uninformed, and not converted to informed, subject (a foreign export) playing against an informed rival (local firm). Finally, the last row provides the percentage of how many uniformed subjects bought information, namely, those adopting a FDI strategy. Finally, columns distinguish the two treatment, low or high 'X', and the strategy played in game 'L' and 'R'.

The main results coming out from the experiment can be summarized as follows:

Result 1: *The prediction of dominant play (strategy A) by initially informed players (local firms) and ex post informed ones (foreign firms adopting FDI) in game L (bad state of demand) receives strong support both treatment (70% and 65.22%).*

Result 2: *The prediction of dominant play (strategy B) by initially informed players (local firms) in game R (good state of demand) playing against uniformed rivals (exporters) is confirmed in the low treatment game (only 35% play against this prediction) and slightly confirmed in the high treatment game (43.48% play against this prediction).*
This results provide full support to hypotheses H_1 and H_2.

Results 3: *The number of subjects who have used FDI in the high 'x' treatment (69.57%) is lower than those who have done so in the low 'x' treatment (80%).*

It can be seen that the increasing cost of purchasing information reduces the number of purchases itself. This result qualitatively confirms H_3. More specifically, the two indicators of risk, risk propensity and average risk, show an average value higher than the mean of the variable (risk propensity: 7.675 and 7.045, mean=5; average risk: 2.5 and 2.53, mean=2.5). Moreover, given the fact that firms are sufficiently risk-inclined, we can argue that the expected utility of FDI increases and the one of exports decreases. Therefore, we are not surprised about the high number of subjects who purchased information. Finally, this result is not in accordance H_4.

Results 4: *Surprisingly, initially informed players (local firms) significantly vary across treatments the frequency of their cooperative play against informed entrants (foreign firms adopting FDI) in game R (good state of demand) (it doubled from 30% treatment 0, to 65.22% treatment 1), depending on the value of 'x' (higher fixed setup cost).*

Results 5: *Surprisingly, initially uninformed players (foreign firms), who have decided to become informed, significantly vary across treatments the frequency of their cooperative play against informed players (local firms) in game R (good state of demand) (from 50% treatment 0, to 65.5% treatment 1), depending on the value of 'x' (higher fixed setup cost).*

These findings can be motivated considering that the higher the cost of FDI, the higher the likelihood of collaborating. Indeed, a high fixed setup costs the firm should sustain to acquire information, implies a high bargaining power of the foreign firm. Thus, this means both parties will have equal bargaining power. In other words, bargaining power depends to a large degree on the credibility of the parties. More financial resources are needed and the higher is the risk associated to the investment of foreign firm, the greater will be the incentives for local firm to collaborate. Hence, collaboration between the two parties' can be sustained if

they interact over a long span of time. Therefore, a key condition for such mechanisms to work is that the foreign players should care sufficiently about investing in the host country and about future payoffs.

Results 6: *Surprisingly, the behaviour of initially uninformed players (foreign firms) who have decided to remain uniformed (exporters) significantly varies under different values of 'x'. Specifically, a lower 'x' (FDI-related cost) makes an exporting firm behave significantly less cooperatively than under a higher one (0% vs. 57.14%).*

Indeed, when firms have decided to enter as exporting sellers into foreign market, they behave less cooperatively when their decision to export has been taken in a setup which is more favourable to FDI.

5.3 Multi-regression analysis

Table 13 - Multi-regression analysis results

	FDI	FDI	FDI	FDI
Gender	0.254	0.253	0.314	0.453[*]
	-1.37	-1.33	-1.47	-2.04
Age	0.0625	0.0519	0.102	0.118
	-0.58	-0.47	-0.9	-1.07
Education	0.127	0.0745	0.0859	0.156
	-1.21	-0.64	-0.72	-1.29
Married	0.172	0.181	0.108	0.147
	-0.7	-0.73	-0.43	-0.57

Do you have children?	-0.174	-0.134	-0.0975	-0.146
	(-0.84)	(-0.63)	(-0.46)	(-0.71)
Household Head	-0.147	-0.162	-0.358	-0.0519
	(-0.52)	(-0.56)	(-1.10)	(-0.15)
Employed	0.198	0.304	0.435	0.407
	-0.64	-0.94	-1.18	-1.15
Unemployed	-1.225**	-1.097*	-0.946	-0.774
	(-2.17)	(-1.88)	(-1.62)	(-1.37)
Student	-0.177	-0.0911	-0.107	-0.00703
	(-0.64)	(-0.31)	(-0.37)	(-0.02)
Self-employed	-0.258	-0.211	-0.224	-0.204
	(-0.79)	(-0.63)	(-0.64)	(-0.61)
Treatment	-0.131	-0.0721	-0.116	-0.183
	(-0.33)	(-0.18)	(-0.27)	(-0.44)
Entrepreneurs Chorrera	-0.473	-0.486	-0.627	-0.63
	(-1.18)	(-1.21)	(-1.39)	(-1.41)
Students Chitré	0.204	0.124	0.0609	0.167
	-0.43	-0.26	-0.13	-0.36
Family relationship		-0.0802	-0.0764	-0.0836
		(-1.12)	(-1.04)	(-1.18)
Did you grow up in a family business?		-0.0925	-0.0573	0.149
		(-0.50)	(-0.28)	-0.67
International entrepreneurship experiences			0.480*	0.435*
			-1.93	-1.82
I believe it is important to make plans			-0.0591	-0.0336

for the future as early as possible			(-0.56)	(-0.33)
My life is determined by my own actions			0.0375	-0.00263
			-0.35	(-0.03)
I am generally cautious about accepting new ideas			0.0296	0.118
			-0.33	-1.22
Risk aversion				-0.0482*
				(-1.98)
Ambiguity				0.147
				-0.66
Constant	0.391	0.866	0.709	0.434
	-0.61	-1.14	-0.68	-0.43

t statistics in parentheses
* p < 0.10, ** p < 0.05, *** p < 0.01

Source: Authors' analysis, 2016

The final step of our research is to perform a regression analysis. It is a statistical tool for the investigation of relationships between variables. In particular, we use a multiple regression technique, that allows additional factors (the ones in table above) to enter the analysis separately so that the effect of each can be estimated. It is valuable for quantifying the impact of various simultaneous influences upon a single dependent variable.

The foreign direct investment concept has become an important role in the economic development of large number of countries in the world. Therefore, now we attempt to identify the main determinants of FDI flows at the individual level. More specifically, we want to understand which are the individual-level characteristics of the subjects that determine their willingness to go for an FDI

in the game instead that for export. Moreover, through this analysis we can provide a further contribute in understanding how training program can get better and what are the main determinants the training program should work on in order to enable an international mind-set.

Thus, while in the previous section we have discussed the macro determinants of FDI, we will here deal with micro determinants and we will argue which subjects' attitudes and personal characteristics are relevant for the adoption of the FDI. Yet the micro determinants of FDI are mainly concerned with those subject traits that have an impact on the adoption of FDI rather than export. On the contrary the macro determinants of FDI are those factors that influence the profitability and the choice to invest at an economy wide level. Both macro and micro determinants may be necessary conditions for FDI and their lack may prevent the possibility of Foreign direct investments adoption. Therefore, differences in subjects 'attitude explain why some people are more likely to adopt FDI and why some other do not.

