

# **Gordon Institute of Business Science**

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**Cultivating early stage entrepreneurship to solve the problem of youth unemployment**

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria,  
in partial fulfilment of the requirements for the degree of Master of Business Administration.

13 January 2016

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## **Abstract**

Youth unemployment is a major concern for societies all around the world. Not only do unemployed youth represent a growing risk to social stability, they also pose a considerable economic predicament. Unemployed young people tend to continue being unemployed into adulthood and cannot be consumers of the future or contribute meaningfully to economic development.

The purpose of this research was to establish, empirically, if total early stage entrepreneurship (TEA) is a viable solution for solving the problem of youth unemployment. Using the indicators of TEA from the Global Entrepreneurship Monitor's (GEM) 2015 Global Report, this report analyses (a) the influence of TEA on job creation and (b) the intensity of Human Development (HDI), per capita incomes (GDP Per Capita), Social Welfare (SWI) as well as Foreign Direct Investment (FDI) (independent variables) on TEA (dependent variable). The influence of the independent variables was analysed using the method of correlation and regression analysis.

Results from this study indicate that TEA is a necessary but insufficient contributor to youth employment. Results were discussed with cognisance to existing literature on labour economics, entrepreneurship and motivation. Based on the findings, recommendations are made on how TEA can be cultivated to solve the problem of youth unemployment and a model is proposed on how to influence TEA levels in different contexts.

## **Keywords**

Youth, Unemployment, Early Stage Entrepreneurship.

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## **Declaration**

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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## 1. Chapter 1: Introduction

### 1.1 Research Title

Cultivating early-stage entrepreneurship to solve the problem of youth unemployment.

### 1.2 Introduction

South Africa has an acute problem of youth unemployment with 55 percent of all those who are unemployed being under the age of 29 years (Stats SA, 2014). This is particularly problematic because unemployed young people tend to experience continued unemployment well into their adulthood (Gregg, 2001) (Mroz & Savage, 2006). Most of these young people are also unskilled and inexperienced, which makes it harder for them to exit the unemployment trap (National Treasury, 2011).

Using the country's definition of youth (people between the ages of 15 and 34 years), 72 percent of the unemployed (3 million people) are youth (Stats SA, 2014). Clearly, South African youth bears the brunt of the unemployment crisis faced by the country. This, we can infer, is the primary reason that youth unemployment has been singled out as the most important crisis facing South Africa after democracy (Zuma, 2015).

Approximately 2 million new entrants, mainly youth, entered the job market during the period 2003 and 2008 (Stats SA, 2014), completely negating 2 million new job gains caused by the unprecedented average annual economic growth rates of 5 percent during the same period (SARB, 2014) resulting into a zero net position.

Alarmingly, we have seen in recent years the growing phenomenon of jobless growth. In the 1970s a 1 percent increase in economic growth led to a 1 percent increase in employment growth but by 2009 the employment intensity of growth had contracted to 0.35 percent (CDE, 2011). This regressor, known as the Growth Elasticity of Employment is an excellent proxy for the intensity of labour involvement in economic growth (Barker, 2007).

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All of this then points to the fact that there is an urgent need for us to attend to the problem of youth unemployment. There is a pressing need to find lasting solutions to growing rates of unemployed and consequently economically displaced young people. Particularly in developing nations such as South Africa, which represents 0.5 percent of the world's labour force but nearly 2 percent of its unemployment (ILO, 2014).

### 1.3 Problem Description

The problem of youth unemployment is well understood in politics, academics and in business (Gregg, 2001) (National Treasury, 2011). With this understanding, there is a generally accepted view that the long-term solution to unemployment in general, or youth unemployment in particular, is Entrepreneurship, particularly youth entrepreneurship (Greene, 2005). Early-stage Entrepreneurship has been identified as a particular area of interest even though it has not been articulated how this will be cultivated and operationalised.

There is little research conducted on Early-stage Entrepreneurship and where this research exists, it is not of academic nature (Gartner & Baker, 2010). As a result, we do not really know if Early-stage Entrepreneurship is positively correlated to employment creation, never mind if it is its cause. Furthermore, we do not know empirically what makes successful Entrepreneurs successful and others less successful.

Even though there is a litany of research on entrepreneurship, most of this research can be situated in the domain of who is an entrepreneur, or what is an entrepreneur (Stevenson & Jarillo, 1990). Far less of such research is focussed on understanding the causal effects of entrepreneurial success (Venkataraman, Sarasvathy, Dew, & Forster, 2012) and how that may be replicated elsewhere.

There is a clear need for the development of further research and insights into what causes high levels of Early-stage Entrepreneurship, what makes Early-stage Entrepreneurs successful and how this process may create employment opportunities (Harmina, Dumicic, & Cingula, 2014), particularly for the youth.

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This research attempts to consolidate much of the literature on Early-stage Entrepreneurship, Labour Economics and Motivation, to add new insights on how TEA can be cultivated to solve the problem of Youth Unemployment.

### 1.4 Research Objectives

#### 1.4.1 To establish both the economic and non-economic determinants that drive TEA

High levels of unemployment are expected to stimulate total early-stage entrepreneurship activity (TEA) (Singer, Amoros, & Arreola, 2015). Yet South Africa has one of the lowest TEA rates among middle income countries, at 7%, and the lowest youth TEA rate in sub-Saharan Africa (Turton & Herrington, 2012). This is notwithstanding the infrastructure and support available for start-ups and entrepreneurs (Berry, et al., 2002). Where businesses are eventually started, they tend to remain informal micro enterprises (Berry, et al., 2002).

The first objective is to establish why this is the case and determine what can be done about it.

#### 1.4.2 To establish if TEA entrepreneurs actually create meaningful job opportunities

Young but highly skilled people tend to disproportionately operate Gazelles (Henrekson & Johansson, 2009) (high growth companies that employ at-least 10 people, have revenues of at-least US\$100 000, have been growing jobs at a minimum rate of 20 percent per annum and are less than 5 years old). Gazelles tend to create more jobs, particularly for young people, than any other type of business enterprise (Henrekson & Johansson, 2009).

The second objective is to determine what proportion of TEA entrepreneurs establish successful businesses that create employment opportunities and what sets them apart from others.

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### 1.4.3 To determine ways in which TEA can be cultivated and institutionalised

Behaviour is a function of the environment in which people exist, as well as the motivations of the people themselves (Baskerville, 2003). The environment presents various constraints that hinder aspirant entrepreneurs from thoughtfully pursuing their aspiration (Clover & Darroch, 2005). However, the entrepreneurs themselves may lack the motivation or self-efficacy to pursue business opportunities even when they have nothing to lose (Ogunleye & Osagu, 2014).

The final objective is to identify those factors in the environment, culture or elementary development that hinder TEA and establish if there are mechanisms to reverse these and enact new behaviours, that is, higher TEA activity.

### 1.5 Policy Need

This research is intended to reconcile the differences between policy intentions around the support for early-stage entrepreneurship and its manifestations. There seems to be a discord between the financial and non-financial support interventions of Government and the relative success of small and medium size business (Berry, et al., 2002). This suggests that there is a difference between what Government believes are necessary interventions to stimulate and cause the success of start-up enterprises and the often terminal challenges faced by such businesses.

### 1.6 Business Need

In his seminal work on clusters, Porter goes to show that industries, whether within or outside cluster environments, thrive when there is intense competition (Porter, 1998). Competitors cause prices to go down, markets to open, skills levels to rise and innovation to speed up (Porter, 1998). If we improve our understanding of what makes early-stage businesses succeed, not only will we assist more businesses survive the often teething and tumultuous start-up phases, but we can induce more start-ups and the survival of small businesses, which bodes well for economic development and job creation (Murphy, Liao, & Welsch, 2006).

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### 1.7 Academic Need

This study complements and adds to a growing body of literature on Entrepreneurship and seeks to contribute new insights to early-stage Entrepreneurship and its relationship with job creation in general but youth employment in particular.

Whereas there is a litany of literature on entrepreneurship, a lot of this literature is of non-academic orientation (Gartner & Baker, 2010). Furthermore, there isn't a lot of literature on early-stage entrepreneurship and yet even less literature on TEA and employment or economic outcomes thereof (Simeh, 2011).

Therefore, this study is situated at the apex of two domains, namely; entrepreneurship as a phenomenon within social sciences (Davidsson & Honig, 2003) and labour economics as a basis of our understanding of the scourge of unemployment and its potential causes (Barker, 2007).

### 1.8 Proposed Heuristic Formula

Lewin, postulates that behaviour is function of both the individual and the environment (Sansone, Morf, & Panter, 2004), which he reduced to a simple heuristic formula  $B = f(P,E)$ . If we borrow Lewin's equation and substitute the generic variables with more specific macroeconomic variables; Entrepreneurial Behaviour, Personal Development and Economic Environment, so that

$$\text{TEA} = f(\text{SWI}, \text{HDI}, \text{GDP}_{\text{per capita}}, \text{FDI})$$

This formula is intended to provide a simplified conceptual understanding of how most of TEA can be explained by the level of Social Welfare Index, Human Development Index (HDI) as well as the level of both Per Capita GDP and Foreign Direct Investment. This concept will be expanded on in subsequent chapters of this paper to advance the argument that TEA, particularly sustainable TEA, can only be a solution for unemployment where SWI levels are low and where incubation can be cultivated synergistically.

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## **2. Chapter 2: Literature Review**

### 2.1 Introduction

This research paper is concerned with understanding the drivers of total early-stage entrepreneurship activity (TEA) and whether or not TEA influences positive economic development, particularly employment creation and especially for the youth. To fully comprehend facets of entrepreneurial behaviour and employment creation we must first show an appreciation for the body of literature that pertains to these subject matters.

For purposes of this research, the theory base has been limited to, broadly, three domains of literature. The first being entrepreneurship itself, which has been extensively researched over the preceding half century. This has been so because of a scholarly accepted view that entrepreneurial behaviour leads to employment creation, among many other economic development benefits (Harmina, Dumicic, & Cingula, 2014) and (Murphy, Liao, & Welsch, 2006).

For this economic consequence, this research paper takes a comprehensive look at micro and macroeconomic theories and particularly labour economics. This research paper argues, based on theory, that entrepreneurship itself is a subset not only of management but of labour economics as well. Surely the domain of self-employment resides in the ambit of the utilisation of ones labour in order to realise some economic value, especially in the form of social contribution, personal income and wealth creation (Simeph, 2011).

Finally, because entrepreneurship is considered a socially desirable behaviour and resides in the domain of social sciences (Moog, 2002), this research paper has reviewed a number of theories on motivation, psychology and social behaviour.

All of these theories are considered concurrently to show a greater appreciation of the complexity of context (economic conditions), individual behaviour (capability and motivation) and the consequences or outcomes of individual behaviour. Succinctly, this research paper looks at the causes (why) and effects (what), as well as the behaviours that facilitate TEA (how).

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It is fairly evident from all the literature that entrepreneurship is a consequence of a convergence of various socioeconomic and interpersonal conditions and this research paper sets out a clear theory on what those circumstances are and how they can be cultivated to produce more of this desired behaviour in a constant and predictable manner.

## 2.2 Definitions

### *Defining entrepreneurship*

For though there are many definitions of entrepreneurship, the most scholarly accepted is that postulated by Harvard Professor, Howard Stevenson (Gartner & Baker, 2010);

“Entrepreneurship is a process by which individuals pursue opportunities without regard to the resources they currently control” (Stevenson & Jarillo, 1990, p. 23).

This definition is particularly important because it suggests to us that resources on hand are of less importance than the individual’s propensity to want to pursue opportunities. Also, it infers that opportunities are something to be pursued, which implies that they are desirable future outcomes that individuals want and perceive to be feasible.

Stevenson’s definition of entrepreneurship poses several challenges however. The first being that the very perception of what is feasible may be adversely affected by the resources accessible to an individual at a point in time (Gartner & Baker, 2010). The implication of this is that the opportunities that an entrepreneur may choose to pursue will be determined at the intersection of his desires and capabilities.

It seems like a reasonable proposition that desires, if distinguished from fantasies can only expand at the same rate as ones capabilities (Zahra, Sapienza, & Davidsson, 2006). **Figure 1** below, shows the dynamic relationship between desires and capabilities and demonstrates that this does not occur in a static environment.

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Both desires and capabilities are upwardly sloping, which shows that more of each is desirable, but note that they increase at the same rate, with capabilities lagging desires. The more you are capable of, the more you desire. This concept forms a significant part of this research report and is revisited and illuminated throughout.

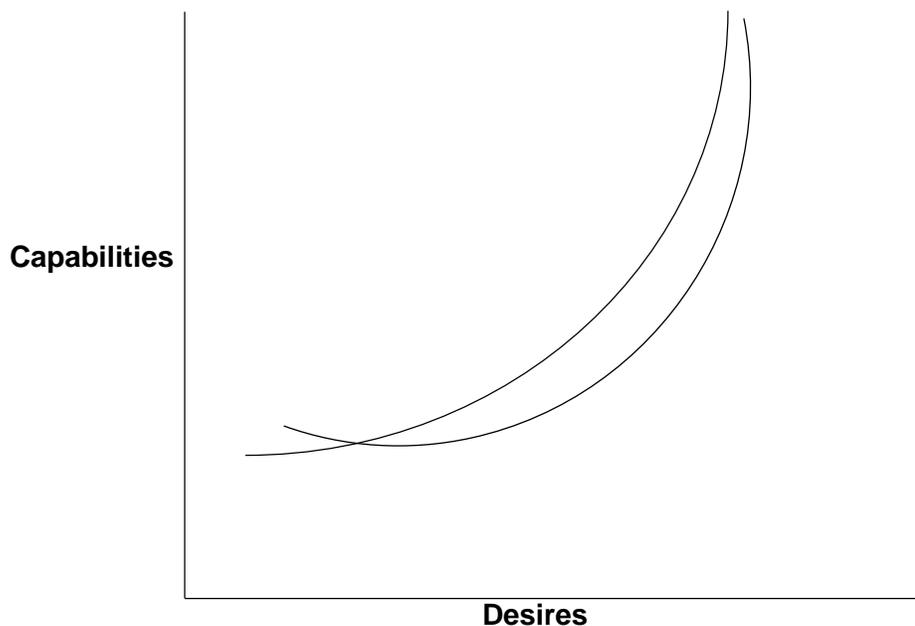


Figure 1: Desires and Capabilities Matrix

## ***Defining Total early-stage Entrepreneurial Activity***

The Global Entrepreneurship Monitor (GEM), which is the foremost organisation researching entrepreneurship activity in several countries across the world, defines of Total early-stage Entrepreneurial Activity (TEA) as; the percentage of the adult population (18-64 years old) that is either actively involved in starting a new business (nascent entrepreneur) or the owner/manager of a business that is less than forty two months old (young business) (Singer, Amoros, & Arreola, 2015).

This report is concerned with how TEA can be cultivated to solve the problem of unemployment.

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### 2.2.1 Causes of TEA (Why entrepreneurs act)

There are two broad motivations that drive people towards becoming entrepreneurs; necessity and opportunity (Venkataraman, Sarasvathy, Dew, & Forster, 2012). Although these conceptions are not mutually exclusive, they represent opposite ends of a continuum. Necessity entrepreneurs see entrepreneurship as a means to make ends-meet, whereas opportunity entrepreneurs are driven by the motivation to take advantage of a situation or condition in the market place (Singer, Amoros, & Arreola, 2015).

#### 2.2.1.1 Necessity Driven Entrepreneurs

Necessity driven entrepreneurs tend to be individuals who prefer employment over self-employment and who have been unsuccessful in finding work (Berry, et al., 2002). This is often caused by the fact that they are inadequately equipped to partake in the labour market; that is, they are under educated, unskilled and inexperienced in some combination and form (National Treasury, 2011). However, it could also be a function of a variety of labour market inefficiencies (Carlsson, Eriksson, & Gottfries, 2006).

This suggests that when we discuss necessity driven entrepreneurship, we must distinguish between necessity upon the individual's personal agency from necessity that pertains to economic or market conditions. This is an important distinction because in the latter scenario, even individuals with extensive education, skills and experience would encounter some difficulty in finding employment. This would cause these individuals to look toward self-employment as a means of generating an income and supporting themselves and their families.

Shapiro and Stiglitz, for example, found that low wages cause volatility in the labour market and exacerbate unemployment cycles (Shapiro & Stiglitz, 1984). Individuals may select to remain unemployed for longer if wages in the labour market do not meet their expectations (Barker, 2007). This is particularly the case when individuals have a target entry wage rate in mind and opt to remain in education longer to enhance their chances of achieving such target wage rate.

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Where the wage rate remains low for a prolonged period in time, these individuals may opt to become self-employed. In this sense, there is equilibrium unemployment (Shapiro & Stiglitz, 1984) in the market until the wage rate reaches a breakeven point, where individuals are indifferent over choosing between self-employment and being employed at prevailing market wage rates.

However, Carlsson, Eriksson and Gottfries argue that according to Efficiency Wage Theory, wages are already set above the market clearing level (equilibrium) and employment is then determined by the demand for labour (Carlsson, Eriksson, & Gottfries, 2006). Given the uncertainty that employers have about the productivity of inexperienced, inadequately educated and unskilled people, they tend to perceive the risk of employing them as being too high (National Treasury, 2011) and as such delay employment.

Wages are above the market equilibrium because of artificial measures imposed by labour unions and Governments attempting to appease the electorate by imposing minimum wages (Barker, 2007), (Carlsson, Eriksson, & Gottfries, 2006), (Shapiro & Stiglitz, 1984). This way, there is always excess labour supply in the market and firms are in a position to hire the number of workers they want (Carlsson, Eriksson, & Gottfries, 2006) albeit at the artificially high wage rate.

Another argument, postulated by Berry, et al, is that labour demand is a function of production requirements (Berry, et al., 2002). In this sense, a given economy will only require sufficient labour to support the production it has to deliver on, based on what is actually produced and the method in which it is produced (Holte, 1987). An economy with minimal capital, requires minimal labour to support the capital that is invested in that economy (Berry, et al., 2002).

Succinctly the productivity of one factor is enhanced by the quality and quantity of the other. Countries with a broad capital base have high labour productivity and are able to employ the majority of their labour force (Berry, et al., 2002). Conversely, countries characterised by lower capital endowments usually have an abundance of low-skilled labour, which is often not highly productive as only a limited number of workers are required to operate the fixed amount of capital. This leads to fewer employment opportunities for unskilled labour (Holte, 1987).

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A services oriented economy, such as South Africa (SARB, 2014) where more than 70 percent of GDP is generated in the services sector, will typically require an educated labour force. Where the labour force is uneducated, as is the case in South Africa (Stats SA, 2014), it results in a mismatch between the demand for and supply of labour, resulting in both low economic growth and high unemployment levels, particularly of young people (National Treasury, 2011).