Thus, the idea is that owing some adequate characteristics is an important factor which induces to adopt FDI. The results are displayed in Table 13 by presenting regression models including progressively larger sets of controls.

Among the different variables, there are four affecting FDI inflow significantly. These are:

- Gender;
- Unemployment;
- International entrepreneurship experiences;
- Risk aversion

Therefore, we first have to look at those variables that are statistically significant and then briefly describe the other variables which have been analysed (Table 13). The conclusions for each variable are as follow:

Result 1: *Firstly, according to the linear regression emerge that the "Gender" has a significant statistically impact on FDI. The analytical results*

show the gender variable has stronger impacts to the investors' decision than some other factors. We can show thus that an individual's gender shapes her attitudes towards FDI. More specifically, the results demonstrate that men are more likely to think they can benefit from FDI. On the contrary women tend to be relatively more sceptical about FDI.

Result 2: *The coefficient estimate of "unemployed" is negatively and marginally statistically significant suggesting that unemployed individuals tend to be more reluctant in selecting FDI strategy compared to their employed counterparts.*

Result 3: *It can be seen that the "International entrepreneurship experiences" are associated with increasing FDI flow. The prediction is also confirmed by literature which argues that, an individual who has already had previous entrepreneurship experience is more tolerant to risk and thus, has a higher propensity to pursue FDI. Generally speaking, entrepreneurial past experience enable individuals to get better their entrepreneurial abilities giving them the possibility to better evaluate information and through these to detect new entrepreneurial opportunities.*

Result 4: *According to the linear regression emerge that risk aversion, as measured by the Holt and Laury experiment has a significant statistically negative impact on FDI. This result is consistent to what demonstrated before. In fact, in HL, the average number of the switch line (line at which a subject chooses to switch from lottery A to lottery B) was 11. The identification of the switch line allows to identify an interval estimate of the subjects' coefficient r of relative risk aversion. Thus, given the structure of the battery of lotteries a switch line from L11 to L19 would reveal risk aversion (the greater the number of the switch line, the higher r, the degree of risk aversion. Therefore, given the*

fact that firms are risk-averse, we can argue that the expected utility of FDI decreases and the one of exports increases.

Among those determinants that are not statistically significant there are some that could be interesting assessing it and could provide some significant indications to the policy-makers. According to the linear regression emerge that "Individual's age" is not a robust determinant of FDI preferences. However, could be interesting assessing it. The results demonstrate that elder individuals in developing countries should exhibit more favourable preferences for FDI than younger individuals. According to the linear regression emerge that variable relative to the question of being grown in a family business is not a robust determinant of FDI preferences. However, also in this case could be interesting assessing it. It can be seen that subjects who grew in a family business are associated with increasing FDI flow. These prediction is confirmed by the fact that many families invest time and resources preparing their next generation to assume particular entrepreneurial and business mind-set. Therefore, growing in a family business enables individual to develop a more favourable attitude towards FDI. "Education" have very little or no impact to the decision of foreign investors. However, this is an important determinant to be considered. It is possible to recognize that the educational level may also shape the preference of FDI. This variable shows a positive effect on FDI flow. More specifically, individuals with high levels of education tend to exhibit more favourable attitudes towards FDI. Since education is positively correlated with the preference of FDI, we can provide some significant indications to the policy-makers. In fact, the government role in fostering education is associated with increasing FDI flow. A strong education system may inculcate some important attitudes among subjects. According to the linear regression emerge that "Treatment" is not a robust determinant of FDI preferences. Since the variable is positively correlated with FDI, these results are consistent with the Georgantzis experiments' findings. More specifically the number of subjects who have used

FDI in the high 'x' treatment is lower than those who have done so in the low 'x' treatment.

It can be seen that the increasing cost of purchasing information reduces the number of purchases itself. However, married and the family relationship seemed not be significant factors it is interesting showing how they are correlated with the preference of FDI. More specifically what emerge is that the two variables are positively correlated with the preference of FDI. These findings provide additional evidence that people who have positive relationship with the family and are married are less likely to exhibit such preference for FDI. Therefore, the fact to be very close to subjects' family explain their reluctance to adopting FDI.

This is consistent with the Georgantzis experiment results and thus is not in accordance with H_4 for any probability of the good state of demand, foreign firms are more likely to purchase information the more risk averse they are.

It can be seen that the increasing cost of purchasing information reduces the number of purchases itself. This result qualitatively confirms H3. Moreover, given the fact that firms are sufficiently risk-inclined, we can argue that the expected utility of FDI increases and the one of exports decreases. Therefore, we are not surprised about the high number of subjects who purchased information. Finally, this result is not in accordance H_4.

5.4 Moderated multi-regression analysis

Table 14 - Moderated multi-regression analysis results

FDI	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
int_entr_xp#ambiguity_t Yes#1	-0.3259681	0.5496981	-0.59	0.56	-1.476499	0.8245633
int_entr_xp#gender Yes#Male	-0.3122618	0.4645589	-0.67	0.51	-1.284595	0.6600711
int_entr_xp#self_employed Yes#1	-0.1829192	0.5384074	-0.34	0.738	-1.309819	0.9439805
int_entr_xp#c.n_linea Yes	-0.0624465	0.0757713	-0.82	0.42	-0.2210376	0.0961446
ambiguity_t#c.n_linea 1	0.0312839	0.0538379	0.58	0.568	-0.0810199	0.1435878
gender#c.n_linea Male	0.0279123	0.0510362	0.55	0.59	-0.0785473	0.1343718
self_employed#c.n_linea 1	-0.0946612	0.0631539	-1.5	0.15	-0.2268439	0.0375214

Source: Authors' analysis, 2016

The empirical findings of this study are based on the multiple regression analyses, which aims to quantify the relationship between two variables depending on a third variable. More specifically in this section we discuss and provide an interpretation of the effect of international experience and risk aversion on FDI flow through the adoption of some moderators. The examination of the moderating effect of some variable on the above mentioned relationships is reported in Table 14. However, the interaction between these variables and FDI was found to be not significant. The results reveal that the international entrepreneurship experience and risk aversion does not affect in

any way the importance of the FDI determinants identified in the previous paragraph.

De facto, the p value terms exceed 0.05 and thus do not reach significance. Accordingly, the researchers would conclude no evidence exists that international experience and risk aversion moderates or influences the impact of FDI flow. However, it should be noted that the number of observations is limited. Therefore, among those variables that are not statistically significant, there are some that could be interesting to assess and could provide some significant indications to the policy-makers in further studies. According to the regression, emerge that being ambiguity averse, male, self-employed and risk averse reduce the positive effect of having a precedent international experience on the probability to choose FDI in the game. Accordingly, ambiguity aversion and gender amplify the negative effect of risk aversion in terms of FDI while being self-employed reduces this negative effect.

Chapter 6

Conclusions

We started the investigation upon the research questions (reported in Chapter 1). Through the adoption of experimental economics tools, we studied a real context and investigated the role of the International entrepreneurship in developing countries, focusing on the main determinants of FDI. As we already said this study is a part of a big research developed by Politecnico di Milano in collaboration with UNCTAD started on March 2016. Polimi team was composed by three different pairs of students, sharing the same common goal. Moreover, each pair of Polimi team focused on different specific topics related to the objectives of the thesis, and come as a part of a more articulated and wide analysis regarding the importance of entrepreneurship for development.

Entrepreneurship is a valid and important subject of study, and development is a worthwhile subject of study for entrepreneurship and management scholars. The growing availability of more and better data from emerging and developing economies, the increasing adoption of rigorous evaluation methods in policy assessments, are positive aspects useful for the intersection of development and entrepreneurship. Moreover, the economic benefits of entrepreneurship and its role in achieving economic and social development have been widely recognized beneficial for economic growth and development. Therefore,

fostering entrepreneurship has become a key element of several development programs around the world (World Bank, 2005).

In particular, the thesis work applies an experimental methodology aims to figure out the main macro and micro determinants of FDI vs Exporting in a developing country such as Panama. Hence, the authors argue, the strong positive impact and the relevance some determinants may have in fostering FDI. Yet, it possible to classify micro and macro strategic determinants of FDI. That is, the analysis of the determinants should focus not only on variables associated with the factors that influence the choice at an economic wide level but also on variables related to the personal attitudes. Finally, the research project can provide a further contribute in understanding how training program can get better and what are the main determinants the training program should work on in order to enable an international mind-set.

The first part of research took place in Milan, starting in March. Moreover, the research on field took place in Panama City in October. The researchers started the activities proper of the thesis work, with different tools, including qualitative, quantitative and experimental analyses.

The first tool applied has been the survey. The survey method has been chosen for a certain number of reasons (Giacomazzi, 2002):

- Possibility to reach a remarkable number of entrepreneurs in a short range of time;
- Surveys results provide a snapshot of the attitudes and behaviours – including thoughts, opinions, and comments – about our target survey population. This valuable feedback is the baseline to measure and establish a benchmark from which to compare results over time.

For the purpose of our thesis, the authors also provide an entrepreneurship-specific framework that matches types of research questions through feasible empirical methods. Experimental methods offer the opportunity to significantly

improve the evidence for causal relationships in several ways. In describing the usefulness of experimentation in economics research, Croson, Anand, and Agarwal (2007) noted that experiments can "be designed to capture what researchers believe are the relevant dimensions of the field and to replicate the regularity in controlled conditions. Moreover, experimentation, offers strong tests of internal validity. Internal validity concerns causality (Cook & Campbell, 1976) – or the assessment of a cause and effect relationship between two variables. Finally, experimental thinking can help in evaluating evidence for cause and effect, and to reinforce design choices and analytical approaches that allow stronger causal tests if true experiments are not possible.

From the results obtained through the application of the experimental methodology, it is possible to answer to the research questions of the thesis.

First, it has been noticed that the tool survey is suitable to gain the initial information needed to continue in the methodology application: it allowed the researchers having an overall overview on subjects' attitudes.

Second the Georgantzis experiment provide significant findings.

More specifically results provide full support to the following hypothesis:

H_1: Local firms will play the dominant strategy in the market game regardless of the foreign strategies.

H_2: Informed foreign firms will play the dominant strategy in the market game.

H_3: It can be assumed that people who played treatment 1 (X=5$) are statistically equal to those who played treatment 0 (X=2.5$). Therefore, for any risk attitude an increase in X implies less observed information purchase.

However, the hypothesis 4 is not confirmed is not confirmed:

H_4:   For any probability of the good state of demand, foreign firms are more likely to purchase information the more risk averse they are.

Finally, the linear regression analysis provides an extensive explanation for FDI determinants and allows us the possibility to identify what are the main individual determinants which push business manager toward FDI rather than export and their dynamics. The researchers identify as main variables: *Gender, unemployed, International entrepreneurship experiences, risk aversion.* Thus, the results demonstrate that risk propensity individuals in developing countries should exhibit more favourable preferences for FDI than risk averse individuals. Moreover, through this analysis we can provide a further contribute in understanding how training program can get better and what are the main determinants the training program should work on in order to enable an international mind-set.

As far as it concerns the future researches, several topics should be analysed in a deeper way, starting from our study. Future studies could build upon this research to examine other aspects of the issue of how subject's attitudes impact on FDI flow:

- Future works could explore how training program and workshops may get better and what are the main determinants the training program should work on in order to enable an international mind-set. This may bring critical aspect helping to identify what types of programs work for particular beneficiaries to achieve particular outcomes, within particular contexts.

- even if it is beyond of the scope of our thesis investigate this, it would be interesting to see how government policy orientation affect individual attitudes pushing them to adopt FDI and boosting international entrepreneurship. For instance, given the importance enhanced levels of scepticism about institutions, especially those characterized by a high level of corruption, further research could contemplate to what extent the government condition may hinder international entrepreneurship even

though subject presents positive attitudes and determinants. Addressing these other issues allow the possibility to find out richer, well-specified results.

- investigating the role of institutions (political risk and stability, openness,), and possibly non-institutional factors (e.g., resource endowments), and their interaction with subject's attitudes and determinants, may offer a useful research agenda to better understand to what extent the countries development shapes the personal attitudes and aid in improving it.

Furthermore, some limitations came to light from the study. The study sample includes only Panamanian entrepreneurs and students. On one hand, restricting our sample to a single home country allowed us to control home-country institutional effects, but on the other hand it could limit the applicability to further developing countries. Therefore, starting from this point future researches may verify:

- whether our results are confirmed or not in similar developing countries extended the research base;
- whether there is pattern among others Latin American countries or not, and, if yes, whether it could be extended to other developing countries all over the world or not.

However, several directions for future research arise from these findings and limitations. For instance, a case study approach, using field-level qualitative data could provide a comprehensive contribution to investigate in-depth how local entrepreneurs in their business use the experience acquired during training programs, to create a new business. Furthermore, case studies might give insights into how and why entrepreneurs decide to move or not their business overseas.

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Appendix

A. Survey – English Version

ID	
Nombre y Apellido	
Correo Electrònico	
Nùmero de teléfono	

	¿Cuál es tu género?	
1	Hombre	◎
	Mujer	◎

	¿Cuál es tu edad actual?	
	Por favor selecciona la alternativa, poniendo una "X" en el círculo correspondiente a la derecha. Elige sólo un grupo de edad.	
	Abajo de 18	◎
	18-24	◎
	25-34	◎
2	35-44	◎
	45-54	◎
	55-64	◎
	65-99	◎
	No se	◎

	¿Cuál es el nivel más alto de educación que ha completado?	
	Por favor seleccione la alternativa, poniendo una "X" en el círculo correspondiente a la derecha. Elige solo una respuesta.	
	Nunca fui a la escuela	◎
	Escuela primaria	◎
3	Escuela secundaria	◎
	Diploma avanzado grado/licenciatura	◎
	Maestría	◎
	MBA (Master Business Administration)	◎
	Otro:	

	¿Que idioma hablas?	
	Puedes marcar más de una.	
	Francés	◎
	Inlgés	◎
4	Portugués	◎
	Español	◎
	Chino	◎
	Ruso	◎
	Otro:	

	¿Cuál es tu estado civil?	
	Por favor, marca el estado más apropiado.	
	Casado	◎
5	Soltero	◎
	Separado	◎
	Divorciado	◎
	Viludo	◎

	¿Has vivido alguna vez en un país extranjero por varios meses?	
	Si	◎
	No	◎
6	En caso afirmativo, ¿todavía tienes conexiones relacionadas de negocio en estos países?	
	Si	◎
	No	◎