For the above reasons, unemployment affects more or less selectively the less educated, less skilled and less experienced (Stats SA, 2014). Consequently, necessity entrepreneurship is dominated by the ranks of such individuals. This worsens over time as unemployed young people are less likely to find jobs in adulthood and find themselves forced to become necessity entrepreneurs (Gregg, 2001).

The evidence in the economic theory then suggests that even though economic conditions can cause a rise in necessity entrepreneurship, it is most palpable among individuals with little education, skills and experience. These individuals are predominantly young people as evidenced by the fact that global unemployment disproportionately affects young people (ILO, 2014). The work of Lee, Zuzze and Ross also found that most of the unemployed in South Africa are young people with limited literacy and numerical ability (Lee, Zuzze, & Ross, 2005).

### 2.2.1.2 Opportunity Driven Entrepreneurs

Opportunity Based Entrepreneurship Theory exerts the view that entrepreneurship is about searching for change and exploiting opportunities (Drucker, 1985). This theory has since been expanded to what is today referred to as Resource-Based Entrepreneurship Theory (Stevenson & Harmeling, 1990). The Resource-Based Entrepreneurship Theory argues that the resources of the founder(s) are the most fundamental predictor of new venture growth and success (Alvarez & Busenitz, 2001). Access to financial, social and human capital resources, is seen as the key determinant of the individual's ability to identify and seize opportunities (Alvarez & Busenitz, 2001). This is a stark contradiction to the Stevenson and Jarillo definition of an entrepreneur and entrepreneurship (Stevenson & Jarillo, 1990).

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This is consistent with the view espoused by Gartner and Baker that the pursuit of opportunities is contingent upon an individual's perception of what is attractive and feasible (Gartner & Baker, 2010). **Figure 1** above showed that the opportunities that an entrepreneur can pragmatically pursue are determined at the intersection of his desires and capabilities. Hence, opportunity driven entrepreneurs tend to be individuals who have identified a gap or condition in the market for which they possess the resources or resourcefulness to take advantage of (Berry, et al., 2002).

These individuals have been found to have a high tolerance for ambiguity and a healthy risk appetite (Ogunleye & Osagu, 2014) underpinned by the need for achievement (McClelland, 1967). Theoretically, tolerance for ambiguity, risk appetite and a need for achievement are all higher order needs (Maslow, 1943). This infers that the individual is in a position to begin with, of having addressed their lower order needs, to incur such penalty as may be inherent in the pursuit of such higher order needs.

Likewise, Schumpeter argued that these individuals are disruptors, that they destroy existing barriers and dislodge the market from somnolence and equilibrium (Schumpeter, 1934). Kirzner disagrees and submits that entrepreneurs do not destroy the market equilibrium but help markets discover it in the first place (Kirzner, 1999). Kirzner is of the view that the market is not in equilibrium to start with and that entrepreneurs find new and efficient ways to deliver new value in the market place.

In Kirzner's view, the entrepreneur is alert to market disequilibrium or inefficiencies and as such is able to cultivate their own creativity to bring about innovation and efficiency, causing a new equilibrium to emerge (Kirzner, 1999). From this perspective, the entrepreneur is motivated by their innate desire to alter the status quo in the market and bring about a new market condition.

Eckhardt and Shane complement Kirzner's view by arguing that entrepreneurs possess a superior understanding of the market place and bring this to fruition through exploration and exploitation of such superior insights (Eckhardt & Shane, 2003). The motivation for the entrepreneur is then to take advantage of their unique insight to create both personal wealth and jobs in the economy (Murphy, Liao, & Welsch, 2006).

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Greene supports this argument by drawing on evidence that older people, beyond youth are not only three times more likely to start and own a business, but are substantively more likely to succeed at it as well (Greene, 2005). Greene attributes this to superior knowledge of the market place owing to the knowledge and experience accumulated by older individuals over time. Most of the literature as discussed later in this report, is consistent with the view that there is a great capabilities thrust that is the driving force of entrepreneurial inclination.

Even so, Martin and Osberg advance a view which says the primacy of social impact is the driving force behind levels of TEA (Martin & Osberg, 2007). They argue that as social beings, most humans desire to make a social contribution and that ultimately, entrepreneurial activity is sustainably driven by a mission related impact. The rise of the social entrepreneurship movement is cited as evidence of this (Martin & Osberg, 2007).

Notwithstanding the foregoing arguments, Hessels, van Stel, Brouwer and Wennekers, are of the view that social security arrangements are key deterrents and motivating factors to TEA (Hessels, van Stel, Brouwer, & Wennekers, 2007). Their argument is premised on the notion that if broader social security exists to protect unsuccessful entrepreneurs, opportunities are more attractive and, more people are likely to become entrepreneurs as there is little or no threat of loss to their social benefits (Hessels, van Stel, Brouwer, & Wennekers, 2007).

The main problem with this argument is that it contradicts the widely held scholarly view that risk is an inextricable and accepted component of the entrepreneurial undertaking and that entrepreneurs have a high level of risk tolerance (Ogunleye & Osagu, 2014). Winborg and Landstrom also found that, based on the Psychological Entrepreneurship Theory, tolerance for risk and ambiguity are key success factors for effective entrepreneurship (Winborg & Landstrom, 2001), particularly TEA where there is a lot of bootstrapping required.

Similarly, Baskerville portends that innovation and venture creation behaviours are subsets of culture (Baskerville, 2003) according to the Anthropological Entrepreneurship Theory. In an environment where people are unable to find work, entrepreneurship should prevail as the main driver of economic activity. Where this is not the case, the cultural and social context must be closely examined to determine the underlying causes of such behaviour (Baskerville, 2003).

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### 2.2.2 Outcomes of TEA (What entrepreneurs achieve)

Entrepreneurship activity is important because it is considered a means of creating both wealth and jobs (Murphy, Liao, & Welsch, 2006). The advent of entrepreneurship has exponentially increased per capita wealth in the western world over the preceding four centuries (Murphy, Liao, & Welsch, 2006) and with it, caused unprecedented development in all facets of life, health and general wellbeing for the preceding four centuries.

The authors argue that the last two decades have seen massive job destructions which have eliminated millions of jobs within Fortune 500 companies (Murphy, Liao, & Welsch, 2006) and that this slack has been picked up by the more than 600 thousand start-up firms incorporated annually during the same period (Murphy, Liao, & Welsch, 2006). This suggests that there are permanent job creation and destruction cycles in the economy and a buoyant entrepreneurial sector is necessary to balance out the jobs churned by large corporations (Mortensen & Pissarides, 1994).

The paradox here is that innovation and entrepreneurship are not amenable to perfect competition and equilibrium (Murphy, Liao, & Welsch, 2006). This means it is the very ingenuity of the small innovative firms that leads to job destructions in the large corporations in the first place. However, Christensen and Bower found that what makes smaller firms more innovative and entrepreneurial is their proximity to market and their ability to listen to customer demands (Christensen & Bower, 1996).

This argument vindicates Schumpeter in his view that the entrepreneur's primary role is that of destructing the status quo and equilibrium (Schumpeter, 1934). Kirzner would however, argue that the market was in a false if not temporary equilibrium and the entrepreneur did not so much destroy the equilibrium, as much as he helped the market to discover it (Kirzner, 1999). Klepper provides a more balanced view by suggesting that these are fundamentally two sides of the same coin. That firms possess different types of expertise, which leads them to different types of innovations appropriate to the product life cycle (Klepper, 1996).

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There is space then for both large corporations and smaller firms to coexist to achieve greater economic impact. Harmina, Dumitic and Cingula investigate the relationship between different types of entrepreneurial activities and per capita GDP. Based on the views articulated by Murphy, Liao and Welsch, you would expect a positive relationship between GDP per capita and early-stage entrepreneurial activity.

However, in their correlation analysis, results show that the relationship between GDP per capita and TEA is statistically significant and negative as is the one between GDP per capita with established entrepreneurial activities (Harmina, Dumitic, & Cingula, 2014). They found that the relationship between employee entrepreneurial activity (corporate entrepreneurship) and GDP per capita was statistically significant and positive. Concisely, the researchers found that GDP per capita is mostly positively moved by employee entrepreneurial activity and much less so by TEA or even established entrepreneurial activity (Harmina, Dumitic, & Cingula, 2014).

This statistical outcome is immensely important because not only is it one of very few empirical studies on GDP per capita, as a proxy measure of overall wellbeing, and entrepreneurial activity (Harmina, Dumitic, & Cingula, 2014). It is early evidence that in countries where GDP per capita levels are low and early entrepreneurial activity rates are high, necessity entrepreneurship among those with proportionally lower levels of education is dominant, and fails to make a significant contribution to GDP per capita (Harmina, Dumitic, & Cingula, 2014).

This view is supported by voluminous amounts of literature on what makes entrepreneurs succeed, which is discussed in the next section of this report. Notably, in his research, Greene found that older generations who have accumulated both human and financial capital (Alvarez & Busenitz, 2001) are not only more likely to pursue opportunities and establish businesses, but are also more likely to succeed at it because of their wherewithal (Greene, 2005).

Ostensibly, this seems to contradict the findings of Henrekson and Johansson that Gazelles (small high growth firms) create most of the jobs in the economy (Henrekson & Johansson, 2009). Much like Birch, who found that, in a sample with nearly 6 million businesses, small businesses employing less than twenty people created two-thirds of all jobs and that those employing less than 100 people created 80 percent of all jobs over a century (Birch, 1981).

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These findings are not contradictory at all; they are merely depictions through different lenses. TEA failure rates are lowest and still dropping among innovation driven economies. They are highest and still rising in factor driven economies (Singer, Amoros, & Arreola, 2015). This could be because of the implicit level of education among TEA entrepreneurs in factor economies as well as the fact that most are necessity entrepreneurs (Harmina, Dumicic, & Cingula, 2014).

(Henrekson & Johansson, 2009), (Murphy, Liao, & Welsch, 2006) as well as (Birch, 1981) are all correct in their observations that it is the small high growth businesses that create jobs and wealth in economies. Perhaps the most poignant point omitted from their work is that, the quality of small businesses is contingent upon the quality of the human capital that goes into building them (Moog, 2002). That small businesses add value and create jobs is well established, however they only do so when they survive the first few years of business (Berry, et al., 2002).

Entrepreneurs create new products and services (Stevenson & Jarillo, 1990), new methods of distribution, innovations that make more possible with less (Porter, 1998), job opportunities and increased GDP per capita (Murphy, Liao, & Welsch, 2006). These are all factors that catapult societies forward and make economies thrive. Hence it is considered a necessary objective for countries to pursue an entrepreneurial culture to create economic value (Berry, et al., 2002).

One important mechanism through which a buoyant entrepreneurial mind-set creates economic value, is through the emergence of regional production capacity, skilled labour, security of supply and expertise that deeply entrench that region's share of demand (Krugman, 1990). Start-up firms thrive in efficient regional clusters and markets (Feldman, 2001) where they have access to skills, suppliers, complementing industries, co-opetition and eventually a sustainable competitive advantage (Porter, 1998).

The foregoing theory conclusively and indelibly accords the phenomenon of job creation to the level of entrepreneurial activity. The theory has established that there is a statistically significant and positive relationship between entrepreneurial activity and GDP per capita as well as job growth. The main challenge confronted by this research paper is the explication of the type of entrepreneurial activity that creates jobs, so that it can both be replicated and institutionalised.

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### 2.2.3 Antecedents of TEA (How entrepreneurs succeed)

Whereas we have now established that not all entrepreneurial activity adds economic value (Harmina, Dumicic, & Cingula, 2014) and understand that the human and social capital invested in the entrepreneurship activity are the key to the value creation (Moog, 2002). This section of the research report explicates the factors that make some entrepreneurs successful while others fail and how they drive sustenance beyond the start-up phases of business.

Moving from idea conception to a fully operational business is a tough proposition for even the most astute of entrepreneurs (Alvarez & Busenitz, 2001). Over the preceding six decades, entrepreneurs have been subjected to batteries of tests in an attempt to discern if they possess variables that distinguish them from non-entrepreneurs (Gartner, 1985). Most of these tests have not successfully isolated any such variables.

This, Gartner explains, is because characteristics are not what distinguish individuals apart. Rather, it is the cultivation of management expertise over time that separates successful entrepreneurs from unsuccessful ones. Eckhardt and Shane believe that information asymmetry is more of a differentiator than personality traits. Information possessed by individuals affects their perceptions of the existence of opportunities and threats as well as their views about how these opportunities can be harvested or problems solved (Eckhardt & Shane, 2003).

Individuals with expertise are a key element to new venture creation (Gartner, 1985). This is because new ventures need unique and dynamic capabilities to survive (Zahra, Sapienza, & Davidsson, 2006). The evolutionary theory of the firm describes dynamic capabilities as the ability of the firm to not only figure out how to solve problems in a dynamic environment by cultivating most of its capabilities, but also change the composition of those capabilities or the capabilities themselves to solve problems (Zahra, Sapienza, & Davidsson, 2006).

The innate level of skill, intimate market knowledge, experience and resourcefulness of the entrepreneur is what sets him apart (Stevenson & Harmeling, 1990). Skills are the most critical aspects of managing for the unknowable future, according to Stevenson and Harmeling.

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Clearly the challenge of bringing a business to fruition is laden with complexity and requires that the entrepreneur must have firm command of intricate business management competencies. It is these cognitive abilities that enable some people to make sense of complex situations quicker than others and connect the dots between environment changes, market trends and customer needs (Mitchell, et al., 2007).

In the same way that countries with the most capital are more productive (Holte, 1987), firms with the most capital are also more productive (Berry, et al., 2002) similarly, individuals with the most capital can also be more productive (Moog, 2002). The resource based theory as postulated by (Stevenson & Harmeling, 1990) can be extended beyond just financial resources to include human capital as a resource as well (Alvarez & Busenitz, 2001).

Eckhardt and Shane extend their information asymmetry hypothesis by advancing the argument that entrepreneurs possess a superior understanding of the market place and bring this to fruition through exploitation (Eckhardt & Shane, 2003). This implies that the entrepreneurs have cultivated relationships, information and expertise to (a) identify the opportunity presented by such information asymmetry and (b) fully take advantage of it. This provides an explanation as to why the median age of successful entrepreneurs is forty-one and why the median years of work experience is twenty (Greene, 2005).

What takes the longest time to build as an entrepreneur is not just the human capital needed to identify and seize opportunities, encounter and solve problem, anticipate changes and make decisions in a dynamic environment (Zahra, Sapienza, & Davidsson, 2006). Rather, it is the social capital required to have a large enough network of both strong and weak relationships (Stevenson & Jarillo, 1990) of people who know you, believe in your expertise and trust your integrity to give you a shot (Davidsson & Honig, 2003). Access to markets is often a social capital problem and is not easily solved by access to financial capital.

This does not take away the primacy and importance of resources (Alvarez & Busenitz, 2001). It is merely intimating that financial capital has to be combined with human and social capital and interwoven or assembled into a venture to fully realise its potential (Alvarez & Busenitz, 2001).

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The differences in the ability to use combinations of financial, human and social capital in a synergistic way, inside a venture, is what sets entrepreneurs apart from each other. This is ultimately what a dynamic capability attempts to bring to realisation.

In their seminal work on the differences in human and social capital of nascent entrepreneurs, Davidsson and Honig found that initial endowments in both these areas play a significant role in the rate of success. Factors such as previous start-up experience, having taken a business class, belonging to a business chamber, bonding social capital such as having friends or family in business and bridging social capital based on weak ties were all strong factors in predicting the level and frequency of gestation (Davidsson & Honig, 2003).

This complements the work done by Stevenson and Jarillo on the importance of both strong and weak relationships in business (Stevenson & Jarillo, 1990). Additionally, Davidsson and Honig found that explicit human capital (years of schooling) and tacit human capital (years of work experience) were weak indicators of nascent activity (Davidsson & Honig, 2003). Only tacit human capital gained from previous start up had a significant influence on nascent activities. This suggests that once you've started a business at-least once, you are likely to do it again.

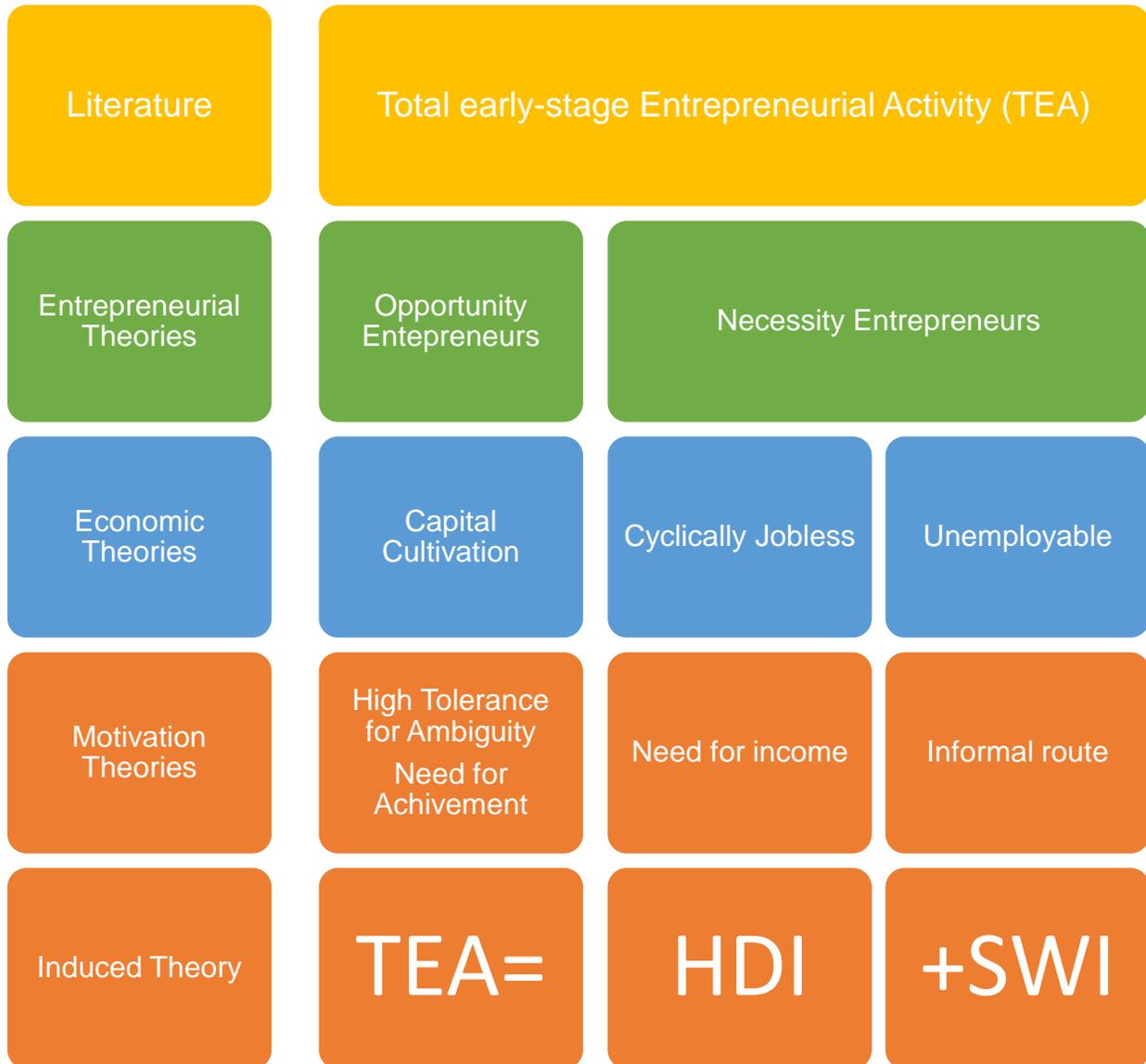
On social capital however, Davidsson and Honig found that having bonding social capital such as being encouraged by friends in business to start a business doubled the odds that you would ultimately start a business and follow through on the necessary activities to make that business successful (Davidsson & Honig, 2003). This suggests that peer to peer role modelling and mentorship are strong determinants of nascent activity. Entrepreneurial roots within the family play a decisive role in nascent activities and are a good predictor of success (Wadhwa, Aggarwal, Holly, & Salkever, 2006)

Finally, there are two ontological views on entrepreneurship as such. One view, predominant in the American entrepreneurial philosophies is that entrepreneurship opportunities exist regardless of the entrepreneur and are just waiting for the savvy to take advantage. The other view is that entrepreneurial opportunities are enacted depending on the entrepreneur's cognitive abilities or human capital (Venkataraman, Sarasvathy, Dew, & Forster, 2012). Either way, the dominant literature suggests that combined capital is the ultimate determinant of successful TEA.

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## 2.3 Literary Depiction



**Figure 2: Literature Depiction Model.**

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### 2.4 Conclusion

The literature has shown, comprehensively, that entrepreneurship creates long-term economic value through wealth and employment creation (Murphy, Liao, & Welsch, 2006). That the most impactful type of entrepreneurial activity is that which is undertaken by employees within organisations (Harmina, Dumicic, & Cingula, 2014). That most jobs in the economy are created by nascent entrepreneurs (Birch, 1981) (Henrekson & Johansson, 2009).

The literature also shows that unemployment can be a condition independent of the unemployed and rather a market inefficiency phenomenon (Barker, 2007) (Shapiro & Stiglitz, 1984) (Holte, 1987) (Carlsson, Eriksson, & Gottfries, 2006) (Mortensen & Pissarides, 1994). That the effects of youth unemployment have a bearing on adult unemployment and that this is a serious problem (Mroz & Savage, 2006) (National Treasury, 2011).

The literature also shows that not all entrepreneurial activities are of the same value. That instead entrepreneurship has to be directed towards job intensive activities (Harmina, Dumicic, & Cingula, 2014) (Moog, 2002) (Greene, 2005) (Schumpeter, 1934) (Kirzner, 1999). This has demonstrated that necessity entrepreneurship activities add very little value in the economy, mostly because nascent activities by unemployable individuals occurs in the informal sectors (Berry, et al., 2002).

The literature also shed a lot of light on what makes nascent entrepreneurship successful. Most of the literature attributes this to individual cognitive abilities and social capital (Gartner, 1985) (Zahra, Sapienza, & Davidsson, 2006) (Stevenson & Jarillo, 1990) (Moog, 2002) (Eckhardt & Shane, 2003). That perhaps resources are important in the gestation process (Alvarez & Busenitz, 2001).

The literature shows that what buoys nascent activities and makes entrepreneurs successful is peer-to-peer role modelling and mentorship as well as family history of entrepreneurship (Wadhwa, Aggarwal, Holly, & Salkever, 2006). Perhaps the most valuable insight from the literature is that differences in the ability to use combinations of financial, human and social capital synergistically, inside a venture, is what sets entrepreneurs apart from each other. This study seeks to determine, empirically and add to literature, the factors that influence and sustain TEA.

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**Table 1: Literature Summary**

<b>Theory Domain</b>	<b>Scholars</b>	<b>Article</b>
<b>Entrepreneurship</b>	(Murphy, Liao, & Welsch, 2006)	A Conceptual History of Entrepreneurial Thought
	(Gartner, A Conceptual Framework for describing the Phenomenon of New Venture Creation, 1985)	A conceptual framework for describing the phenomenon of New Venture Creation
	(Zahra, Sapienza, & Davidsson, 2006)	Entrepreneurship and Dynamic Capabilities
	(Harmina, Dumicic, & Cingula, 2014)	The relationship between type of entrepreneurial activities and GDP per capita
	(Stevenson & Harmeling, 1990)	Entrepreneurial Management's Need for a more Chaotic Theory
	(Feldman, 2001)	Firm Formation in a Regional Context.
	(Simpheh, 2011)	Entrepreneurship Theories and Empirical Research
	(Henrekson & Johansson, 2009)	Gazelles as Job Creators
	(Moog, 2002)	Human Capital and its influence on Entrepreneurial Success
	(Porter, Clusters and the New Economics of Competition, 1998)	Clusters and the New Economics of Competition
	(Eckhardt & Shane, 2003)	Opportunities and Entrepreneurship
	(Stevenson & Jarillo, 1990)	A Paradigm of Entrepreneurship
	(Martin & Osberg, 2007)	Social Entrepreneurship: The case for Definition

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	(Hessels, van Stel, Brouwer, & Wennekers, 2007)	Social Security Arrangements and Early-Stage Entrepreneurial Activity
	(Gartner & Baker, 2010)	A Plausible History of exploration of Stevenson's definition of Entrepreneurship
	(Alvarez & Busenitz, 2001)	The Entrepreneurship of resource-based theory
	(Venkataraman, Sarasvathy, Dew, & Forster, 2012)	Reflections on the 2010 ARM Decade Award: Wither the promise? Moving forward with Entrepreneurship as a Science of the Artificial
	(Greene, 2005)	Youth Entrepreneurship: Latent Entrepreneurship, Market Failure and Enterprise Support
	(Birch, 1981)	Who creates jobs
<b>Economics</b>	(Shapiro & Stiglitz, 1984)	Equilibrium Unemployment
	(Holte, 1987)	Theory of Unemployment
	(Gregg, 2001)	Impact of Youth Unemployment on Adults
	(Mortensen & Pissarides, 1994)	Job Creation and destruction in the theory of unemployment
	(Pissarides, 1985)	Taxes, Subsidies and Equilibrium Unemployment
	(Carlsson, Eriksson, & Gottfries, 2006)	Testing Theories of Job Creation
	(Krugman, 1990)	Increasing Returns and Economic Geography
	(Kirzner, 1999)	Creativity of Alertness
	(Klepper, 1996)	Entry, Exit, Growth and Innovation over the Product Life Cycle

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<b>Management, Business and Marketing</b>	(Taleb, 2007)	Black Swans and the Domains of Statistics
	(Lyne & Roth, 2004)	Institutional Arrangements for Farm Workers in FWES.
	(Christensen & Bower, 1996)	Customer Power, Strategic Investment and Failure of Leading Firms
	(Berry, et al., 2002)	The Economics of SMME in South Africa
	(Kotler & Zaltman, 1971)	Social Marketing: An Approach to Planned Social Change
	(Porter, 1996)	What is Strategy?
	(Davidsson & Honig, 2003)	The role of Social and Human Capital among Nascent Entrepreneurs
<b>Motivation, Culture and Psychology</b>	(Baskerville, 2003)	Hofstede never studied culture
	(Rotter B. J., 1966)	Internal and External Control of Reinforcements
	(Ogunleye, Self Efficacy, Tolerance for Ambiguity and Need for Achievement as Predictors of Entrepreneurial Orientation among Entrepreneurs in Ekiti State, Nigeria , 2014)	Self-Efficacy, Tolerance for Ambiguity and Need for Achievement
	(Mitchell, et al., 2007)	The Central Question in Entrepreneurial Cognition
	(De Vries, 1995)	Anatomy of the Entrepreneur
	(Wadhwa, Aggarwal, Holly, & Salkever, 2006)	Anatomy of an Entrepreneur: Family Background and Motivation

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### 3. Chapter 3: Research Questions

#### 3.1 Introduction

In South African, solving the problem of unemployment means creating jobs for the unskilled and inexperienced (National Treasury, 2011). This means creating jobs in those economic sectors that have the highest absorption rate for the unskilled and inexperienced. We know, from economic history, that the lowest level of unemployment in South Africa was 7.68 percent, a level last achieved in 1950 when industry (agriculture, mining and manufacturing) made up 55 percent of South Africa's Gross Domestic Product (Bureau of Census and Statistics, 1960).

Today, industry makes up only 28 percent of South African GDP (SARB, 2014) and broad based unemployment is at an all-time high level of 40 percent (Stats SA, 2014). There are several possible explanations for this;

- a.) The shift towards a more services oriented economy caused a shift in the demand for labour and skills that the education system has simply failed to develop.

In South Africa, most of the unemployed are young people with limited literacy and numerical ability (Lee, Zuze, & Ross, 2005). This echoes the work done by (CDE, 2011) where they found that more than 59 percent of those looking for employment have never worked before and many had not completed high school.

- b.) That TEA has been low and of poor quality because it is generally undertaken by those who are uneducated and have fewer options but to start survivalist businesses.

There is not much total early-stage entrepreneurship activity taking place in South Africa and where businesses are created, they tend to be micro survivalist enterprises that do not scale (Berry, et al., 2002) and (Turton & Herrington, 2012).

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### 3.2 Purpose of Research

The purpose of this research is to investigate and understand the role played by total-early stage entrepreneurship activity (TEA) in economic development in general, but specifically in employment creation, particularly for the youth. The aim is to contribute to the growing literature, theories and body of knowledge on the role played by start-up enterprises in the economy. This will hopefully contribute to improved small business policies that ultimately lead to the cultivation of their collective economic contribution.

### 3.3 Research Objectives

The research objectives of this study are articulated in great detail in chapter 1 above, here they can be summarised as follows;

#### Research Objective 1:

To establish both the economic and non-economic determinants that drive TEA. It is important to establish those factors that make TEA successful and how this may relate to the levels of skills, experience and education of the would-be entrepreneur.

#### Research Objective 2:

To establish if TEA entrepreneurs actually create meaningful job opportunities. The question of whether or not early-stage entrepreneurs tend to create jobs, especially for young people, and how the choice of industry might affect this, needs to be determined empirically.

#### Research Objective 3:

To determine ways in which TEA can be cultivated and institutionalised. Without understanding those factors in the environment and culture that make successful TEA possible, it is impossible for policymaker to design policies and incentives that can reinforce such factors.

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It is on the basis of the above that this research paper advances the following propositions;

### 3.4 Research Propositions

#### Proposition 1

*Proposition statement 1: TEA is a positive function of the level of Human Development. The level of human development in terms of education, health and income should have a strong and positive effect of the level of entrepreneurship activity in a country.*

The proposition here is that human capital is fundamentally the most important factor that drives entrepreneurship in a country (Gartner, 1985), (Stevenson & Harmeling, 1990), (Alvarez & Busenitz, 2001), (Moog, 2002), (Eckhardt & Shane, 2003) and (Davidsson & Honig, 2003). Human capital here can be thought of as the innate skills and capabilities that individuals possess. It can also be extended in meaning to encompass such explicit characteristics as years of formal education and both attributes of physical and psychological health needed to do work.

#### Proposition 2

*Proposition statement 2: TEA is a positive function of GDP Per Capita. Higher personal incomes should have a strong effect on the level of entrepreneurship activity in a country.*

The proposition here is that higher per capita incomes should equate to higher incidents of TEA and gestation seeing as higher incomes help to solve the problem of access to capital (Davidsson & Honig, 2003). The logic is that in countries with high disposable income, aspirant entrepreneurs are (a) able to save some of the equity needed to bootstrap their enterprises (Winborg & Landstrom, 2001) and (b) have better access to credit and as such can access debt capital markets to raise the funding needed to start businesses.

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### Proposition 3

*Proposition statement 3: TEA is a function of Foreign Direct Investment (FDI). Higher FDI is expected to stimulate local supply chains and capital levels and have a strong effect on the level of demand for labour as well as entrepreneurship activity in a country.*

The proposition here is that higher Foreign Direct Investment leads to the creation of new industries or new industrial capacity. This additional capacity then stimulates the establishment of new ventures that enter the supply chain in support of such added capacity (Gartner, 1985). The operating logic is that FDI stimulates investment, which requires that more jobs are created to operate the additional capital (Berry, et al., 2002), which leads to more consumption expenditure, more taxes collected and yet more investment in a continuous cycle (Holte, 1987).

### Proposition 4

*Proposition statement 4: TEA is a negative function of state-led social arrangements measured using social welfare as a proxy index for levels of state intervention. Higher levels of social welfare are expected to have a negative impact on entrepreneurship activities in a country.*

The proposition here is that social welfare has a significant influence of gestation levels and is an important driver of entrepreneurship activity in a country (Hessels, van Stel, Brouwer, & Wennekers, 2007). Social welfare here can be thought of as the institutional arrangements of social security in the event of illness and unemployment. Naturally, generous social security provisions increase the opportunity cost of self-employment (Hessels, van Stel, Brouwer, & Wennekers, 2007) and may augur ill for nascent activities.

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## **4. Chapter 4: Research Methodology**

### 4.1 Introduction

This study investigates the relationship between TEA and levels of social welfare, HDI and overall Investment in a country. The study attempts to establish if TEA affects the rate of employment creation. It is on the basis of this that a quantitative methodology was selected and Grounded Theory used with a view of taking an inductive approach (Saunders, Lewis, & Thornhill, 2012) to explore new insights and interpretations on what influences TEA levels and how these influences may be institutionalised.

This is a longitudinal study based on secondary data sources from international agencies that specialise in economic data collection. The data is ordinal data from a population of 73 international countries, including a number of OECD (Organisation for Economic Co-operation and Development) countries many of whom are part of the World Bank and the International Monetary Fund (IMF), which made it possible to corroborate the data.

The data was largely used on a Census basis, where the entire population was taken into account and there was no sampling as such (Saunders, Lewis, & Thornhill, 2012). However, where the data was not always available for all countries in the population, then the sample was accordingly adjusted to countries with data availability for specific statistical inferences.

### 4.2 Research Design

#### 4.2.1 Inductive Approach

In taking an inductive approach, Grounded Theory is used to collect and interpret data so as to develop inductively a new theory based on the data (Saunders, Lewis, & Thornhill, 2012). This is particularly appropriate when one adopts the Interpretivism philosophical approach to research, where the social actors (individuals) are considered to interpret and assign meaning to their daily experiences and in turn use the emergent understanding to make decisions.

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### 4.3 Methodology

#### 4.3.1 Approach

Data from the GEMs Report on Entrepreneurship Activity was correlated to the OECD's Social Welfare and United Nation's Human Development Index, which is a composite statistic accounting for, among other things, levels of education and per capita incomes. Simultaneously, on a multi-correlation equation, it was correlated to the level of economic investment in those economies. This made it possible to test the proposition that TEA is a function of the level of human development and capital stock available for investment in a country.

#### 4.3.2 Qualitative Research

The focus of this research was to use data to inductively establish a theory on the economic and non-economic determinants for TEA levels. Most of the data used in this research in ranked (ordinal) data (Saunders, Lewis, & Thornhill, 2012) for the variables (TEA level), (SWI level), (HDI rank) GDP per capita and FDI. All of these variables were primarily measured numerically and analysed using a range of statistical techniques.

Qualitative research is considered the most appropriate methodology here because the purpose was to statistically test the relationship between the dependent variable (TEA) and independent variables (SWI level), (HDI rank), (GDP per capita) and (FDI level) and then compare the multiple regression outcomes across countries, over a period of time, to establish implications.

#### 4.3.3 Explanatory Study

This study is considered an explanatory study because it sort to explain a causal relationship between variables (Saunders, Lewis, & Thornhill, 2012). At the very least an explanatory study should be able to establish the existence or non-existence of a correlation between the variables observed. Even at best, no study except scientific experimentation, can prove empirically the existence of a causal relationship between two or more variables.

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### 4.3.4 Longitudinal Study

This study not only tracked the causal or at-least correlation relationship between the dependent and independent variables, it did so over multiple periods of time. This makes the study a bit more robust in that we can tell if the relationship with any of the variables has become weaker or stronger over time. The ability to study the relationship and how it has evolved over time is considered the main strength of longitudinal research (Saunders, Lewis, & Thornhill, 2012).

### 4.4 Unit of Analysis

The unit of analysis for this research report is the country TEA rank as indicated by the Global Entrepreneurship Monitor (GEM) report over the period 2014. The TEA rank is a proxy for the level of entrepreneurship in the country. This can be said to be an indicator of both interest in entrepreneurship as a career choice and an indication of capability of adults between the ages of 18 and 65 to be entrepreneurial.

Even though TEA is the unit of analysis, it is observed in relation to SWI level, HDI rank as well as level of FDI and GDP per capita in the studied countries. The idea was to study the movement of these variables relative to each other over the reviewed period.

### 4.5 Population

The total population is comprised of all the countries studies by the GEM for purposes of their entrepreneurship monitoring report. The GEM report is a survey based study encompassing 73 economies and more than 200 000 adults. The studied countries make up roughly 75 percent of the world's population and approximately 87 percent of global GDP.

The GEM report divides the studied countries into smaller comparable sub-categories. This measure of stratification attempts to create homogenous groupings to allow comparability. The two notable categories into which countries are stratified are Geographic regions and levels of economic development. In other words, this made it possible to compare the TEA levels in factor

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driven economies of Sub-Saharan Africa with innovation driven economies in Asia. This stratification allowed for greater comparison customisation to suite the researchers objectives.

### 4.6 Sample size and method

There are 195 sovereign independent states in the world (Zhan, 2015). This research report was based on GEM report, which report is a survey based study involving 73 of these sovereign states. From this perspective, this study looks into only 37 percent of the world economies. However, studied countries span five of the seven continents, make up roughly 75 percent of the world's population and approximately 87 percent of global GDP.