	¿Cuál es el nombre de la ciudad en la que vives?	
7		

	¿En qué país naciste?	
8		

	¿Si es diferente de Panamá, en qué año fue la primera vez que te mudaste a Panamá?	
9		

	¿Cual el número de miembros en su domicilio?	
	1	◎
	2	◎
	3	◎
10	4	◎
	5	◎
	6	◎
	7	◎

11	¿Cuál es el número de niños que viven en tu domicilio (hijos del jefe o su compañero/a)?	
	1	◎
	2	◎
	3	◎
	4	◎
	5	◎
	6	◎
	7	◎

12	¿Cuál es tu posición en el hogar?	
	Jefe de hogar	◎
	Pareja casada	◎
	Padre (en la ley)	◎
	Compañero	◎
	Niño que vive en el hogar	◎
	Miembro de la familia	◎
	Miembro de la familia o pensionista	◎
	Desconocido (faltante)	◎

13	¿En general, cómo describieras la relación con tu familia?	
	Muy pobre	◎
	Pobre	◎
	Muy bien	◎
	Ni buena, no es pobre	◎
	Buena	◎

14	¿Cuál de las siguientes opciones describe tu situación laboral actual?	Si	No	No se
	Empleado por cuenta demás en el trabajo a tiempo parcial	◎	◎	◎
	Empleado por cuenta demás en el trabajo a tiempo completo	◎	◎	◎
	Trabajadores autónomos	◎	◎	◎
	Buscando trabajo	◎	◎	◎
	Estudiante	◎	◎	◎
	Desempleados	◎	◎	◎
	Ama de casa a tiempo completo	◎	◎	◎

15	¿Puedes indicar, para cada una de las organizaciones enumeradas, lo que se aplica a ti en este momento o lo que se ha aplicado a ti en los últimos 12 meses? *Más de una respuesta es posible. Por favor selecciona para cada organización "No hay conexión"," El dinero donado "," Participación en la actividad"," miembro "," trabajo voluntario realizado "poniendo una " X" en el círculo correspondiente.*	No hay conexìon	El dinero donado	Partecipaciòn en la actividad	Miembro	Trabajo voluntario realizado
	un club deportivo o club para actividades al aire libre	◎	◎	◎	◎	◎
	una asociación cultural o club manía	◎	◎	◎	◎	◎
	un sindacato	◎	◎	◎	◎	◎
	una empresa, profesional o organización agraria	◎	◎	◎	◎	◎
	organización de consumidores o club de automóviles	◎	◎	◎	◎	◎
	una organización de ayuda humanitaria, los derechos humanos, las minorías o inmigrantes	◎	◎	◎	◎	◎
	una organización para la protección del medio ambiente, la paz o una organización de derechos	◎	◎	◎	◎	◎
	una organización religiosa o iglesia	◎	◎	◎	◎	◎
	un partido politico	◎	◎	◎	◎	◎
	una ciencia, la educación, la asociación de los profesores o los padres	◎	◎	◎	◎	◎
	una sociedad social; una asociación de jóvenes, tercera edad, las mujeres; o clubes de amigos	◎	◎	◎	◎	◎
	otras organizaciones en la que te puedes unir libremente	◎	◎	◎	◎	◎

16	Por favor, contesta a las siguientes preguntas.	Si	No	No se
	¿Conoces a alguien personalmente que inició un negocio en los últimos 2 años?	◎	◎	◎
	¿En los próximos seis meses, habrá buenas oportunidades para iniciar un negocio en la zona donde tu vives?	◎	◎	◎
	¿Tienes el conocimiento, la habilidad y la experiencia necesaria para iniciar un nuevo negocio?	◎	◎	◎
	¿El miedo o el fracaso le pudieran impedir de iniciar un negocio?	◎	◎	◎

17	¿Eres tú solo o con otros, pendiente de iniciar un nuevo negocio, incluyendo cualquier tipo de trabajo por cuenta propia, dentro de los próximos tres años?	
	Si	◎
	No	◎
	No se	◎

18	¿Cuánto satisfecho estás por tu contactos sociales?									
	No totalmente satisfecho								Totalmente satisfecho	
	1	2	3	4	5	6	7	8	9	10
	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

Appendix

¿En qué medida estás de acuerdo o en desacuerdo con las afirmaciones siguientes?					
	Muy de acuerdo	De acuerdo	Ni de acuerdo ni en desacuerdo	En desacueardo	Muy en desacuerdo
El futuro es impredecible, prefiero vivir día a día	◎	◎	◎	◎	◎
Creo que la gente debe planificar su día cada mañana	◎	◎	◎	◎	◎
Me gusta pensar en el futuro	◎	◎	◎	◎	◎
No me gusta pensar en el futuro	◎	◎	◎	◎	◎
Creo que es importante no perder el tiempo	◎	◎	◎	◎	◎
Creo que es importante invertir parte de mis ingresos ahora en seguros	◎	◎	◎	◎	◎
He descubierto bastante bien el resto de mi vida	◎	◎	◎	◎	◎
No hago muchos planes para el resto de mi vida	◎	◎	◎	◎	◎
Creo que es importante ahorrar ahora para tiempos más difíciles por delante	◎	◎	◎	◎	◎
Creo que es importante hacer planes para el futuro tan pronto como sea posible	◎	◎	◎	◎	◎
Me gusta planear el tiempo que paso en la socialización con suficiente antelación	◎	◎	◎	◎	◎
Creo que es importante ahorrar dinero ahora para mi vejez	◎	◎	◎	◎	◎
No creo que es importante ahorrar dinero ahora para mi vejez	◎	◎	◎	◎	◎

(19)

¿Creciste en un negocio familiar?	
Si	◎
No	◎

(20)

¿Has tenido alguna experiencia de las tareas de gestión de negocios para entrar en el negocio por ti mismo?	
Si	◎
No	◎

(21)

¿Has tenido anteriores experiencias internacionales de emprendimiento?	
Si	◎
No	◎

(22)

Riesgo Empresarial Internacional Propensión Tomando
Marca con un círculo para cada uno de los estados en la medida en la cual están de acuerdo o en desacuerdos con tus creencias.

	Muy de acuerdo	De acuerdo	Ni de acuerdo ni en desacuerdo	En desacuerdo	Muy en desacuerdo
Si invierto dinero en acciones, es probable que sólo sería en las existencias de seguridad de las compañías grandes y bien conocidas	◎	◎	◎	◎	◎
Tomar riesgos me molesta, incluso si las ganancias potenciales son altos	◎	◎	◎	◎	◎
Si las posibles recompensas fueran muy altas, no dudaría en volver a poner dinero en una nuevos negocios que pudieran fallar	◎	◎	◎	◎	◎
He considerado la seguridad como un elemento importante en todos los aspectos de mi vida	◎	◎	◎	◎	◎

(23)

Marca con un círculo para cada uno de los estados en la medida en la cual están de acuerdo o en desacuerdos con tus creencias.