More than 200 000 adults participated in the GEM study, which is a remarkable number considering the narrow populace who make up nascent or TEA entrepreneurs globally (Singer, Amoros, & Arreola, 2015). For purposes of this study, this entire sample is used and as such there is no attempt to reduce the sample from the base GEM sample.

The GEM report stratifies the studied countries by geographical regions and levels of economic development. Facilitating great comparability as countries are easily homogenised to compare like situations with like circumstances.

### 4.7 Data Sources and Collection

Most of the data needed to complete this study was already in the public domain. Even though the data was developed by third parties for varying purposes, it could be used effectively to test theories referred to in this research document, as well as draw statistical inferences based on that data (Saunders, Lewis, & Thornhill, 2012). The intention of this study was to draw statistical evidence from the following sources;

- a. Bureau of Census and Statistics (UNISA)
- b. Bureau of Economic Research (Stellenbosch)
- c. South African Reserve Bank (SARB)

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- d. Statistics South Africa (Stats SA)
- e. Department of Trade and Industry and related institutions (DTI)
- f. National Treasury
- g. South African Revenue Service (SARS)
- h. Global Entrepreneurship Monitor (GEM)
- i. United Nations Human Development Unit (UN)
- j. International Monetary Fund (IMF)
- k. World Bank
- l. Central Banks of each of the countries in the study
- m. Organisation of Economic Co-operation and Development

The data was downloaded from the publications released monthly, quarterly and annually by these institutions. No surveys or interview questionnaire were required as this study was entirely based on secondary empirical data. There is no research instrument used or validated as this was unnecessary.

### 4.8 Data Analysis

Quantitative analysis is about conveying meaning and providing analytical information in an easily accessible way such as with charts, graphs and statistics tables, etcetera (Saunders, Lewis, & Thornhill, 2012). This research report used vast amount of quantitative data to describe the relationship between TEA, SWI and HDI as well as GDP per capita and FDI levels in the countries that were researched.

The data was initially laid out in the form of a data table for the year of analysis. This provides a visual analysis of how each of the dependent and independent variables stacked out for each country over the period of study. Secondly the data was laid out on several scatter plots to show the general direction and trajectory of the relationships being investigated for the year of review. This provides a useful visual indication of the expected outcomes in that the countries that participated in the 2014 GEM had substantively different levels of gestation on all indicators.

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A series of multiple bar charts have been used for purposes of stratified comparisons. Multiple bar charts are particularly effective in comparison of variable where the emphasis is on low or high values rather than precise values (Saunders, Lewis, & Thornhill, 2012). To show the relationship between the dependent variable and each of the independent variables, a scatter plot is used and the closer they points are to forming a straight line to stronger the relationship between the variables (Saunders, Lewis, & Thornhill, 2012).

To assess the strength of the relationship between each of the independent variables with the depended variable, Pearson's Product Moment Correlation Coefficient (PMCC) was used. In this case the reliability of the estimate of the dependent variable is a function of the strength of its relationship with the independent variable (Wegner, 2012).

To determine whether there was a causal relationship between the dependent and the independent variables, a regression analysis was performed. This was taken a step further by performing a multiple regression analysis to assess the overall strength of the entire equation using Ordinal Least Squares (OLS).

OLS as a statistical tool is used for estimating the coefficients in a model of a completely theoretical regression equation and seeks to minimise the sum of the squared residuals. OLS uses mainly linear formulas, which makes it a relatively easy estimation technique to use. OLS helps us estimate single independent variable models as proficiently as it does multivariate regression models. It is premised on how it can help evaluate the quality of a regression equation and the extent to which the estimated equations fit the actual data (Studenmund, 2011).

After the data was analysed in detail a summary was presented, which included the induced heuristic formula for explaining the factors that drive TEA up, which is partially borrowed from macroeconomics as well as Lewin's social psychology theory on behaviour. The induced theory is the outcome of the statistically tested quantitative data on TEA levels when regressed using SWI and HDI ranking together with Investment levels in each of the reviewed countries.

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### 4.9 Research Limitations

Although this research suggests that there is a weak relationship between TEA and the independent variables, with the exception of SWI, this is based on a relatively small sample of countries and a relatively narrow group of participants in the GEM studies. It is also subject to selection error on the part of the independent variable, notwithstanding that these variables were selected based on sound and widely accepted macroeconomic theories.

The report establishes that there is negative correlation between the dependent variable with the independent variables, however there is no empirical evidence to suggest causation. It could be that when other factors or independent variable are considered they prove more correlation than the variables chosen for this research.

Since the research is based on secondary data, any flaws pertinent to the original research and data collection will naturally permeate through to this research report. For example, not all countries that participated in the GEM studies in 2014 were participants in earlier studies, which means there is an incomplete data consequence for this longitudinal study.

For the foregoing reasons, whatever inferences are drawn from the research, especially the induced theory on TEA, will be limited by the context of the environment upon which it was based and the quality of the source of the primary data.

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### 5. Chapter 5: Research Findings

#### 5.1 Introduction

The Global Entrepreneurship Monitor (GEM) conducts research annually on several economies, looking at entrepreneurial activities within those economies; particularly, the Total early-stage Entrepreneurial Activities (TEA). For the calendar year 2014, their research was conducted on 73 countries from five continents, which together accounted for more 75 percent of the world's population and at-least 87 percent of global GDP.

Table 1 below shows a summary of the GEM reviewed economies; these economies are divided both continentally and by their stage of development.

From a visual inspection of Table 1, it is clear that the greatest concentration of Factor-driven economies is in Africa, that Efficiency-driven economies are concentrated in Latin America and that the European Union and North America are comprised mainly of Innovation-driven economies. This is consequential from an academic and policy perspective, in that; when wanting to enact policies or lessons that have worked elsewhere, policymakers and academic institutions should be cognisant of the structural, industrial and social factors pertinent to those economies.

**Table 2: Summary of GEM Economies**

	Factor-driven Economies	Efficiency-driven Economies	Innovation-driven Economies
Africa	Angola, Botswana Burkina Faso, Cameroon, Uganda	South Africa	
Asia & Oceania	India, Iran, Kuwait, Philippines, Vietnam	China, Indonesia, Kazakhstan, Malaysia, Thailand	Australia, Japan, Singapore, Taiwan, Qatar
Latin America & Caribbean	Bolivia	Argentina, Barbados, Belize, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Jamaica, Mexico, Panama, Peru, Suriname, Uruguay	Puerto Rico Trinidad and Tobago
European Union		Croatia, Hungary, Lithuania, Poland, Romania	Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Luxembourg, Netherlands, Portugal, Slovenia, Slovakia, Spain, Sweden, United Kingdom
Non-European Union		Bosnia and Herzegovina, Georgia, Kosovo, Russian Federation, Turkey	Norway, Switzerland
North America			Canada, United States

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## 5.2 Data Summary

**Table 3: Data Summary (sorted by highest to lowest TEA rating)**

### TEA Analysis

Country	TEA	HDI	FDI (\$ Billion)	GDP Per Capita (PPP)
Cameroon	37.4	0.504	\$ 0.159	\$ 1.43
Uganda	35.5	0.484	\$ 0.001	\$ 0.70
Botswana	32.8	0.683	\$ 0.043	\$ 7.12
Ecuador	32.6	0.732	\$ 0.033	\$ 6.32
Peru	28.8	0.734	\$ 0.084	\$ 6.55
Bolivia	27.4	0.667	\$ 0.001	\$ 3.24
Chile	26.8	0.832	\$ 12.999	\$ 14.53
Thailand	23.3	0.726	\$ 7.692	\$ 5.52
Burkina Faso	21.7	0.388	\$ 0.059	\$ 0.71
Angola	21.5	0.526	\$ 2.131	\$ 5.42
Guatemala	20.4	0.682	\$ 0.031	\$ 3.67
El Salvador	19.5	0.662	\$ 0.001	\$ 4.13
Jamaica	19.3	0.719	\$ 0.002	\$ 5.29
Mexico	19.0	0.756	\$ 5.201	\$ 10.23
Colombia	18.6	0.720	\$ 3.899	\$ 7.90
Philippines	18.4	0.660	\$ 6.990	\$ 2.87
Brazil	17.2	0.755	\$ 3.540	\$ 11.38
Panama	17.1	0.780	\$ 0.368	\$ 11.95
Qatar	16.4	0.850	\$ 6.748	\$ 97.52
Uruguay	16.1	0.793	\$ 0.013	\$ 16.81
Iran	16.0	0.766	\$ 0.605	\$ 5.32
China	15.5	0.727	\$ 116.000	\$ 7.59
Vietnam	15.3	0.638	\$ 1.150	\$ 2.05
Trinidad and Tobago	14.6	0.772	\$ 0.726	\$ 18.12
Argentina	14.4	0.836	\$ 2.117	\$ 12.57
Indonesia	14.2	0.684	\$ 7.077	\$ 3.49
United States	13.8	0.915	\$ 336.943	\$ 54.63
Kazakhstan	13.7	0.788	\$ 3.624	\$ 12.28
Australia	13.1	0.935	\$ 0.351	\$ 61.89
Canada	13.0	0.916	\$ 52.620	\$ 50.27
Barbados	12.7	0.785	\$ 0.093	\$ 15.34
Romania	11.4	0.793	\$ 0.077	\$ 10.00
Costa Rica	11.3	0.766	\$ 0.218	\$ 10.42

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<i>Lithuania</i>	11.3	0.839	\$	0.036	\$	16.44
<i>Singapore</i>	11.0	0.912	\$	40.660	\$	0.77
<i>Slovakia</i>	10.9	0.844	\$	0.123	\$	18.42
<i>United Kingdom</i>	10.7	0.907	\$	59.628	\$	45.60
<i>Portugal</i>	10.0	0.830	\$	6.664	\$	22.08
<i>Puerto Rico</i>	10.0	0.865	\$	0.001	\$	28.68
<i>Netherlands</i>	9.5	0.922	\$	40.809	\$	51.59
<i>Estonia</i>	9.4	0.861	\$	0.236	\$	19.72
<i>Hungary</i>	9.3	0.828	\$	3.381	\$	13.90
<i>Poland</i>	9.2	0.843	\$	0.524	\$	14.42
<i>Austria</i>	8.7	0.885	\$	7.690	\$	51.13
<i>Taiwan</i>	8.5	0.882	\$	12.697	\$	0.00
<i>Croatia</i>	8.0	0.818	\$	1.886	\$	13.51
<i>Greece</i>	7.9	0.865	\$	0.856	\$	21.68
<i>Bosnia and Herzegovina</i>	7.4	0.733	\$	0.002	\$	4.81
<i>Georgia</i>	7.2	0.758	\$	0.202	\$	3.67
<i>Belize</i>	7.1	0.715	\$	0.003	\$	4.72
<i>Luxembourg</i>	7.1	0.892	\$	4.307	\$	110.66
<i>Switzerland</i>	7.1	0.930	\$	16.798	\$	84.73
<i>South Africa</i>	7.0	0.658	\$	6.938	\$	6.48
<i>Sweden</i>	6.7	0.907	\$	12.156	\$	5.89
<i>India</i>	6.6	0.586	\$	9.848	\$	1.60
<i>Ireland</i>	6.5	0.916	\$	31.795	\$	53.31
<i>Slovenia</i>	6.3	0.880	\$	0.009	\$	23.96
<i>Malaysia</i>	5.9	0.779	\$	16.445	\$	10.93
<i>Norway</i>	5.7	0.944	\$	19.247	\$	97.36
<i>Finland</i>	5.6	0.883	\$	0.574	\$	49.54
<i>Denmark</i>	5.5	0.923	\$	10.952	\$	60.63
<i>Spain</i>	5.5	0.875	\$	30.688	\$	30.26
<i>Belgium</i>	5.4	0.890	\$	8.534	\$	47.52
<i>France</i>	5.3	0.888	\$	42.869	\$	42.73
<i>Germany</i>	5.3	0.916	\$	112.227	\$	47.63
<i>Russian Federation</i>	4.7	0.798	\$	56.438	\$	12.74
<i>Italy</i>	4.4	0.873	\$	23.451	\$	34.96
<i>Kosovo</i>	4.0	0.714	\$	0.001	\$	3.99
<i>Japan</i>	3.8	0.891	\$	113.629	\$	36.19
<i>Suriname</i>	2.1	0.715	\$	0.001	\$	9.93
<i>Kuwait</i>	1	0.816	\$	13.108	\$	48.93
<i>Latvia</i>	1	0.819	\$	0.137	\$	16.04
<i>Turkey</i>	1	0.761	\$	6.658	\$	10.53

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From a visual analysis of Table 2 above, there is no apparent pattern that can be shown or inference that can be conclusively drawn. However, when looking at the first (18) quartile of the economies listed by TEA rank from high to low, there is a clear bias towards Efficiency-driven and a leaning towards Factor-driven economies.

Six of the eleven Factor driven economies are represented in the first quartile, which is a 55 percent representation. Factor-driven economies also make up one-third (33.33 percent) of the economies in the upper quartile. The other twelve economies are all efficiency driven economies, of which eleven of the twelve (92 percent) represented economies are Latin American and Caribbean economies. Overall Latin American and Caribbean economies represent almost two-thirds of all upper quartile economies.

Yet the inverse is also true, European Nations make up nearly two-thirds of the bottom quartile nations in terms of TEA rank.

This presents us with a wonderful opportunity to analyse region specific correlations and establish if there are any region specific factors that may be influencing TEA.

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## 5.3 Descriptive Statistics

**Table 4: Descriptive Statistics**

<i>TEA</i>		<i>HDI</i>		<i>FDI (\$ Million)</i>		<i>GDP Per Capita (PPP)</i>	
<b>Mean</b>	13.75641026	Mean	0.769641026	Mean	14711.20513	Mean	19527.01324
<b>Standard Error</b>	1.401015608	Standard Error	0.020074876	Standard Error	5018.463953	Standard Error	3140.38751
<b>Median</b>	12.7	Median	0.766	Median	1886	Median	11384.68
<b>Mode</b>	5.3	Mode	0.916	Mode	0	Mode	#N/A
<b>Standard Deviation</b>	8.74933967	Standard Deviation	0.125367562	Standard Deviation	31340.29734	Standard Deviation	19611.71372
<b>Sample Variance</b>	76.55094467	Sample Variance	0.015717026	Sample Variance	982214237.6	Sample Variance	384619314.8
<b>Kurtosis</b>	0.48861909	Kurtosis	1.147983072	Kurtosis	6.178470307	Kurtosis	-0.588867924
<b>Skewness</b>	1.053560197	Skewness	-0.99576297	Skewness	2.654374418	Skewness	0.990517612
<b>Range</b>	33.6	Range	0.547	Range	116000	Range	61173.8536
<b>Minimum</b>	3.8	Minimum	0.388	Minimum	0	Minimum	713.1064
<b>Maximum</b>	37.4	Maximum	0.935	Maximum	116000	Maximum	61886.96
<b>Sum</b>	536.5	Sum	30.016	Sum	573737	Sum	761553.5164
<b>Count</b>	39	Count	39	Count	39	Count	39
<b>Confidence Level(95.0%)</b>	2.836207821	Confidence Level(95.0%)	0.040639462	Confidence Level(95.0%)	10159.34914	Confidence Level(95.0%)	6357.382148

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Table 3 above provides the descriptive statistics for the variables used in our statistical analysis. The descriptive statistics below have been used for purposes of this report.

**Arithmetic Mean (Average):** the arithmetic mean lies at the centre of a set of numeric data variables (Wegner, 2012). This can be found by summing all the values and then dividing by the number of values in the sum count (number of observations). The mean is useful because it provides a relative comparison measure of the difference between the lowest value, the highest value and the average of the numeric data.

**Median:** the median is the middle number of an ordered set of data. It divides an ordered set of data values into two equal halves where 50 percent of the data values lie above the median and 50 percent lie below it (Wegner, 2012). The advantage of the median over the mean is that it pacifies the effect of outliers. This is critical when working with economic data such as GDP and FDI because outliers are a norm with these data sets.

A median with a value close to the mean shows a more symmetric distribution of the data set (numeric values).

**Standard Deviation:** The standard deviation is the square root of the variance and expresses the dispersion from the central value of a random variable (Wegner, 2012). Even though the standard deviation is considered a relatively stable measure and is extensively used in further statistical analysis, it is susceptible to the effect of outliers.

**Skewness:** skewness describes the shape of a unimodal histogram for numeric data. It is important to know the shape of the histogram because it affects the choice of the central location and the dispersion measures to describe the data, which may distort statistical findings (Wegner, 2012). Pearson's coefficient of skewness that yield a value of +1 or -1 indicates excessive skewness in the data caused by outliers.

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## 5.4 Correlation Analysis

**Table 5: Correlation Analysis**

	<i>TEA</i>	<i>HDI</i>	<i>FDI (\$ Million)</i>	<i>GDP Per Capita (PPP)</i>
<b>TEA</b>	1			
<b>HDI</b>	-0.58643211	1		
<b>FDI (\$ Million)</b>	-0.269855957	0.314739917	1	
<b>GDP Per Capita (PPP)</b>	-0.498320594	0.782086857	0.347988981	1

The correlation coefficients for TEA, being HDI, FDI and GDP per capita are all negative. This shows that these variables are not strongly associated with TEA and that the relationship is not positive. Put differently, higher HDI, FDI and GDP all affect TEA negatively. Interestingly, the correlation coefficient for HDI and GDP per capita is strongly positive. This shows that well developed nations do well in terms of per capita incomes, but has absolutely nothing to do with TEA levels.