	Muy de acuerdo	De acuerdo	Ni de acuerdo ni en desacuerdo	En desacuerdo	Muy en desacuerdo
Aunque la gente me dice que no se puede hacer, yo persistiré	◎	◎	◎	◎	◎
Miro sobre mi trabajo simplemente como una forma de lograr mis metas	◎	◎	◎	◎	◎
No voy a estar satisfecho a menos que haya alcanzado el nivel deseado de resultados	◎	◎	◎	◎	◎
Trato de hacer mi trabajo lo mejor posible, incluso cuando las tareas asignadas a mí son difíciles	◎	◎	◎	◎	◎
Me paso una cantidad considerable de tiempo hacer una organización a la que creo pueda funcionar mejor	◎	◎	◎	◎	◎

(24)

Marca con un círculo para cada uno de los estados en la medida en la cual están de acuerdo o en desacuerdos con tus creencias.

	Muy de acuerdo	De acuerdo	Ni de acuerdo ni en desacuerdo	En desacuerdo	Muy en desacuerdo
Suelo ser capaz de proteger a mi interés personal	◎	◎	◎	◎	◎
Mi vida está determinada por mis propias acciones	◎	◎	◎	◎	◎
Cuando hago planes, estoy casi seguro de hacer que funcionen	◎	◎	◎	◎	◎
Cuando consigo lo que quiero, por lo general es porque he trabajado duro para eso	◎	◎	◎	◎	◎
En gran medida mi vida está controlada por acontecimientos accidentales	◎	◎	◎	◎	◎
No siempre es conveniente para mí planificar mucho adelante porque muchas cosas resultan ser cuestión de buena o mala suerte	◎	◎	◎	◎	◎
He encontrado a menudo que lo que va a ocurrir, ocurrirá	◎	◎	◎	◎	◎
Con el fin de tener mis planes de trabajo que tengo que asegurarse de que encajan con los deseos de las personas que tienen poder sobre mí	◎	◎	◎	◎	◎

(25)

Marca con un círculo para cada uno de los estados en la medida en la cual están de acuerdo o en desacuerdos con tus creencias.

	Muy de acuerdo	De acuerdo	Ni de acuerdo ni en desacuerdo	En desacuerdo	Muy en desacuerdo
A menudo trato de inventar nuevos usos para los objetos cotidianos	◎	◎	◎	◎	◎
Creo que para ser exitoso en los negocios debes pasar mucho tiempo cada día en el desarrollo de nuevas ideas	◎	◎	◎	◎	◎
Soy consciente de que por lo general soy una de las últimas personas en un grupo para aceptar algo nuevo	◎	◎	◎	◎	◎
En general estoy cuidado al aceptar nuevas ideas	◎	◎	◎	◎	◎
Soy sospechoso de nuevas invenciones y nuevas formas de pensar	◎	◎	◎	◎	◎

(26)

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	Marca con un círculo para cada uno de los estados en la medida en la cual estan de acuerdo o en desacuerdos con tus creencias.					
		Muy de acuerdo	De acuerdo	Ni de acuerdo ni en desacuerdo	En desacuerdo	Muy en desacuerdo
	Admiro a las personas que inician su propio negocio	◎	◎	◎	◎	◎
	Me gustaría animar a un amigo o familiar para iniciar un negocio	◎	◎	◎	◎	◎
27	Soy una persona imaginativa y creativa	◎	◎	◎	◎	◎
	Por lo general confió en mi propio juicio, aunque los que me rodean no están de acuerdo conmi	◎	◎	◎	◎	◎
	Excepto en los casos de fraude y mala práctica, las personas que inician y fracasan en los negocios se merecen una segunda oportunidad	◎	◎	◎	◎	◎
	Yo no tengo miedo de estar en deuda	◎	◎	◎	◎	◎
	Me gusta el desafío de situaciones que pueden tener en cuenta los riesgos	◎	◎	◎	◎	◎
	Yo prefiero trabajar en una empresa pequeña que una gran empresa	◎	◎	◎	◎	◎

	¿Dirías que puedes confiar en la mayoría de la gente o que se debe ser muy cuidadoso cuando se trata con la gente?	
28	Si	◎
	No	◎

	¿Cómo ves a ti mismo: ¿por lo general eres una persona que toma riesgos o trata de evitar los riesgos?										
29	*Por favor, haz un autoevaluación de tu elección (que oscila entre 0-10).*										
	0	1	2	3	4	5	6	7	8	9	10
	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

	¿Tienes planeado de ampliar tu actividad empresarial en países extranjeros?	
	Sí, dentro de 2 años después de su fundación	◎
30	Sí, dentro de 5 años después de su fundación	◎
	Sí, en el largo plazo (más de 5 años después de su fundación)	◎
	No se	◎

	En caso afirmativo:		
	¿Cuáles son las razones que empujan a tu plan de expansión internacional? *(Puedes elegir mas que una respuesta)*		
	A	Para acceder a nuevos mercados	◎
		Para disminuir los costos de producción	◎
		Para acceder a nuevos activos, el conocimiento y la tecnología	◎
		Para acceder a los recursos naturales	◎
		Otros:	
	¿Donde estás pensando de ampliar tu actividad?		
31	B	Países más cercanos (por ejemplo, América Central o México)	◎
		Los países de media distancia (por ejemplo, EE.UU., Canadá o América del Sur)	◎
		Los países de larga distancia (es decir, fuera de América, por ejemplo, Europa o Asia)	◎
	¿Cómo tienes planeado de expandir tu actividad a nivel internacional?		
	C	Exportación (por ejemplo, a través de página web, plataformas de comercio electrónico, agentes de ventas, etc.)	◎
		Concesión de licencias (es decir, que proporciona un cliente extranjero con derecho a utilizar la tecnología)	◎
		Franquicias (es decir, que proporciona un cliente extranjero con derecho a utilizar una marca y un modelo de negocio basado en reglas especificas)	◎
		La inversión extranjera directa (por ejemplo, la apertura de una tienda al por menor, la apertura de una planta de producción, la adquisición de una empresa extranjera)	◎

	En tu opinión, ¿cuáles son los principales riesgos asociados a una posible internacionalización de tu actividad?	
	La inestabilidad política o económica en el país extranjero	◎
	Fluctuación de los tipos de cambio	◎
	Pérdida de control de la gestión y / o eficiencia de la producción	◎
32	Dificultades en la gestión de la logística y / o la cadena de suministro	◎
	Las dificultades legales y contractuales	◎
	Reducción de la calidad del producto	◎
	Las preocupaciones sobre la seguridad de datos y el derecho de propiedad intelectual	◎
	Otros:	

	¿Tienes planeado de crear una empresa dentro de 3 meses?	
33	Si	◎
	No	◎

	En caso afirmativo, ¿cuantas persona piensas tienes que coordinar en tu nueva empresa? *(Pór favor elige)*
34	

Imagina que hay una bolsa sobre la mesa (bolsa A) llena de exactamente 50 bolas blancas y 50 bolas rojas, y una segunda bolsa (bolsa B) llenas de 100 bolas con algunos que son de color blanco y algunos que son de color rojo, pero tu no conoces su proporción relativa. Supongamos entonces que se te ofrece un boleto para un juego que se jugará de la siguiente manera: en primer lugar, tu tienes que adivinar un color (rojo o blanco). A continuación, sin mirar, tienes que dibujar una pelota fuera de una de las bolsas. Si dibujas la bolitas con el color que tu predijiste, entonces usted va a ganar $ 100; de lo contrario no ganas nada.