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## 5.5 TEA and HDI

Chart 1: TEA relative to HDI

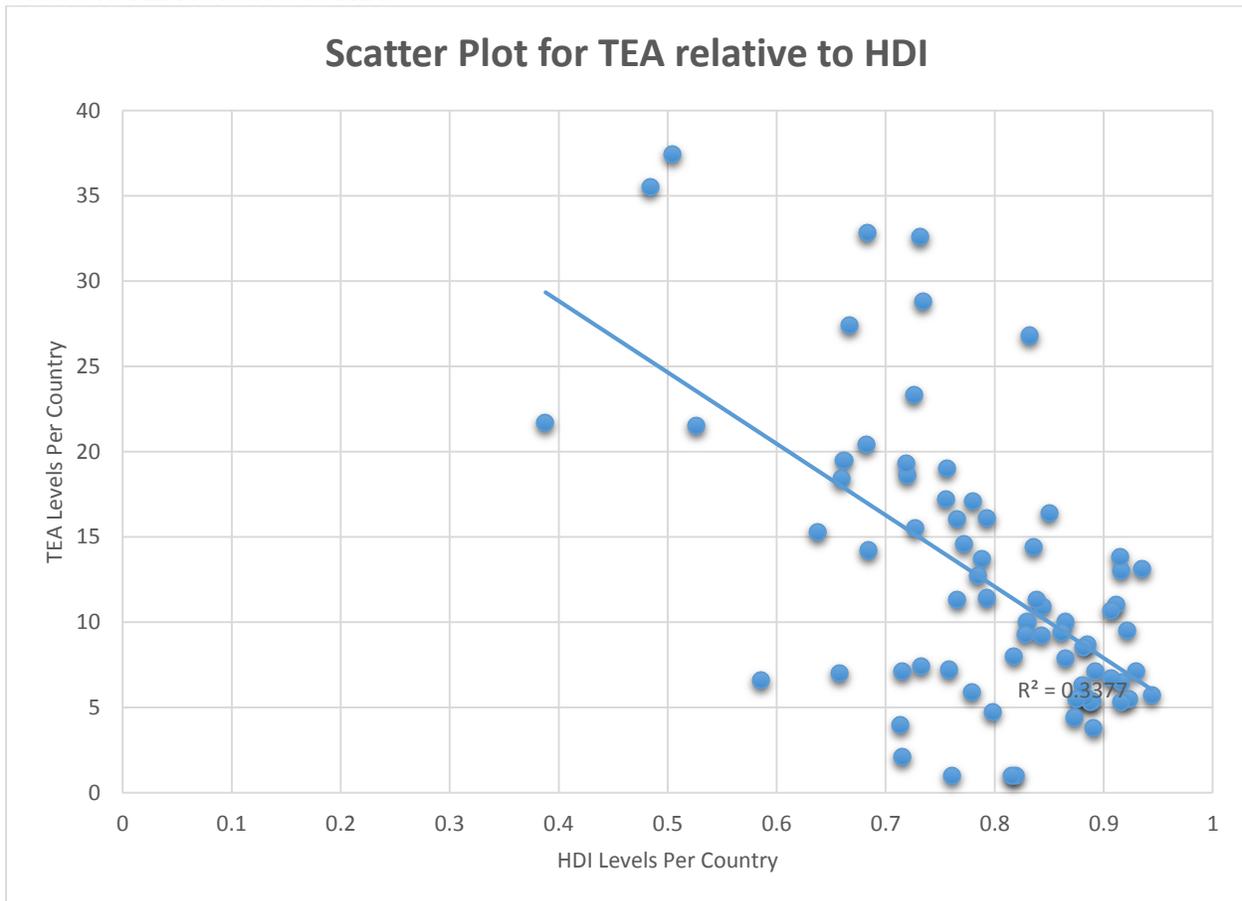


Chart 1 show a downward trajectory in the relationship between TEA and HDI. Although the data points follow the trend line, they are not clutter around it. This signals that the relationship is weak, which is further evidenced by the low r-squared score of 0.33. However, this shows a downward slope indication that as HDI levels increase (so the more developed as society is) TEA levels become low.

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**Chart 2: Reversed TEA relative to HDI relationship**

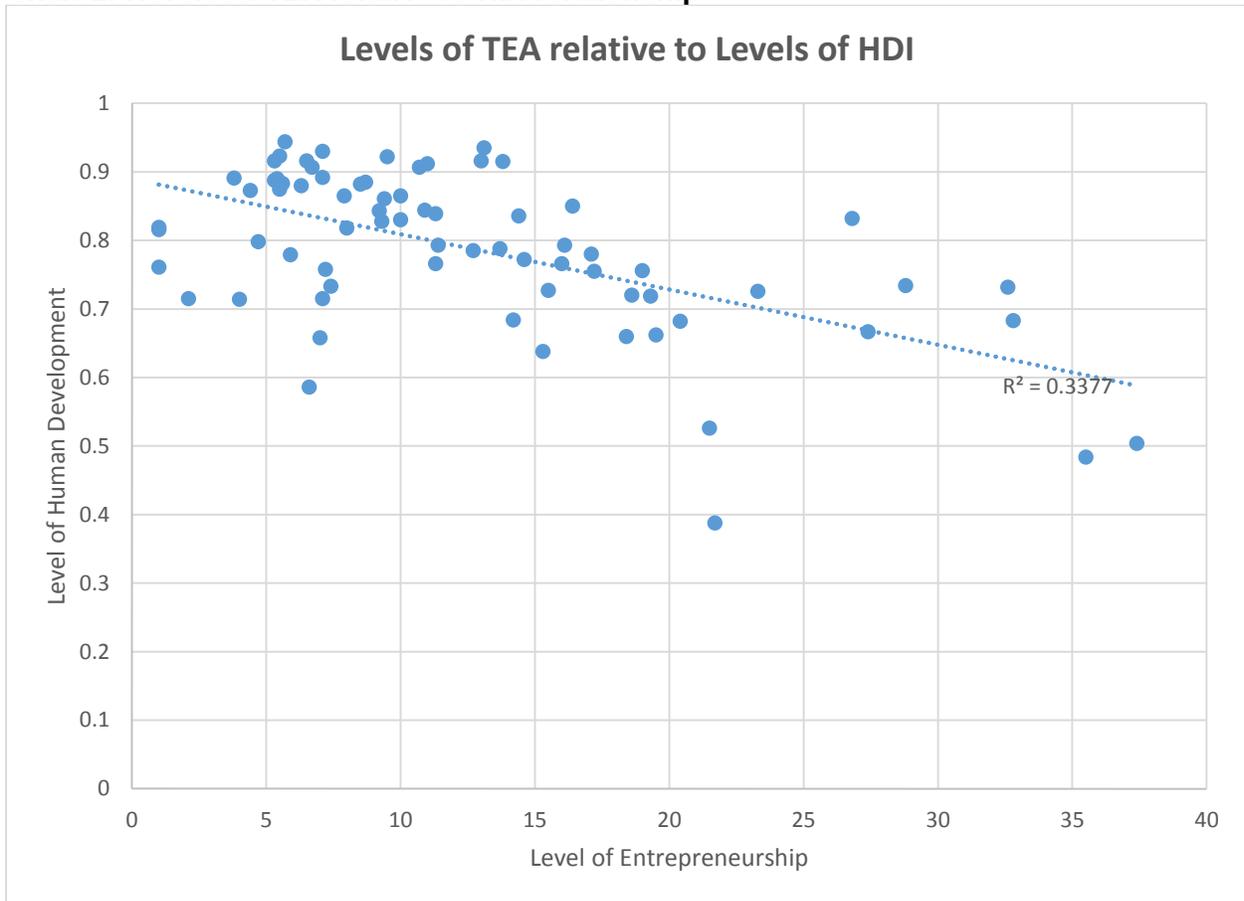


Chart 2 illustrates the same point as chart 1 only more poignantly. This chart shows that most economies have an HDI level above 7, where people are highly developed, yet have a TEA level less than 10. This means less than 10 percent of the adult population chooses to start a business in these well developed nations.

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**Table 6: Regression Analysis for HDI**

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.581154646							
R Square	0.337740722							
Adjusted R Square	0.328413127							
Standard Error	6.792204113							
Observations	73							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	1670.456544	1670.456544	36.20876609	7.01451E-08			
Residual	71	3275.516607	46.13403671					
Total	72	4945.973151						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	45.57835397	5.541034623	8.225603532	6.38107E-12	34.52984473	56.6268632	34.52984473	56.6268632
HDI	-41.86703467	6.957694238	-6.017372025	7.01451E-08	-55.74028295	-27.99378639	-55.74028295	-27.99378639

Determining the usefulness of the model by hypothesis testing for statistical significance:  $H_0: \beta_1 = 0$  and  $H_1: \beta_1 \neq 0$ . Where  $\beta_1$  is Levels of HDI. To test for significance, means rejecting the  $H_0$  only if F-stat value lies above the F-crit. F-crit (0.05, 1, 73). Rejecting  $H_0$ , would make the model statistically significant.

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## 5.6 TEA and GDP Per Capita

**Chart 3: TEA relative to GDP Per Capita**

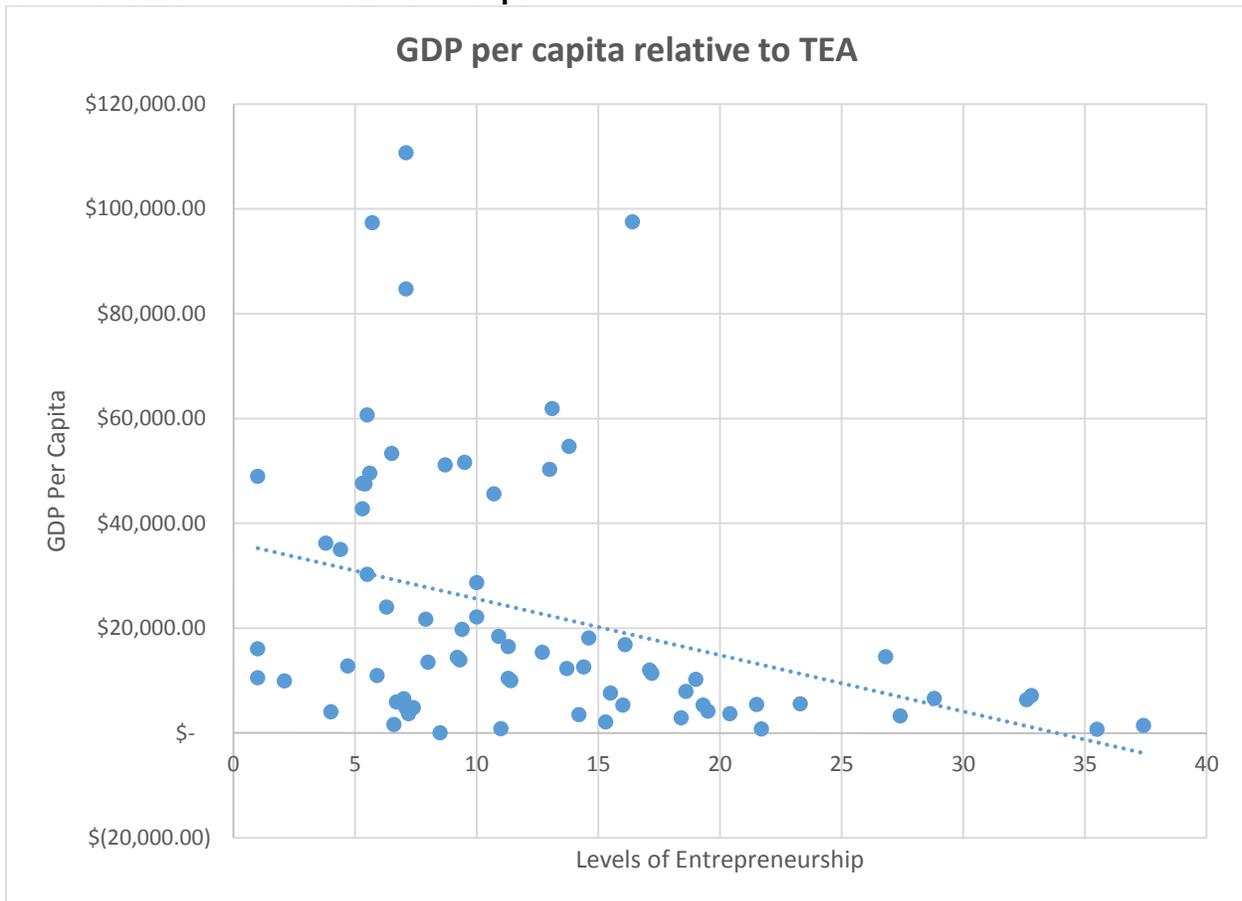


Chart 4 shows that higher per capita incomes do not positively affect or stimulate TEA. There is no level of correlation in chart 4. The trendline once more shows that the highest concentration of TEA entrepreneurs 10 – 20 percent is made up of economies that generate less than US\$20 thousand GDP per capita.

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**Table 7: Regression Analysis for GDP Per Capita**

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.354070038							
R Square	0.125365592							
Adjusted R Square	0.113046797							
Standard Error	7.805666323							
Observations	73							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	620.0548513	620.0548513	10.17677436	0.002117936			
Residual	71	4325.918299	60.92842675					
Total	72	4945.973151						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	15.24227521	1.237200603	12.31997073	2.66269E-19	12.77536727	17.70918315	12.77536727	17.70918315
GDP Per Capita (PPP)	-0.000116691	3.65791E-05	-3.190105698	0.002117936	-0.000189628	-4.37545E-05	-0.000189628	-4.37545E-05

Determining the usefulness of the model by hypothesis testing for statistical significance:  $H_0: \beta_3 = 0$  and  $H_1: \beta_3 \neq 0$ . Where  $\beta_3$  is Levels of GDP Per Capita. To test for significance, means rejecting the  $H_0$  only if F-stat value lies above the F-crit. F-crit (0.05, 1, 73). Rejecting  $H_0$ , would make the model statistically significant.

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## 5.7 TEA and FDI

**Chart 4: TEA relative to FDI relationship**

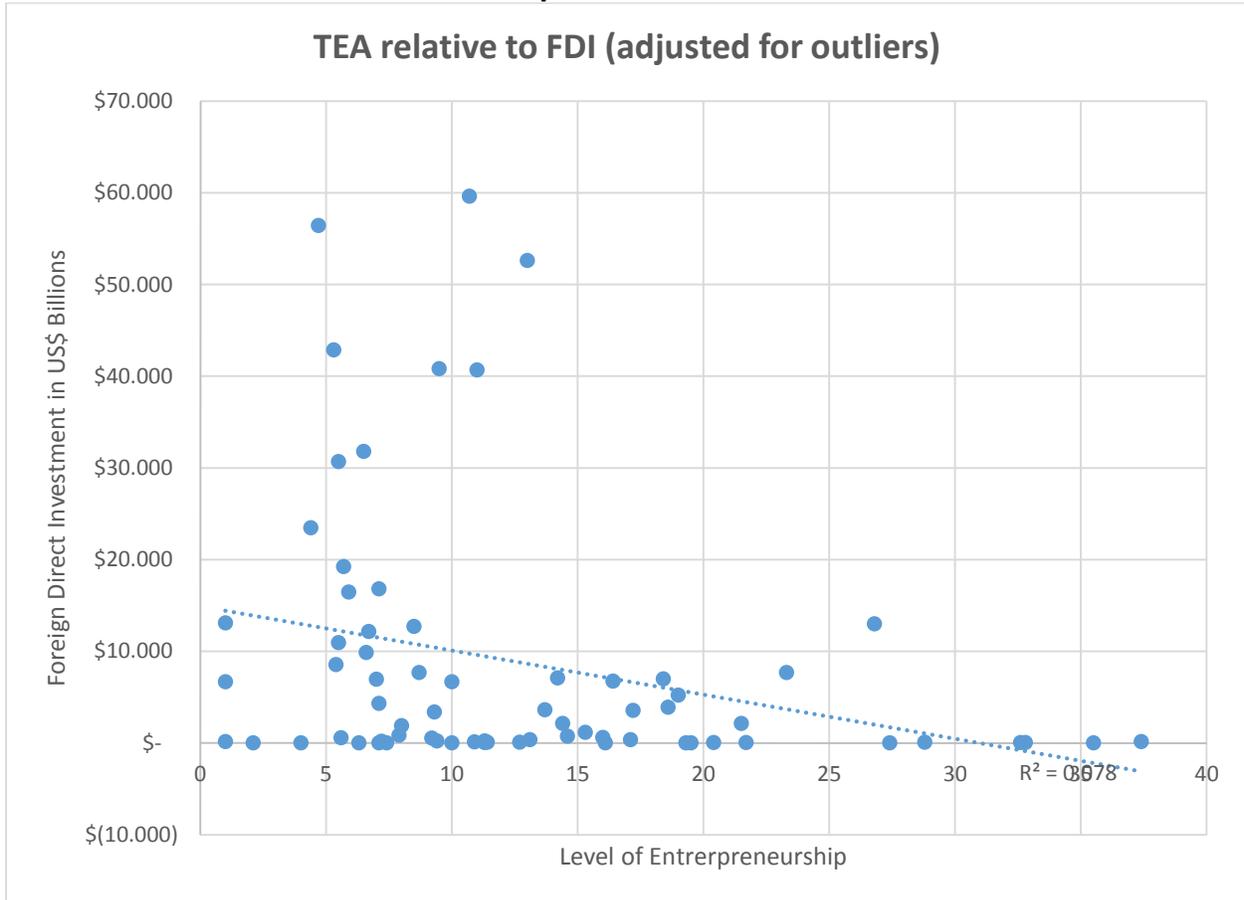


Chart 3 examines the relationship between FDI and TEA. Once more, high levels of FDI do not necessarily equate to high levels of TEA. The illustration here is that most economies have FDI of less than US\$10 billion and this does nothing to stimulate local interest in entrepreneurship.

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**Table 8: Regression Analysis for FDI**

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.120296214							
R Square	0.014471179							
Adjusted R Square	0.000590492							
Standard Error	8.285741263							
Observations	73							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	71.57406351	71.57406351	1.04254051	0.310697906			
Residual	71	4874.399087	68.65350827					
Total	72	4945.973151						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	12.96567042	1.040444078	12.46166969	1.52298E-19	10.89108386	15.04025699	10.89108386	15.04025699
FDI (\$ Million)	-2.18834E-05	2.14322E-05	-1.02104873	0.310697906	-6.4618E-05	2.08513E-05	-6.4618E-05	2.08513E-05

Determining the usefulness of the model by hypothesis testing for statistical significance:  $H_0: \beta_2 = 0$  and  $H_1: \beta_2 \neq 0$ . Where  $\beta_2$  is Levels of FDI. To test for significance, means rejecting the  $H_0$  only if F-stat value lies above the F-crit. F-crit (0.05, 1, 73). Rejecting  $H_0$ , would make the model statistically significant.

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**Table 9: Regression Analysis all coefficients**

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.583126517							
R Square	0.340036534							
Adjusted R Square	0.311342471							
Standard Error	6.877985867							
Observations	73							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	3	1681.811569	560.6038565	11.850414	2.38049E-06			
Residual	69	3264.161581	47.30668958					
Total	72	4945.973151						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	46.71573944	6.740585043	6.930517031	1.7771E-09	33.26864022	60.16283867	33.26864022	60.16283867
HDI	-43.67990603	9.242760207	-4.725850834	1.16971E-05	-62.11870813	25.24110394	-62.11870813	25.24110394
FDI (\$ Million)	8.372E-06	1.86324E-05	0.449325661	0.654604977	-2.87986E-05	4.55426E-05	-2.87986E-05	4.55426E-05
GDP Per Capita (PPP)	6.32232E-06	4.19046E-05	0.150874144	0.880515211	-7.7275E-05	8.99197E-05	-7.7275E-05	8.99197E-05

Determining the usefulness of the model by hypothesis testing for statistical significance:  $H_0: \beta_1 = \beta_2 = \beta_3 = 0$  and  $H_1$ : At-least one of the  $\beta_i \neq 0$ . Where  $\beta_1$ ,  $\beta_2$  and  $\beta_3$  are described above. To test for significance, means rejecting the  $H_0$  only if F-stat value lies above the F-crit. F-crit (0.05, 3, 73). Rejecting  $H_0$ , would make the model statistically significant.

5.8 Normal Probability Plot

Chart 5: Normal Probability Plot of Latin and Caribbean Nations

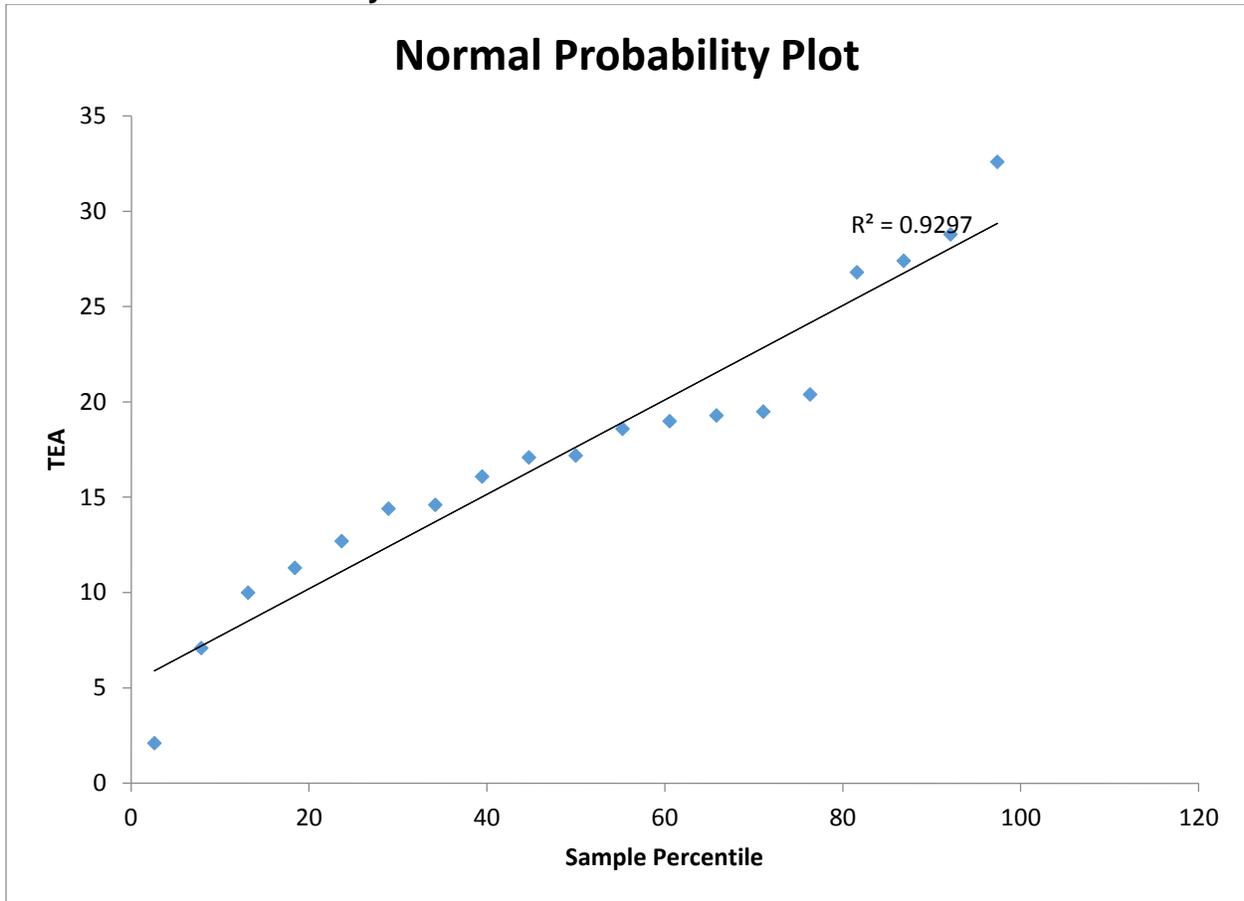


Chart 5 provides the normal probability plot for only the Latin American and Caribbean economies to see if the data follows the bell curve. The plotted points fit the trendline well, which illustrated that the data are normally distributed. This suggest that when comparing TEA levels and influences of TEA, a regional and stage of development comparison will work better than a worldwide comparison.

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## 5.9 TEA and Social Welfare

Table 9 below shows the descriptive statistics for TEA and social welfare among the developed economies from the GEM countries. This sample, made up of 26 countries, of the total 73 countries was selected based on countries low levels of TEA to see what could be the possible relationship with Social Welfare expenditure as a percentage of GDP.

Overall, Table 9 shows a median value around the mean, much less skewness compared to table 3 above, lower variance and lower kurtosis. These descriptors indicate an overall better fit between social welfare and TEA data, which allows for more accurate statistical analysis.

**Table 10: Descriptive Statistics [Social Welfare]**

<i>TEA</i>		<i>Social Welfare</i>	
<b>Mean</b>	7.911538462	Mean	23.95769231
<b>Standard Error</b>	0.549022262	Standard Error	0.890067812
<b>Median</b>	7.1	Median	23.6
<b>Mode</b>	5.3	Mode	30.7
<b>Standard Deviation</b>	2.799475226	Standard Deviation	4.538473142
<b>Sample Variance</b>	7.837061538	Sample Variance	20.59773846
<b>Kurtosis</b>	-0.515106684	Kurtosis	-0.957919021
<b>Skewness</b>	0.63275724	Skewness	0.177043577
<b>Range</b>	10	Range	15.6
<b>Minimum</b>	3.8	Minimum	16.3
<b>Maximum</b>	13.8	Maximum	31.9
<b>Sum</b>	205.7	Sum	622.9
<b>Count</b>	26	Count	26
<b>Confidence Level (95.0%)</b>	1.130732514	Confidence Level (95.0%)	1.833128973

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**Chart 6: TEA relative to Social Welfare as a Percentage of GDP**

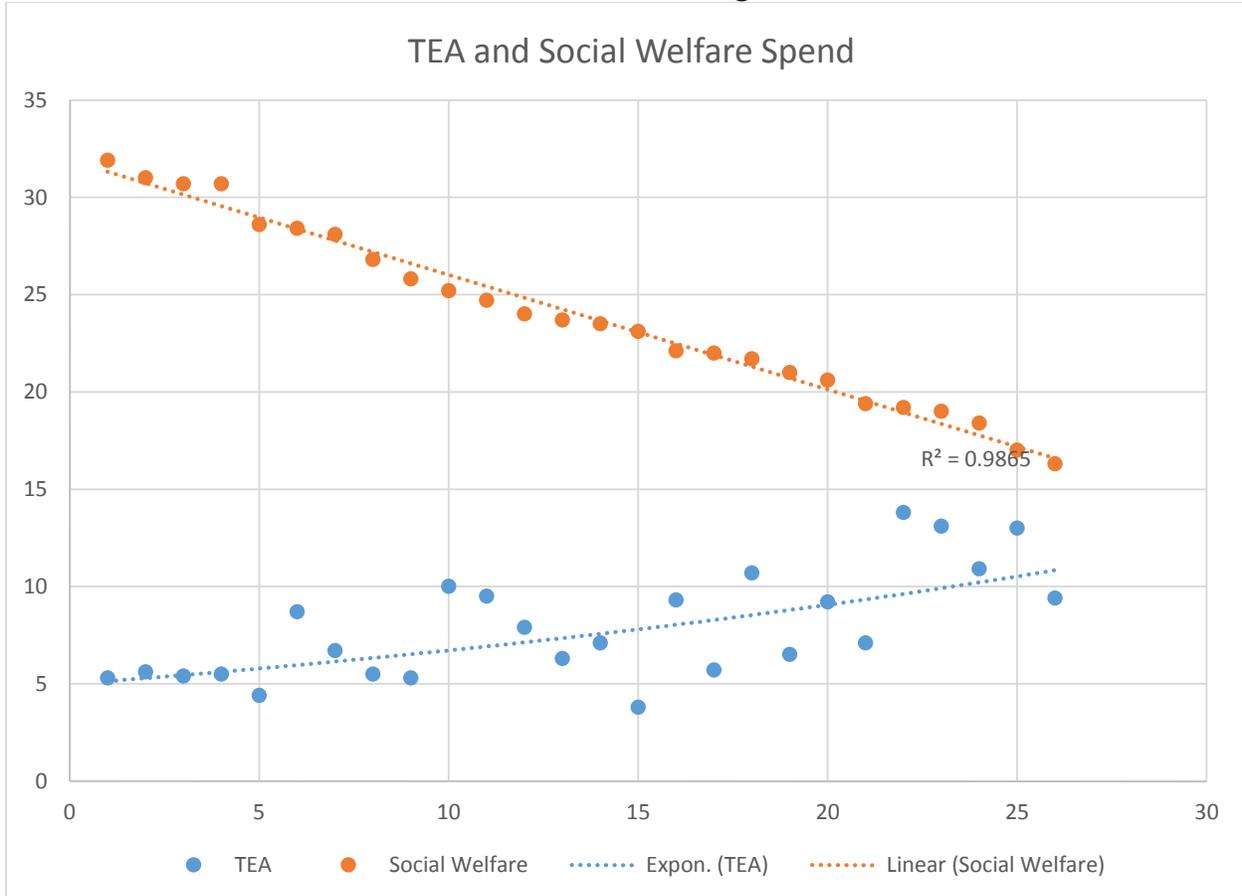


Chart 9 provides the clearest directional indication yet, of the movement in TEA levels relative to size of Social Welfare. It is clear that TEA is upward sloping (rising) while Social Welfare is downward sloping (falling). This suggest that economies with the highest social security provision will have the lowest incidents of TEA.

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**Table 11: Correlation Analysis [Social Welfare]**

	<i>TEA</i>	<i>Social Welfare</i>	<i>HDI</i>	<i>GDP Per Capita (PPP)</i>
<b>TEA</b>	1			
<b>Social Welfare</b>	-0.79819973	1		
<b>HDI</b>	-0.453664887	0.408423587	1	
<b>GDP Per Capita (PPP)</b>	-0.29642497	0.193604045	0.685509277	1

The correlation coefficients for TEA, being Social welfare, HDI and GDP per capita are all negative. This shows that these variables have an inverse relationship with TEA. Social Welfare in particular has a strong negative effect on TEA. Nearly 80 percent of low TEA levels can be explained by the existence of Social Welfare.

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**Table 12: Regression Analysis [Social Welfare]**

SUMMARY OUTPUT						
<i>Regression Statistics</i>						
Multiple R	0.79819973					
R Square	0.637122809					
Adjusted R Square	0.623165994					
Standard Error	2.997008981					
Observations	28					
<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	410.0274378	410.0274378	45.64958469	3.60238E-07	
Residual	26	233.5336336	8.98206283			
Total	27	643.5610714				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	24.13394497	2.312986179	10.43410687	8.68715E-11	19.37953379	28.88835615
Social Welfare	-0.662063763	0.09798992	-6.756447638	3.60238E-07	-0.863484928	-0.460642598

Determining the usefulness of the model by hypothesis testing for statistical significance:  $H_0: \beta_1 = 0$  and  $H_1: \beta_1 \neq 0$ . Where  $\beta_1$  is Levels of Social Welfare as a function of GDP. To test for significance, means rejecting the  $H_0$  only if F-stat value lies above the F-crit. F-crit (0.05, 1, 73). Rejecting  $H_0$ , would make the model statistically significant.

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## 5.10 Comparative Analysis

Chart 7: TEA Levels by country

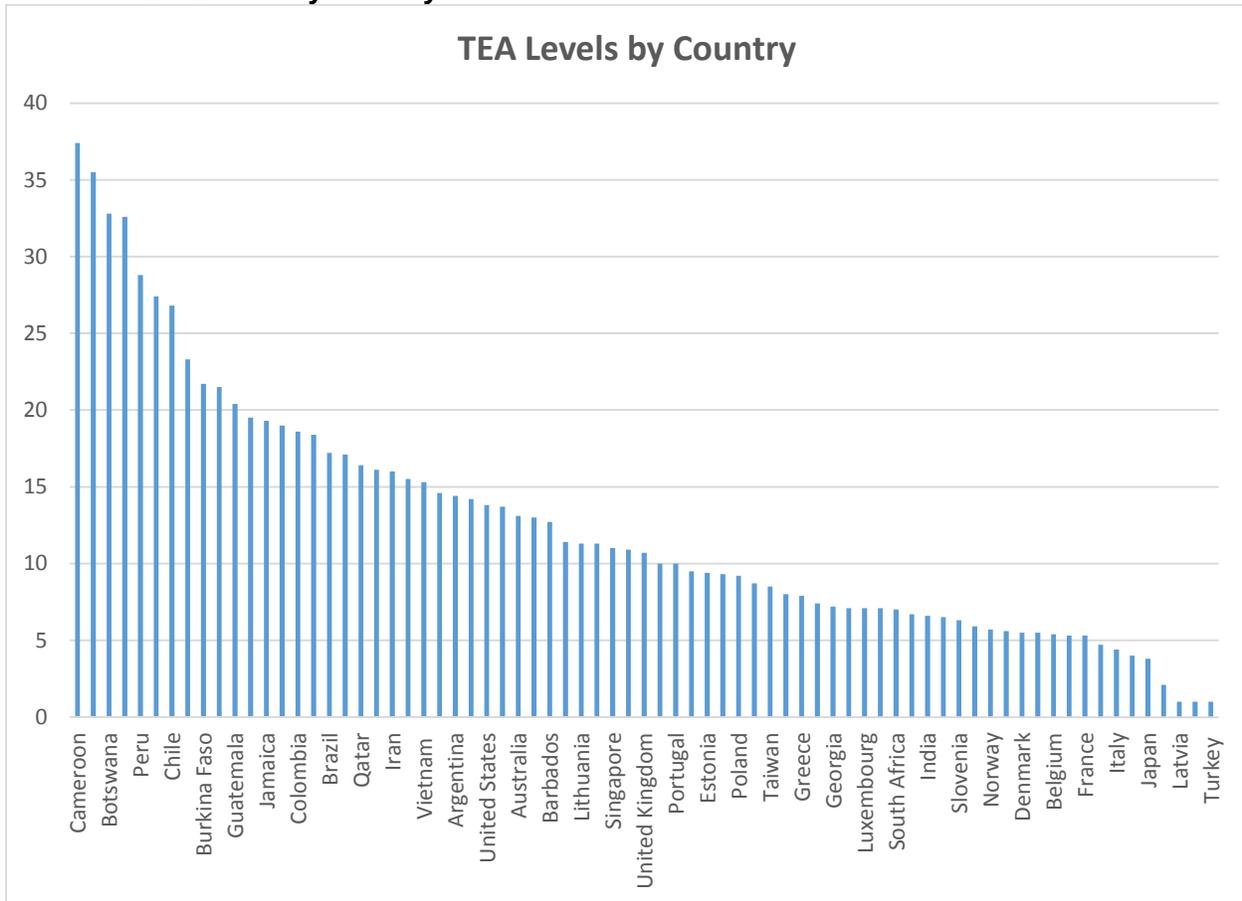


Chart 6 shows the list of countries ranked by TEA levels from left to right. The visual illustration of this chart is double-fold; the first aspect is to show the relative disparity between economies with high TEA and those with low TEA. The second aspect is to show the relative strong bias toward African, Latin American and Caribbean nations as you move from left to right along the chart. This chart should be compared to chart 7 and chart 8.

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**Chart 8: HDI by Country**

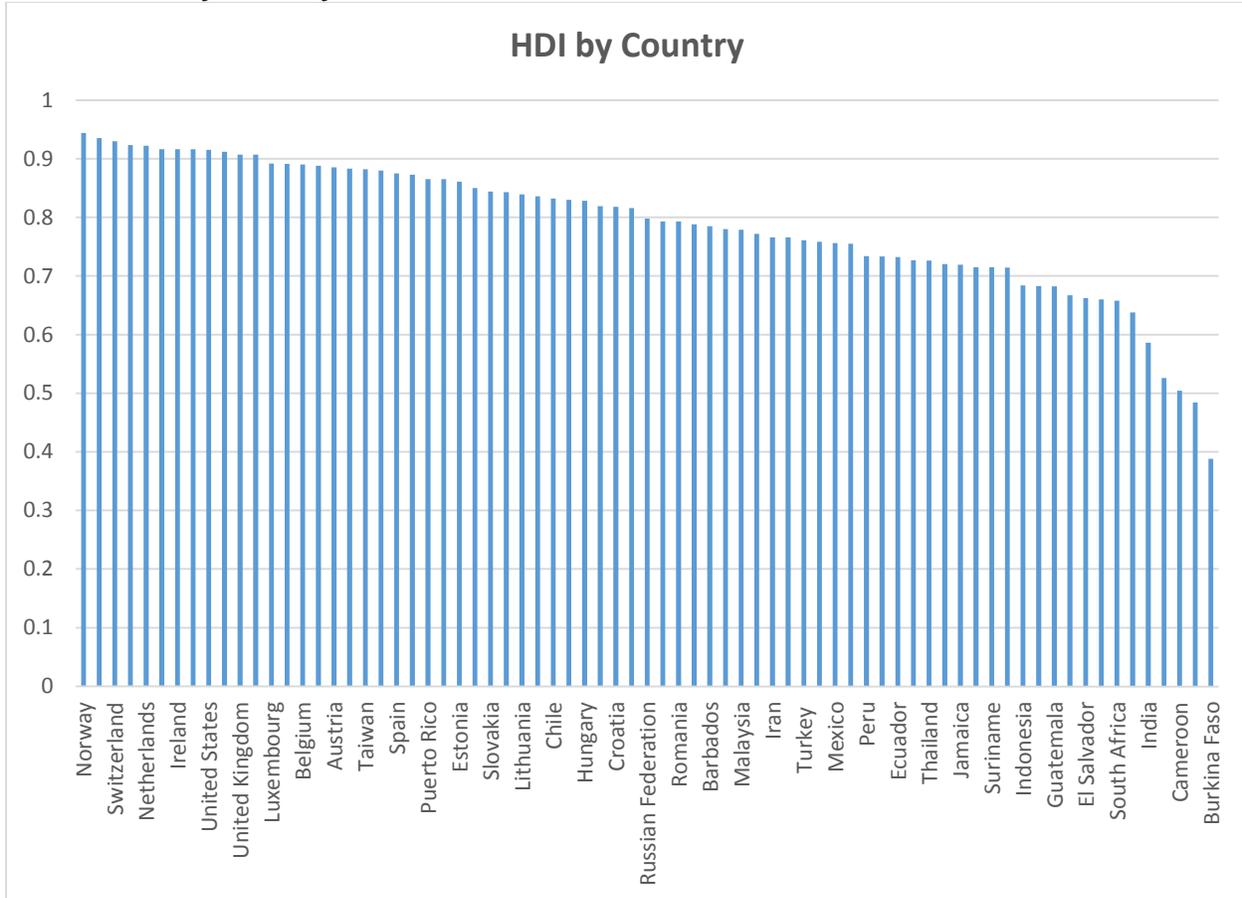


Chart 7 shows the list of countries ranked by HDI levels from left to right. The visual illustration of this chart is double-fold; the first aspect is to show how flat the relative level of development is among these economies. Secondly, when you take a visual analysis of this chart you can immediately see that it is a mirror image of chart 6 in that the nations with the lowest TEA rate are the nations with the highest HDI rank.