Supongas que se te pide que elijas en qué escenario colocas a ti mismo (en frente de la bolsa de A o B). ¿Cuál de los dos seleccionaría?		bolsa A
		bolsa B
Supongamos ahora que te encuentras en el segundo caso. ¿Estás dispuesto a pagar nada con el fin de cambiar al primer escenario? (Un conocido)		si
		no
En caso afirmativo, ¿cuál es la suma más alta que estás dispuesto a jugar? (Acuerdate que el premio en caso de elección correcta es igual a 100 $)		$

B. Georgantzis Instructions – Spanish Version

Recuerde que tus decisiones determinan tu ganancia al final del experimento. Si todavía tienes preguntas después de leer las instrucciones, por favor, levanta la mano.

El juego que estás jugando es el siguiente:

- Hay dos jugadores, uno **Extranjero** y uno **Local**. El jugador **Extranjero** está representado, en los cuadros a continuación, en **AZUL**. El jugador **Local** está representado, en los cuadros a continuación, en **ROJO**.
- Los dos jugadores interactúan simultáneamente en uno de los mercados representados, respectivamente, en el panel izquierdo (L) y derecho (R).
- El jugador **Local** sabe en cuál de los dos cuadros se queda.
- El jugador **Extranjero** puede saber en cuál de los dos cuadros se queda (en este caso es un jugador informado), o no saber en cual de los cuadro se queda (en este caso es un jugador no-informado).
- Cada uno de los dos jugadores elige una estrategia, A o B.
- el jugador **Local** puede elegir una estrategia para cada cuadro. Esto significa que puede elegir una estrategia diferente para cada cuadro, o la misma estrategia para ambos.
- El jugador **Extranjero** puede:
  - Si es un jugador no-informado:
    - Elegir solo una estrategia igual para ambos los cuadros
    - Decidir de saber en cuál de los dos mercados opera mediante el pago de una suma X = $ 2.5. Esto significa que, puede elegir una estrategia diferente una para cada cuadro, L o R, o la misma estrategia para ambos los cuadros.
  - Si es un jugador informado:
    - Puede elegir una estrategia diferente por cada cuadro o elegir la misma estrategia por ambos los cuadros
- Al final del juego, los jugadores **Extranjero** y **Local** serán emparejados al azar.
- Las ganancias de cada jugador serán determinadas en la siguiente manera:

- La ganancia de cada jugador depende de su elección y la elección del jugador con el que se vinculó.
  - El jugador **Local** obtendrá una ganancia de uno de los valores que se muestran en **ROJO** en la tabla.
  - El jugador **Extranjero** obtendrá una ganancia de uno de los valores indicados en **AZUL** en la tabla.
- Más específicamente cada jugador recibirá la ganancia que se indica en la intersección de la estrategia elegida por él mismo y la estrategia elegida por el otro jugador.

Los siguientes ejemplos ayudarán a comprender mejor el juego. Ten en cuenta a la hora de elegir tu estrategia.

Tabla de ganancias:

Izquierdo (L)				Derecho (R)		
Extranjero/Local	**A**	**B**		**Extranjero/Local**	**A**	**B**
A	(**11**, **11**)	(**9**, **10**)		**A**	(**18**, **18**)	(**15**, **19**)
B	(**10**, **9**)	(**8**, **8**)		**B**	(**19**, **15**)	(**16**, **16**)

SI ERES UN JUGADOR **EXTRANJERO**

Puedes ser un jugador no-informado, entonces:

No conoces el cuadro donde te quedas, ósea si te quedas en lo de derecha o lo de izquierda.
Puedes elegir:

- de pagar una suma X = 2.5$ y conocer el panel donde te quedas
- de no pagar una suma X = 2.5$ y no conocer el panel donde te quedas
- si pagas la suma X= 2.5$ puedes elegir la misma estrategia por el cuadro L y R o una estrategia diferente por cada cuadro

Si estas en el cuadro R y el jugador **Local** ha escogido la estrategia A:

1) si decides de no pagar la suma y eliges la estrategia A ganas 18$

Derecho (R)

Extranjero/Local	A	B
A	(18, 18)	(15, 19)
B	(19, 15)	(16, 16)

2) si decides de no pagar la suma y eliges la estrategia B ganas 19$

Derecho (R)

Extranjero/Local	A	B
A	(18, 18)	(15, 19)
B	(19, 15)	(16, 16)

3) si decides de pagar la suma y eliges la estrategia A ganas 18 $ - 2.5$ = 15.5$

Derecho (R)

Extranjero/Local	A	B
A	(18, 18)	(15, 19)
B	(19, 15)	(16, 16)

4) si decides de pagar la suma y eliges la estrategia B ganas 19 $ - 2.5$ = 16.5$

Derecho (R)

Extranjero/Local	A	B
A	(18, 18)	(15, 19)
B	(19, 15)	(16, 16)

Si estas en el cuadro R y el jugador **Local** ha escogido la estrategia B:

1) si decides de no pagar la suma y eliges la estrategia A ganas 15$

<div align="center">Derecho (R)</div>

Extranjero/Local	A	B
A	(18, 18)	(15, 19)
B	(19, 15)	(16, 16)

2) si decides de no pagar la suma y eliges la estrategia B ganas 16$

<div align="center">Derecho (R)</div>

Extranjero/Local	A	B
A	(18, 18)	(15, 19)
B	(19, 15)	(16, 16)

3) si decides de pagar la suma y eliges la estrategia A ganas 15$ - 2. 5$ = 12.5$

<div align="center">Derecho (R)</div>

Extranjero/Local	A	B
A	(18, 18)	(15, 19)
B	(19, 15)	(16, 16)

4) si decides de pagar la suma y eliges la estrategia B ganas 16$ - 2.5$ = 13.5$

<div align="center">Derecho (R)</div>

Extranjero/Local	A	B
A	(18, 18)	(15, 19)
B	(19, 15)	(16, 16)

Si tú estás en el <u>cuadro (L)</u> se aplican las mismas reglas: tus ganancias serán dadas por tu elección y por la elección de otro jugador. Para entender tus ganancias de la tabla, busca la intersección entre las dos estrategias, la tuya y la de otro jugador.

Puedes ser un jugador informado, entonces:

Sabes en cual de los dos cuadros te quedas, por lo tanto puedes elegir:
- La estrategia A para ambos los cuadros
- La estrategia B para ambos los cuadros
- La estrategia A para el cuadro L y la estrategia B para el cuadro R
- La estrategia A para el cuadro R y la estrategia B para el cuadro L

<u>SI ERES UN JUGADOR **LOCAL**</u>

<u>Pudieras jugar contra un jugador informado o contra un jugador no informado. Tienes que elegir una estrategia para ambos los casos.</u>

Si estas en el cuadro R y el jugador **Extranjero** ha escogido la estrategia A:

5) Si eliges la estrategia A, ganas 18$

<div align="center">

Derecho (R)

Extranjero/**Local**	**A**	**B**
A	(**18**, **18**)	(**15**, **19**)
B	(**19**, **15**)	(**16**, **16**)

</div>

6) Si eliges la estrategia B, ganas 19$

Derecho (R)

Extranjero/Local	A	B
A	(18, 18)	(15, 19)
B	(19, 15)	(16, 16)

Si estas en el cuadro R y el jugador **Extranjero** ha escogido la estrategia B:

7) Si eliges la estrategia A, ganas 15$

Derecho (R)

Extranjero/Local	A	B
A	(18, 18)	(15, 19)
B	(19, 15)	(16, 16)

8) Si eliges la estrategia B, ganas 16$

Derecho (R)

Extranjero/Local	A	B
A	(18, 18)	(15, 19)
B	(19, 15)	(16, 16)

Si tú estás en el cuadro L se aplican las mismas reglas: tus ganancias serán dadas por tu elección y por la elección de otro jugador. Para entender tus ganancias de la tabla, busca la intersección entre las dos estrategias, la tuya y la de otro jugador.