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**Chart 9: GDP Per Capita by Country**

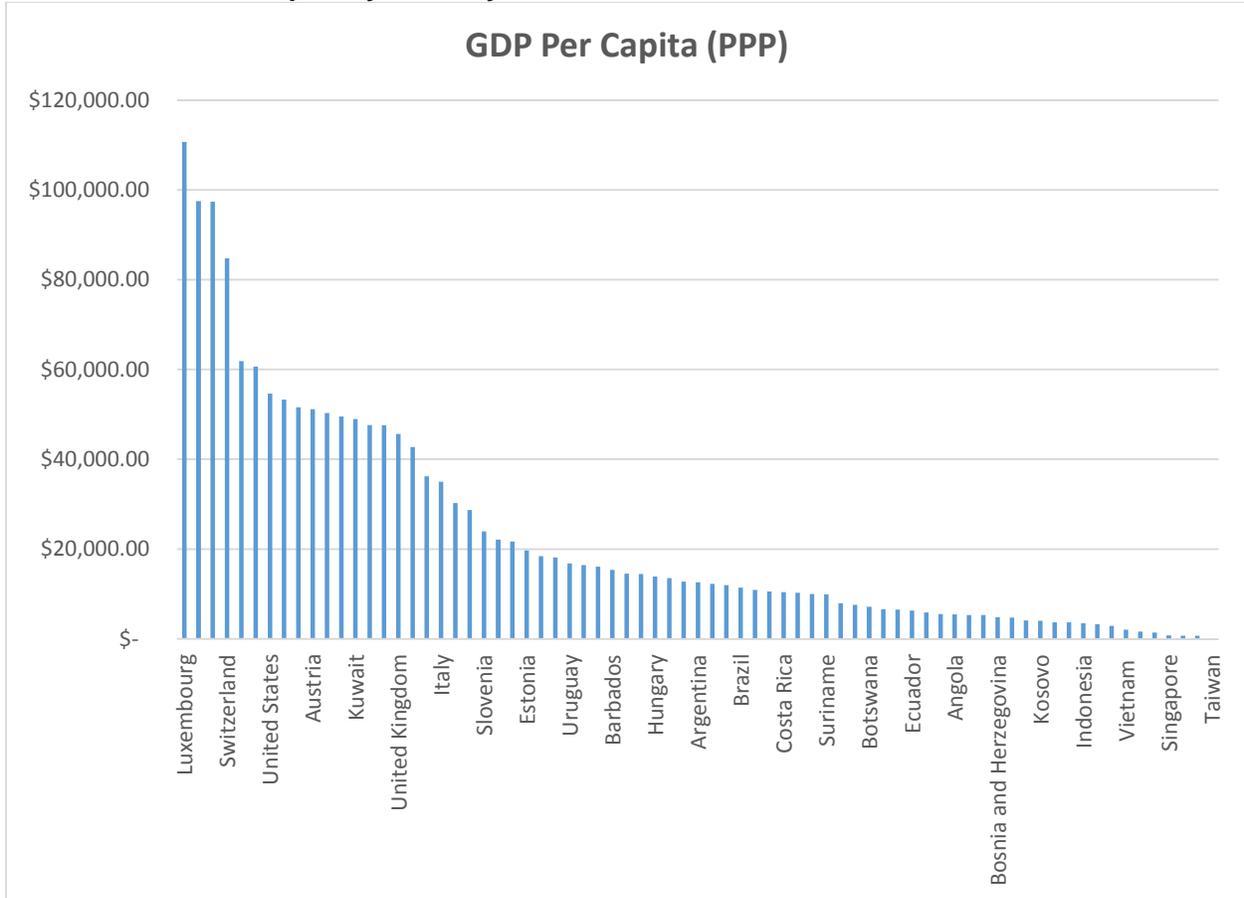


Chart 8 shows the list of countries ranked by GDP per capita from left to right. This chart shows a steep decline from left to right, which shows that the data are skewed to the right. Similarly, this shows the distortionary effect of the data. Once more, the economies with the highest GDP per capita, are the same as those with the highest HDI rank, which economies also have to lowest TEA levels.

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## 5.11 Inducted Model

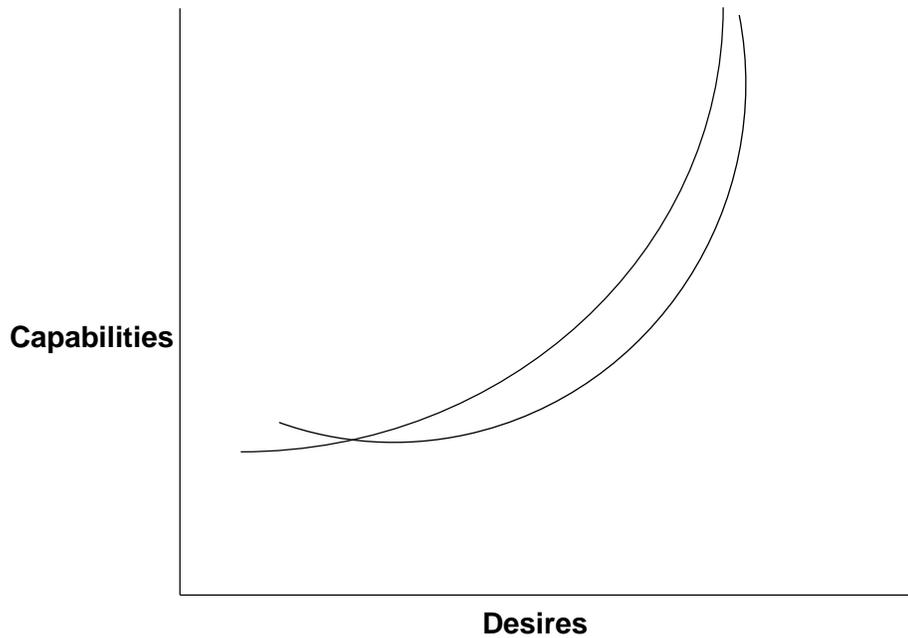


Figure 1: Desires and Capabilities Matrix

TEA is a function of the desires and capabilities of individual entrepreneurs, influenced by the social welfare structure of those economies. It is a negative function of GDP, a neutral function of HDI and a negative function of welfare expenditures. Such that;

$$TEA = f(SWI, HDI, GDP, FDI)$$

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## **6. Chapter 6: Discussion of Findings**

### 6.1 Introduction

In this chapter the research results are discussed in terms of the research propositions and in terms of the literature. The relationship between research objectives, literature, propositions, methodology and results is highlighted. This chapter shows how the various constructs relate to each other. For ease of understanding, the major heading in this chapter are arranged in terms of the research propositions.

#### 6.1.1 Data Source

The findings are based on correlation and regression analysis conducted based on the Global Entrepreneurship Monitor's (GEMs) annual research on several economies, looking at entrepreneurial activities within those economies; particularly, the Total early-stage Entrepreneurial Activities (TEA). For the calendar year 2014, their research was conducted on 73 countries from five continents, which together accounted for more 75 percent of the world's population and at-least 87 percent of global GDP.

Major sources of data were;

- Global Entrepreneurship Monitor 2014 Global Report [TEA]
- Organisation for Economic Cooperation and Development Social Exchange Report [SWI]
- United Nations Human Development Index [HDI]
- World Bank Worldwide GDP Report [GDP Per Capita]
- United Nations World Investment Report [FDI]

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### 6.1.2 Methodical Approach

The focus of this research was to use data to inductively establish a theory on the economic and non-economic determinants for TEA levels. Most of the data used in this research in ranked (ordinal) data (Saunders, Lewis, & Thornhill, 2012) for the variables (TEA level), (HDI rank), (GDP Per Capita), (FDI) and (Social Welfare). All of these variables were primarily measured numerically and analysed using correlation and regression analysis.

Data from the GEMs Report on Entrepreneurship Activity was correlated to the United Nation's Foreign Direct Investment and Human Development Index, which is a composite statistic accounting for, among other things, levels of education and per capita incomes. Simultaneously, on a multi-correlation equation, it was correlated to the level of Social Welfare as a percentage of GDP in those economies. This made it possible to test the propositions referred to in Chapter 3 and discussed below.

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### 6.2 Proposition 1

*Proposition statement 1: TEA is a positive function of the level of Human Development. The level of human development in terms of education, health and income should have a strong and positive effect of the level of entrepreneurship activity in a country.*

The proposition here is that human capital is fundamentally the most important factor that drives entrepreneurship in a country (Gartner, 1985), (Stevenson & Harmeling, 1990), (Alvarez & Busenitz, 2001), (Moog, 2002), (Eckhardt & Shane, 2003) and (Davidsson & Honig, 2003). Human capital here can be thought of as the innate skills and capabilities that individuals possess. It can also be extended in meaning to encompass such explicit characteristics as years of formal education and both attributes of physical and psychological health needed to do work.

This research report reviews the relationship between TEA and human capital using the composite index HDI put together by the United Nations to rank countries by the levels of education, health and incomes of their citizens. This index satisfied all the requirements needed to measure human capital for purposes of this research.

Chart 2 above shows a scatterplot, which plots the relationship between TEA and HDI levels. Illustratively, this chart shows that most economies have an HDI level above 7, where people are highly developed, yet have a TEA level less than 10. This means less than 10 percent of the adult population chooses to start a business in these well developed nations. This result is supported by table 4, which shows the correlation results for the entire equation. The correlation factor between TEA and HDI levels is a negative -0.586. This suggests that nearly 60 percent of the low TEA levels can be attributed to high levels of development.

Furthermore, Table 5, the regression result for HDI levels, shows an r-squared value of 0.3377, which shows that HDI rank is a contributing but not significant explanatory factor for TEA levels in each country. The F-crit result is above the F-stat, which means the Null Hypothesis is rejected. As such, it is determined that the value of this co-efficient is not equal to zero.

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Chart 7 shows the list of countries ranked by HDI levels from left to right. The visual illustration of this chart is double-fold; the first aspect is the show how flat the relative level of development is among these economies. Secondly, when you take a visual analysis of this chart you can immediately see that it is a mirror image of chart 6 in that the nations with the lowest TEA rate are the nations with the highest HDI rank.

This result is consistent with the findings by (Davidsson & Honig, 2003), who found that for though human capital is an important contributing factor, it failed to influence gestation beyond the initial phases of TEA. Davidsson and Honig found that social capital was far more significant in determining not only whether people started businesses or not, but also how quickly they would secure their first sale and whether or not they would continue with the business (Davidsson & Honig, 2003) (Stevenson & Harmeling, 1990).

A substantial amount of the literature places at its centre the primacy of human capital in the TEA process. Most of the literature however, does not provide statistical analysis beyond providing notional and anecdotal insights.

The empirical suggestion of the correlation and regression analysis discussed above suggests that where the levels of human development are high, societies choose less self-employment. A possible explanation is that developed societies tend to have high levels of per capita incomes, whose effect is to increase the risk and opportunity cost of leaving well paid employment for the unchartered waters of entrepreneurship (Hessels, van Stel, Brouwer, & Wennekers, 2007).

The role of human capital in TEA may be low partly because there is a greater incentive to become entrepreneurial within an organisation in high HDI countries (Harmina, Dumicic, & Cingula, 2014). In new venture creation, human capital has to synergistically combine with financial and social capital to manifest through inducing dynamic capabilities (Zahra, Sapienza, & Davidsson, 2006).

Therefore, it is the conclusion of this report that human capital does not so much influence TEA but rather influences the level, speed and extent of successful gestation once the entrepreneur has undertaken to build the business in the first place. Proposition 1 is rejected with a view that higher HDI levels are negatively correlated to TEA.

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## 6.3 Proposition 2

*Proposition statement 2: TEA is a positive function of GDP Per Capita. Higher personal incomes should have a strong effect on the level of entrepreneurship activity in a country.*

The proposition here is that higher per capita incomes should equate to higher incidents of TEA and gestation seeing as higher incomes help to solve the problem of access to capital (Davidsson & Honig, 2003). The logic is that in countries with high disposable income, aspirant entrepreneurs are (a) able to save some of the equity needed to bootstrap their enterprises (Winborg & Landstrom, 2001) and (b) have better access to credit and as such can access debt capital markets to raise the funding needed to start businesses.

This proposition statement is premised on the notion that TEA helps economies to increase their wealth (Murphy, Liao, & Welsch, 2006), which is measured in terms of per capita incomes. Even though per capita incomes are not the best measure of wealth (Harmina, Dumcic, & Cingula, 2014) they are however, a useful measure of well-being seeing as growth of national wealth can be diffused throughout the economy through taxes and other transfers (Pissarides, 1985).

Chart 4 above shows a scatterplot, which plots the relationship between TEA and GDP per capita. The relationship appears to be a negative relationship where higher per capita incomes are associated with lower TEA levels. This result is supported by table 4, which shows the correlation results for the entire equation. The correlation factor between TEA and GDP per capita is a negative -0.498. This suggests that half of the low TEA levels can be explained by the high levels of income.

Furthermore, Table 7, the regression result for GDP per capita, shows an r-squared value of 0.125, which shows that GDP per capita is not a significant explanatory factor for TEA levels in each country. The F-crit result is lower than the F-stat, which means the Null Hypothesis is not rejected. As such, it cannot be ruled out that the value of this co-efficient is equal to zero.

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Chart 6 shows the list of countries ranked by TEA levels from left to right. When compared to chart 8, which shows the list of countries ranked by GDP per capita from left to right, the charts look like mirror images of each other. The visual illustration of these two charts is that there is a major difference in TEA levels between the countries and that there is a major difference in per capita incomes in the countries and that the relationship between the two variables (TEA and GDP per capita) is an inverse relationship.

This is a significant result because it refutes the notion that there is a relationship between TEA and GDP per capita (Murphy, Liao, & Welsch, 2006) and instead supports the results found by (Harmina, Dumicic, & Cingula, 2014) that there is no significant relationship between TEA and GDP per capita.

This is a plausible outcome since high per capita incomes are associated with low unemployment levels and reasonable unemployment benefits. This takes away the incentive to start businesses, which are accompanied by an increased level of personal risk. High per capita incomes have a negative impact on the decision of individuals to become self-employed, because the loss of such income increases the opportunity cost of entrepreneurship (Hessels, van Stel, Brouwer, & Wennekers, 2007).

For the reasons forgoing, Proposition Statement 2 is rejected with a view that GDP per capita does not positively influence TEA levels in countries. That in fact the opposite is true, where higher per capita incomes are negatively correlated to TEA levels.

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### 6.4 Proposition 3

*Proposition statement 3: TEA is a function of Foreign Direct Investment (FDI). Higher FDI is expected to stimulate local supply chains and capital levels and have a strong effect on the level of demand for labour as well as entrepreneurship activity in a country.*

The proposition here is that higher Foreign Direct Investment leads to the creation of new industries or new industrial capacity. This additional capacity then stimulates the establishment of new ventures that enter the supply chain in support of such added capacity (Gartner, 1985). The operating logic is that FDI stimulates investment, which requires that more jobs are created to operate the additional capital (Berry, et al., 2002), which leads to more consumption expenditure, more taxes collected and yet more investment in a continuous cycle (Holte, 1987).

Chart 3 examines the relationship between FDI and TEA. Once more, high levels of FDI do not necessarily equate to high levels of TEA. The illustration here is that most economies have FDI of less than US\$10 billion and there is no apparent indication that this does anything to stimulate local interest in entrepreneurship. This result is supported by table 4, which shows the correlation results for the entire equation. The correlation factor between TEA and FDI is a negative -0.2698. This suggests that only a quarter of the low TEA levels can be explained by the FDI.

Furthermore, Table 6, the regression result for FDI levels, shows an r-squared value of 0.0144, which shows that FDI is not a significant explanatory factor for TEA levels in each country. The F-crit result is lower than the F-stat, which means the Null Hypothesis is not rejected. As such, it cannot be ruled out that the value of this co-efficient is equal to zero.

What this result indicates is that FDI is not an end in and of itself and must be specifically directed to job creating activities to be consequential. This could be as a result of more FDI concentrated on merger and acquisition activities and much less of an emphasis on Greenfield projects with job creation prospects. This has significant implications in that it suggests that additional units of capital might have implications on employment creation (Berry, et al., 2002) and (Holte, 1987) but have only a negligible effect on TEA.

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The value extraction mechanism of Merger and Acquisition activities is often accompanied by supply chain rationalisation, procurement centralisation, efficiency expansion efforts and right sizing activities. As such, it is improbable that new ventures would find room in these merged or acquired businesses and there are certainly low prospects of short-term employment expansion.

Notwithstanding the above, FDI activities that expand invested capital through new production capacity do create employment opportunities as well as opportunities for new ventures (Berry, et al., 2002), (Holte, 1987) and (Gartner, 1985). However, based on the result of the correlation and regression analysis, FDI does not positively or negatively affect TEA.

Proposition Statement 3 is thus rejected with a view that FDI levels do not positively influence TEA levels in countries. That in fact, with the exception of outlier nations China, Japan and the United States, FDI has no correlation to TEA levels whatsoever.

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### 6.5 Proposition 4

*Proposition statement 4: TEA is a function of positive supportive social arrangements measured using social welfare as a proxy index for levels of state sponsored interventions. Higher levels of social welfare are expected to have a negative impact on entrepreneurship activities in a country.*

The proposition here is that social welfare has a significant influence of gestation levels and is an important driver of entrepreneurship activity in a country (Hessels, van Stel, Brouwer, & Wennekers, 2007). Social welfare here can be thought of as the institutional arrangements of social security in the event of illness and unemployment. Naturally, generous social security provisions increase the opportunity cost of self-employment (Hessels, van Stel, Brouwer, & Wennekers, 2007).