Procedimientos

Ahora se te dará un sobre cerrado. Abrilla. En el interior hay una hoja en la que se indica si eres un jugador **Extranjero** o un jugador **Local**.

- Si eres un jugador **Local:**

  - tienes que elegir tu estrategia en el caso estuvieras jugando con un jugador extranjero Informado
  - tienes que elegir tu estrategia en el caso estuvieras jugando con un jugador extranjero No-Informado

- Si eres un jugador **Extranjero:**
  - Tienes que elegir tu estrategia en el caso fueras un jugador extranjero informado
  - Tienes que elegir estás dispuesto a pagar la suma para ser un jugador informado
  - Tienes que elegir una estrategia si has optado por no convertirte en un jugador Informado
  - Tienes que elegir dos estrategias o si has decido de convertirte en un jugador Informado

Al final del experimento, si se elige esta tarea a ser pagado, se le emparejó al azar con otro jugador. A continuación, se procederá a la extracción de una bola de una urna que contiene una bola amarilla y la bola blanca. Si la bola extraída es de color amarillo, el jugador extranjero es un jugador informado. Si la bola extraída es blanca, el jugador extranjero es un jugador no informado. A continuación, se procederá a la extracción de una bola de una urna que contiene 2 bolas. Si la bola extraída enseña "L" estamos en el cuadro "L" ,de lo contrario el cuadro estamos en "R".

Teniendo en cuenta las situaciones extraído, te serás pagada la cantidad en dólares que aparece en la tabla en la celda dada de la intersección entre la estrategia que has elegido y la estrategia que eligió el otro jugador.

Gracias por participar!

C. General instructions – Spanish version

Instrucciones generales:

Bienvenidos y gracias por vuestra participación en este experimento. Ahora participaran a un juego en el cual ganaran dinero que al final les será pagado en efectivo (en dólares). Las elecciones y las ganancias de cada participante quedaran anónimas durante toda la sesión. Esto significa que durante la sesión ningún participante recibirá información sobre las elecciones y las ganancias de los otros participantes. Durante la sesión no se puede hablar o comunicar de cualquier manera entre los participantes. Si tienes alguna pregunta levanta la mano y uno de los asistentes te asistirá. Las reglas que siguen son iguales para todos los participantes.

En esta sesión experimental participaras en dos pruebas. Solo una de las dos será utilizada para determinar las ganancias finales. La prueba utilizada para determinar tus ganancias finales será elegida de manera casual y tendrá la misma probabilidad de ser elegida a las demás. Al final del experimento se extraerá un numero desde una urna que contiene dos números. Este número será el juego que será pagado. Las instrucciones para la segunda prueba te serán entregadas al final de la primera.

D. Human Development Index and its components

Human Development Index and its components of Latin America and the Caribbean

HDI rank	Country	Human Development Index (HDI) Value 2014	Life expectancy at birth (years) 2014	Expected years of schooling (years) 2014	Mean years of schooling (years) 2014	Gross national income (GNI) per capita (2011 PPP $) 2014	GNI per capita rank minus HDI rank 2014
40	Argentina	0,836	76,3	17,9	9,8	22.050	11
42	Chile	0,832	81,7	15,2	9,8	21.290	11
HIGH HUMAN DEVELOPMENT							
52	Uruguay	0,793	77,2	15,5	8,5	19.283	7
60	Panama	0,780	77,6	13,3	9,3	18.192	1
69	Costa Rica	0,766	79,4	13,9	8,4	13.413	10
71	Venezuela (Bolivarian Republic of)	0,762	74,2	14,2	8,9	16.159	-2
74	Mexico	0,756	76,8	13,1	8,5	16.056	-4
75	Brazil	0,755	74,5	15,2	7,7	15.175	-1
84	Peru	0,734	74,6	13,1	9,0	11.015	8
88	Ecuador	0,732	75,9	14,2	7,6	10.605	7
97	Colombia	0,720	74,0	13,5	7,3	12.040	-9
101	Dominican Republic	0,715	73,5	13,1	7,6	11.883	-12
MEDIUM HUMAN DEVELOPMENT							
112	Paraguay	0,679	72,9	11,9	7,7	7.643	-3
116	El Salvador	0,666	73,0	12,3	6,5	7.349	-3
119	Bolivia (Plurinational State of)	0,662	68,3	13,2	8,2	5.760	4
125	Nicaragua	0,631	74,9	11,5	6,0	4.457	12
128	Guatemala	0,627	71,8	10,7	5,6	6.929	-11
131	Honduras	0,606	73,1	11,1	5,5	3.938	7
LOW HUMAN DEVELOPMENT							
163	Haiti	0,483	62,8	8,7	4,9	1.669	4
OTHER COUNTRIES OR TERRITORIES							
	Developing countries	0,660	69,8	11,7	6,8	9.071	—
	Latin America and the Caribbean	0,748	75,0	14,0	8,2	14.242	—
	Least developed countries	0,502	63,3	9,3	4,1	2.387	—
	World	0,711	71,5	12,2	7,9	14.301	—

E. Holt and Laury experiment

E.1 Introduction and game explanation

The Holt and Laury (2002) experiment is a test designed to classify subjects according to the intensity of their aversion or attraction to risky choices. HL test allows the possibility to classify subjects according to criteria which are not applicable in simple models. This, thanks to the richness of patterns emerging as deviations from the expected utility predicted behaviour across panels

Thus, using original data from a homogeneous population, we provide an experimental comparison of HL with another incentivized risk- elicitation method (SG), which is made by a series of four tasks. That is because of we think it can help us in identifying risk-related attitudes which cannot be identified by the implementation of HL alone.

Moreover, HL experiment was made by comparing two multiple decision methods instead that one single decision method, in order to provide a greater reliability. When risk aversion is considered as an explanatory variable for subject's behaviour in their strategic decision setting, a preliminary test of risk aversion. Hence, for the purpose of our analysis HL has a clear advantage with respect to many other risk-elicitation methods since it allows to completely describe a subject's risk attitude through just one subject's choice.

E.2 Experimental design

A population of 89 subjects, recruited among heterogeneous group of people between Panama City and the rural areas, participated in 4 different sessions facing both HL and SG tasks and the Georgantzis experiment. Then, further 119 subjects were recruited to face HL and SG. Only one of the three tasks was used

to determine subjects' final earnings. The choice of the task to be paid was made in a random way, by flipping a coin.

The HL task was composed by two variants of enforced monotonicity, 20 lottery pairs, and set of lottery payoffs.

• Subjects were presented with a battery of 19 pairs of two-outcome lotteries, numbered from line L1 to line L19, and a last (empty) line L20.

• Each pair described two lotteries called A and B, each one with two positive monetary outcomes and their associated probabilities.

• The two monetary outcomes of each lottery were kept constant: for each line L1–L19, lottery A always had the two outcomes, $x_A = 13.20$, $x_A = 11.00$, and lottery B always had the two outcomes, $x_B = e\ 24.20$, $x_B = 0.55$.

• Within each pair, x_A and x_B were attached the same probability p, with p increasing – gradually and monotonically – when moving from the top (L1) to the bottom (L19) of the battery of lottery pairs.

• Probabilities were determined through an urn that contained 20 tickets, numbered from 1 to 20. In particular, in L1 the highest outcome was assigned starting from ticket 2; in L2, starting from ticket 3 and so on; finally, in L19, the highest outcome was assigned ticket 20.

Moreover, given the battery of lotteries, each subject was asked to choose the switch line, i.e. the pair of lotteries starting from which he/she preferred lottery B to lottery A. Thus, for all pairs of lotteries above the switch line, a subject preferred lottery A to lottery B, while starting from the pair on the switch line and for all the pairs below, he/she preferred lottery B to lottery A. Hence, A subject preferring lottery A to lottery B for all the 19 pairs, selected the last (empty) line L20.Suppose that task 1 was randomly selected at the end of the experiment to determine subjects' earnings. Then, for all the subject we would randomly select a pair of lotteries, i.e. one of the 19 lines of the battery of lotteries. The randomly-selected line indicated the number of tickets assigned to

the highest outcome, hence the probability associated to the two outcomes of both lotteries A and lottery B. If a subject's switch line was below the randomly-selected line, then the two lottery outcomes for which that subject played were x_A =13.20\$ and x_A =11.00\$; otherwise, the two lottery outcomes for which that subject played were x_B =e 24.20\$and x_B =e 0.55\$.

E.3 Conclusion

Each task is mainly targeted to elicit a subject's degree of (monetary) risk aversion, through a different method. Still, this variant of HL is less flexible because of a subject is asked to choose the line (pair of lotteries) starting from which she preferred lottery B to lottery A (with the same associated probabilities). On the other hand, the SG experiment is more flexible since in each panel of lotteries the subject is asked to pick the preferred outcome-probability combination,

To conclude, in HL, by picking the number of the switch line (line at which a subject chooses to switch from lottery A to lottery B) we can provide an interval estimate of the subjects' coefficient r of relative risk aversion. Moreover, doubling the number of outcome probabilities for which lotteries A and B are compared (20 lottery pairs instead of 10) allowed a more precise interval estimate of r, given the switching line.

Thus, given the structure of the battery of lotteries (see the Appendix F), the higher the number of the switch line, the higher his/her disclosed degree r of relative risk aversion. In particular: a switch line from L1 to L9 would reveal risk propensity (the smaller the number of the switch line, the higher |r|, the degree of risk propensity). A risk-neutral subject would indicate L10 as switch line; a switch line from L11 to L19 would reveal risk aversion (the greater the number of the switch line, the higher r, the degree of risk aversion).

F. Holt and Laury instructions – Spanish version

TAREA 1:

En la hoja siguiente encontrarás una tabla igual a la que te será entregada, la tabla muestra 19 parejas de loterías llamadas respectivamente A y B.

El juego consiste en indicar cual pareja de lotería prefieres (la lotería B o la lotería A). Esto significa que para todas las parejas anteriores a las cuales has elegido como favorita prefieres la lotería A a la B, mientras a empezar desde la pareja que has elegido y para todas las sucesivas, prefieres la lotería B a la A.

Al final de la sesión experimental , si esta prueba es seleccionada para el pago, tus ganancias serán determinadas por lo siguiente:

• Un asistente seleccionará de manera anónima y con igual probabilidad una de las 19 parejas de loterías extrayendo un numero desde una urna que contiene 19 números

• Considerando la pareja de lotería seleccionada, tu elección será utilizada para determinar la lotería en la cual participaras, en este caso en la A o la B

• Ahora, uno de los asistentes extraerá de manera casual y con igual probabilidad una bolita desde una urna que contiene muchas bolitas blancas y tantas naranjas cuantas las indicadas en la pareja de lotería que ha extraído. Tu ganancia dependerá en el color de la bolita extracta, así como indicado en el cuadro reportado arriba.

Ahora te será entregado un cuadro. Indica con una cruz la línea en la cual marcas tu preferencia entre la lotería A o B.

	Composición urna	Lotería A	Lotería B	A --> B
L.1	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ (1 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.2	(2 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.3	(3 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.4	(4 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.5	(5 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.6	(6 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.7	(7 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.8	(8 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.9	(9 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.10	(10 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.11	(11 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.12	(12 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.13	(13 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.14	(14 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.15	(15 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.16	(16 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.17	(17 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.18	(18 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.19	(19 naranja)	Si la bola extraída es — **Naranja** tú ganas $ 13.20 — **Blanco** tú ganas € 11.00	Si la bola extraída es — **Naranja** tú ganas $ 24.20 — **Blanco** tú ganas $ 0.55	A partir de esta línea prefiero jugar lotería B en lugar de lotería A ○
L.20				Elijo siempre jugar lotería A ○

G. Sabater-Grande, Georgantzis

TAREA 2:

En el siguiente juego encontraréis cuatro tablas con 10 loterías cada una. Para cada una de las columnas corresponde una lotería diferente.

Todas las tablas tienen la misma estructura y se diferencian solamente por las posibles victorias.

En cada casilla encontraréis representada una urna que contiene 10 bolas, algunas anaranjadas y algunas blancas. Las bolitas anaranjadas son aquellas vencedoras. Si se extrae una bolita anaranjada, recibiréis el premio indicado en la tercera línea.
De otro modo, recibiréis 0 $.

Entonces les pedimos, para cada una de las cuatro tablas aquí abajo, que indique claramente la lotería a que quieres participar.

Al final de este experimento, si se marca este juego para el pago, vuestras victorias se determinaran del modo siguiente: primero se seleccionará aleatoriamente y con la misma probabilidad una de las cuatro tablas. Después, cada una de vosotros está asignado a la lotería elegida in aquella tabla.

Uno de nuestros asistentes se encargará de sortear una de las 10 bolas qué están en la urna. La bolita que se extrae determinará el premio que vosotros ganaréis de acuerdo con la lotería elegida.

TABLA 1:
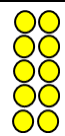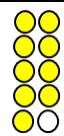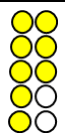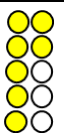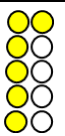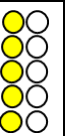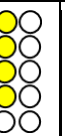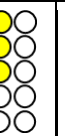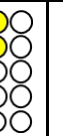
	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%
Probabilidad de ganar										
Posible victoria en dólares	1.1	1.232	1.397	1.617	1.903	2.31	2.915	3.916	5.94	11.99
Mi elección	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

TABLA 2:

	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%
Probabilidad de ganar										
Posible victoria en dólares	1.1	1.32	1.65	2.09	2.53	3.3	4.4	6.27	9.9	20.9
Mi elección	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

TABLA 3:

	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%
Probabilidad de ganar										
Posible victoria en dólares	1.1	1.826	2.75	3.927	5.5	7.7	11	16.5	27.5	60.5
Mi elección	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

TABLA 4:

	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%
Probabilidad de ganar										
Posible victoria en dólares	1.1	2.42	4.18	6.27	9.13	13.2	19.25	29.37	49.5	110
Mi elección	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