Simultaneously, social security has the effect of reducing the incentive for entrepreneurial activity, particularly necessity driven TEA (Hessels, van Stel, Brouwer, & Wennekers, 2007). Social security can be comprehensively described as unemployment benefits, social grants, income grants, familial allowances, pension incomes and etcetera.

This research report reviews the relationship between TEA and social wellness using the composite index put together by the Organisation for Economic Cooperation and Development (OECD), which measures the social security provision as a percentage of GDP in each measured country.

Table 9 above shows the descriptive statistics for TEA and social welfare among the developed economies from the GEM countries. This sample is based on OECD countries where low levels of TEA are most prevalent and yet they have high levels of HDI and per capita incomes. To understand this, their Social Welfare expenditure as a percentage of GDP are regressed against TEA to establish if there is a significant statistical relationship.

Table 9 shows a median value around the mean, much less skewness compared, lower variance and lower kurtosis indicative of a better statistical relationship between social welfare and TEA, which allows for more accurate statistical analysis.

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Chart 9 is a directional scatterplot expressing the movement of TEA relative to size of Social Welfare. It is clear that TEA is upward sloping (rising) when Social Welfare is downward sloping (falling). This suggest that economies with the highest social security provision will have the lowest incidents of TEA (Hessels, van Stel, Brouwer, & Wennekers, 2007).

Table 10 shows the correlation coefficients for TEA. For this statistical analysis the neutered contribution of FDI is removed because it has an insignificant statistical and theoretical value. FDI is thus replaced with SWI and there appears to be a strong inverse relationship between TEA and SWI. Nearly 80 percent of low TEA levels can be explained by the quantum of Social Welfare in OECD countries.

Furthermore, Table 11, the regression result for SWI levels, shows an r-squared value of 0.673, which shows that SWI rank is a significant contributing and partially explanatory factor for TEA levels in each country. The F-crit result is above the F-stat, which means the Null Hypothesis is rejected. As such, it is determined that the value of this co-efficient is not equal to zero.

This result is consistent with the findings by (Hessels, van Stel, Brouwer, & Wennekers, 2007), who found that social welfare arrangements could significantly influence individual decisions to choose self-employment as and occupational choice because of the consequence of increased opportunity cost in doing so. This result also supports the (Shapiro & Stiglitz, 1984) equilibrium unemployment theory, which postulates that if wages are below social security entitlements, then individuals will choose unemployment instead of employment or self-employment.

Therefore, it is the conclusion of this report that social welfare levels, including familial support that is not accounted for in national accounts, has a significant influence on the level of entrepreneurship activities, particularly when entrepreneurship is viewed as one occupational choice in a selection of such choices. Proposition 4 is accepted with a view that higher SWI levels are negatively correlated to TEA and have a statistically significant effect on the level of entrepreneurial activity in OECD and by inferred extension, other countries.

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### 6.6 Ancillary Findings

#### ***Wage subsidies***

Wage subsidies have long been considered by Government's all over the world as a partial solution to solving the problem of unemployment among severely affected or vulnerable groups (National Treasury, 2011). The challenge with wage subsidies is that they could have a distorting effect in labour markets, where there is perfect substitutability between expensive unsubsidised labour and cheap subsidized labour (Barker, 2007). Wage subsidies also create dead weight loss situations, where the employer would have employed the labour anyway but now gets to do it for an incentive paid for by society.

That having been said, it is important to recognise the important role played by wage subsidies. The issue here is more of an institutional arrangements concern, than it is of the subsidy itself. Tax financed wage subsidies, for example, have the effect of lowering real wages and increasing vacancies (Pissarides, 1985). Whereas tax-financed unemployment benefits have the effect of raising wages and reducing employment (Pissarides, 1985).

This affirms the work done by Shapiro and Stiglitz where they found that low wages reduce the opportunity cost of being out of employment (Shapiro & Stiglitz, 1984), particularly where the social welfare benefits are relatively generous (Hessels, van Stel, Brouwer, & Wennekers, 2007). Resulting in a lower take up of both entrepreneurial initiative and employment as vocational choices.

To increase the incentive for work, it is more appropriate to provide a tax-financed subsidy to would-be employers (Pissarides, 1985), increasing the effective wage for the employee and increasing the opportunity cost of being unemployed (Shapiro & Stiglitz, 1984). This would lead to a higher equilibrium wage and would in effect increase the opportunity cost of TEA and would thus thwart entrepreneurial activity (Hessels, van Stel, Brouwer, & Wennekers, 2007).

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In this sense, wage subsidies might bode well as employer incentives to employ targeted groups, such as inexperienced and unskilled young people (National Treasury, 2011) but would negatively affect entrepreneurial activities in a country, making these choices mutually exclusive.

This research report sees the issue of wage subsidies as an alternative form of social welfare funding and as such, the outcomes of proposition statement 4 would be equally applicable here. This is perhaps a future area of empirical research.

### ***Incubation***

Having family and friends in business was found to be the most important factor that determined the level and extent of gestation by TEA entrepreneurs (Davidsson & Honig, 2003). Furthermore, belonging to a business club or chamber of commerce was found to be the most impactful factor that affected the speed with which TEA entrepreneurs secured their first sale (Davidsson & Honig, 2003). This is collectively recognised as the social capital influence on the TEA process (Davidsson & Honig, 2003), which has to be considered together with competence and dynamic capabilities (Zahra, Sapienza, & Davidsson, 2006).

In view of the fact that most ordinary people do not have close family or friends who can help them with the demands of new venture creation (Wadhwa, Aggarwal, Holly, & Salkever, 2006), business incubation can just as effectively help address issues of entrepreneurial cognition and required networks (Mitchell, et al., 2007). In an incubation environment, entrepreneurs can find solutions for both human and social capital challenges.

Entrepreneurs need to have sound access to resources (Alvarez & Busenitz, 2001), which will naturally include innate capabilities as well as strong and weak networks needed to move the business forward (Stevenson & Jarillo, 1990). This is the sort of support TEA entrepreneurs need to survive the venture creation process (Zahra, Sapienza, & Davidsson, 2006). Incubated businesses could potentially enjoy those benefits associated with being in a business cluster, such as, economies of scale (Krugman, 1990), competitive access to critical resources (Porter, 1998) and ease of market access (Feldman, 2001).

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Incubation therefore, is a critical success factor in the process of TEA stimulation and culture creation (Wadhwa, Aggarwal, Holly, & Salkever, 2006) and (Mitchell, et al., 2007). What makes corporate entrepreneurship thrive and to be the most significant form of entrepreneurship in terms of GDP contribution (Harmina, Dumicic, & Cingula, 2014) is the fact that inside corporation, there is a level of structure, wherewithal and procedural discipline unfamiliar in most TEA incidents.

This report considers the issue of incubation as being a critical success factor in successful TEA stimulation as it can cultivate financial, human and social capital all at once. The combination of experienced business advisors, sound processes and great business ideas is what ultimately turns the new ventures of today into the ultimate industrial juggernauts of tomorrow.

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### 6.7 Summary

When combined together, the work of (Berry, et al., 2002) on economic contributions of small businesses, (Davidsson & Honig, 2003) on the role of human and social capital, (Greene, 2005) on youth entrepreneurship, (Zahra, Sapienza, & Davidsson, 2006) on dynamic capabilities of entrepreneurial ventures, (Hessels, van Stel, Brouwer, & Wennekers, 2007) on social security arrangements and (Harmina, Dumicic, & Cingula, 2014) on the economic value created by different types of entrepreneurial initiatives, it is clear that financial, human and social capital has to be cultivated synergistically by incubating organisations to fully realise the promise of entrepreneurship as a solution to the problem of unemployment, particularly youth unemployment.

This literature combined with the empirical results in chapter 5 have adequately addressed the research objectives set out in chapter 1 and 3 above, they are discussed in the below;

#### ***Objective 1***

The economic and non-economic determinants that drive TEA have been established as levels of human and social capital. Economic conditions, such as joblessness have not been established as driving factors of TEA. HDI was found to have an inverse relationship with TEA, per capita GDP along with FDI were found to be neutered factors of TEA. The explicit knowledge of the entrepreneur such as years of study, were found to be limitedly explaining of TEA, however social capital factors were found to be massive drivers of TEA.

#### ***Objective 2***

TEA entrepreneurs were convincingly found to contribute to job opportunities, where those businesses survive and then grow overtime. Most new jobs are attributed to new ventures, which are a proxy. However, TEA was not found to be a significant contributing factor to economic growth measures such as GDP, instead corporate entrepreneurship contributed the most to GDP.

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## ***Objective 3***

The best way in which TEA can be cultivated and institutionalised was found to be through incubation. This was based on the fact that most gestation emanates from those TEA entrepreneurs with friends and family already in business. This is a plausible outcome since family and friends already in business provide a naturally occurring incubation and support structure to a TEA entrepreneur; including advising them on common business management issues and providing them with business linkages to secure their first sale.

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## 7. Chapter 7: Conclusion

### 7.1 Introduction

This chapter provides a conclusion to the research report by setting out the salient findings of the research exercise, highlighting implication for different stakeholders and then offering suggestions for future research. A model is also offered on how to cultivate TEA such that it contributes to employment creation and becomes fully enacted into our socioeconomic culture.

This research started with the questions; what causes TEA? Does TEA create employment? and How can TEA be cultivated and institutionalised? These questions formed the basis of the research objectives and proposition statements. A hypothetical explanation for what causes TEA was advanced in the form of a heuristic equation, which was modified from Kurt Lewin's equation, modelling human behaviour.

Lewin's equation posited that behaviour is a function of the person interacting with the environment. Alternatively;  $B = f(P, E)$ .

The reason why Lewin's equation was selected to create a model of analysis was because the equation was appropriate and practical to use for behavioural economics, which TEA is a subset of. Ultimately it is individuals acting out of their own accord, making occupational choices, such as being an entrepreneur that lead to employment creating activities for themselves and others.

Lewin's equation was modified to create a regression equation that considered TEA as behaviour and the person as the sum total of their resources and well-being (education, per capita income and health) as well as environmental factors such as wealth levels of the entire nation, attractiveness of countries as investment destinations through FDI and the generosity of social security arrangements in a country.

The resultant equation offered that  $TEA = f(SWI, HDI, GDP_{per\ capita}, FDI)$ . The overarching proposition being that social welfare was inversely related to TEA and that the other independent variables were positively related to TEA. The findings below provide a starkly different picture.

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### 7.2 Principal Findings

#### 7.2.1 Human Development Index, GDP Per Capita and Foreign Direct Investment

The significant quantity of literature suggests that human capital is the principle factors that drives nascent activities (Gartner, 1985), (Stevenson & Harmeling, 1990), (Alvarez & Busenitz, 2001), (Moog, 2002), (Eckhardt & Shane, 2003), (Davidsson & Honig, 2003) and (Zahra, Sapienza, & Davidsson, 2006). This seemed like a plausible argument in that the innate skills and capabilities that individuals possess should determine their ability to build businesses.

There are two possible explanations as to why the correlation and regression results for HDI are weak. The first is that HDI is not a suitable proxy for human capital. The second being that human capital does not so much drive nascent activities as it drives success once the new venture is operating. The former seems improbable since the HDI index takes levels of education and the consequential earning power into account. This could perhaps be a small nuance that the theory is not decidedly emphatic on and may need further theoretical expansion.

The outcome that high per capita incomes have a negative impact on the decision of individuals to become self-employed, because the loss of such income increases the opportunity cost of entrepreneurship (Hessels, van Stel, Brouwer, & Wennekers, 2007) seems like a reasonable result. Even though the expectation here was that there would be a higher correlation since high per capita income directly affect capital endowment in line with resource-based theories (Alvarez & Busenitz, 2001).

Similarly, the results from the correlation and regression analysis that FDI does not positively or negatively affect TEA was a surprising outcome. FDI activities are meant to expand available capital and create opportunities for new production capacity and as such stimulate nascent activities (Berry, et al., 2002), (Holte, 1987) and (Gartner, 1985). The outcome here is mostly explained by the realisation that most FDI activities are not driving new production capacity, but are focussed rather on non-TEA influencing mergers and acquisitions activity.

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### 7.2.2 Social Welfare Index and Subsidies

The correlation and regression results showed a strong inverse relationship between TEA and SWI with nearly 80 percent of low TEA levels possibly explained by the total value of available Social Welfare. The regression result for SWI levels showed an r-squared value of 0.673, which shows that SWI has a significant and explanatory statistical relationship with TEA.

The extent of correlation was a surprise, even though the result affirms the findings by (Hessels, van Stel, Brouwer, & Wennekers, 2007) that social welfare arrangements significantly influence individual decisions of availing their labour for employment or self-employment or not availing their labour at all.

This report also found that to compensate for this, it was better for Government to offer Tax financed wage subsidies in lieu of tax-financed unemployment benefits (Pissarides, 1985). This is because generous social welfare had the effect of reducing the incentive to work (Hessels, van Stel, Brouwer, & Wennekers, 2007). This is often exacerbated during times of low wage gluts (Shapiro & Stiglitz, 1984).

Tax financed wage subsidies therefore, can increase the incentive for work. However, this would in effect increase the opportunity cost of TEA and as such represents a choice apex between subsidised labour and entrepreneurial activity (Hessels, van Stel, Brouwer, & Wennekers, 2007).

### 7.2.3 Regional Applicability

Another important finding was that when the GEM reviewed countries are cluster in regions, the correlation and regression analyses work better. Partly because at a regional level you have a lower probability of outliers that could potentially distort statistical results. For example, when using the regression equation on Latin American nations, it is able to explain more than 90 percent of the TEA activities. Latin American and Caribbean nations have the highest TEA levels and among the lowest SWI levels. The opposite is true for OECD, mainly European countries.

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### 7.2.4 Total early-stage Entrepreneurial Activity Employment Contribution

Henrekson and Johansson found that Gazelles (small high growth firms) create most of the jobs in the economy (Henrekson & Johansson, 2009). Similarly, Birch also found that in a sample with nearly 6 million businesses, small businesses employing less than twenty people created two-thirds of all jobs and that those employing less than 100 people created 80 percent of all jobs over a century (Birch, 1981). So there is evidence that new ventures create the most number of jobs.

Even so, (Harmina, Dumicic, & Cingula, 2014) found that the relationship between GDP per capita and TEA is statistically significant and negative. Whereas the relationship between employee entrepreneurial activity (corporate entrepreneurship) and GDP per capita was statistically significant and positive. The implication is that TEA activities create employment but not wealth and that employee entrepreneurial activities can create both employment opportunities and wealth (Harmina, Dumicic, & Cingula, 2014) even though it mostly creates wealth.

This is important because we can state empirically that TEA creates employment opportunities.

### 7.2.5 Social Capital and Incubation

One of the most significant finding in this research report is that initial endowments in financial, human and social capital play a significant role in the rate of success. Factors such as previous start-up experience, having taken a business class, belonging to a business chamber, bonding social capital such as having friend or family in business and bridging social capital based on weak ties are all strong factors in predicting the level and frequency of gestation (Davidsson & Honig, 2003).

It is only through peer to peer role modelling, mentorship and incubation therefore, that we can cultivate a culture of successful TEA stimulation and ascertain that TEA entrepreneurs survive the long-run (Wadhwa, Aggarwal, Holly, & Salkever, 2006) and (Mitchell, et al., 2007).

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### 7.3 Implications and Recommendations

#### 7.3.1 Policy and Government

Although the Government has taken significant strides in supporting new venture creation or TEA activities through financial and non-financial support, there has been very little development of incubators. Even though some industry specific incubators have come up, such as the Chemicals incubator and the precious metals incubator, there is a need to foster more general incubators and locate these incubators such that they are accessible to their intended beneficiaries/markets. Supporting incubators is absolutely the right way to go for Government and all that needs to happen here is accelerated development of incubator capacity.

#### 7.3.2 Business and Management

There are two key implications for business. The first is that businesses need to create talent pools and the best way in which to do this is to support new ventures that are better placed to take risks of discovering new market. The best way in which to support these businesses is through preferential procurement opportunities as well as enterprise and supplier development initiatives. The second important implication for business is that of encouraging more intrapreneurship or corporate entrepreneurship activities. It has been established in this report that business creates not only entity related but national wealth by so doing.

#### 7.3.3 Academics

Business schools and institutions of learning should consider two implications. Firstly, as institutions responsible for human capital development, academic institutions should look to do more work on understanding those things that make entrepreneurs successful. Secondly, this research report found that (a) explicit human capital factors such as number of years of schooling were of little consequence to gestation and (b) that the combination of human, social and financial capital explains most successful TEA. Perhaps, academic institutions should look at extending their offering to include social and financial capital as well, particularly business schools.

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### 7.4 Limitations of this Research

Research limitations are set out in chapter 4. However, some emergent points of limitations are;

One of the first major challenges with this regression equation was that the sample was taken from a list of GEM reviewed countries. More appropriately a research exercise of this sort may need a more deliberate selection of countries so as to eliminate outlier problems. Choosing to selectively analyse like-countries may be more statistically valid and useful. Of-course this is not possible unless one is able to collect primary data used in the development of the TEA index.

One fundamental flaw with TEA as a measure of entrepreneurial activity is that it measures the quantum of the activity and not its quality. For example, in the sample of 73 countries reviewed, we know that Cameroon has the most number of adults, as a percentage of their population, starting businesses. However, this says nothing about the ultimate scale of those business and therefore, their ultimate contribution to economic development and employment creation.

Furthermore, measuring entrepreneurial activity by looking at adult populations in percentage terms is also misleading and ignores obvious differences and statistical distortions consequent to varying population sizes. For example, if ten percent of the adult population in the United States are involved in nascent activities, the scaling of anyone of their businesses could significantly outstrip the entire 37 percent of adults in Cameroon. As a matter of fact, one of those businesses started in the United States could scale to be larger than the GDP of Cameroon. As such, activity is not necessarily a good measure of impact and consequence.

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## 7.5 Suggestions for future Research

There are two potentially wonderful areas to which this research could be extended.

### 7.5.1 Regional Analysis

Some of the research findings of this study have begun to demonstrate that there is a significant statistical relationship between the variables that influence TEA and the region specific conditions. For example, the efficiency-driven economies of Latin America and the Caribbean have the highest incidents of TEA and it is nearly perfectly correlated to HDI. Whereas this is not nearly true for the OECD economies of the European Union that are innovation-driven economies.

### 7.5.2 Subsidy Analysis

Another great areas towards which this research could be extended is the effect of wage subsidies and other employee transfers on TEA. It has already been argued that tax-funded unemployment benefits have the effect of thwarting employment. The question is what is the consequence of this on TEA activities?

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## 7.6 Model of Analysis

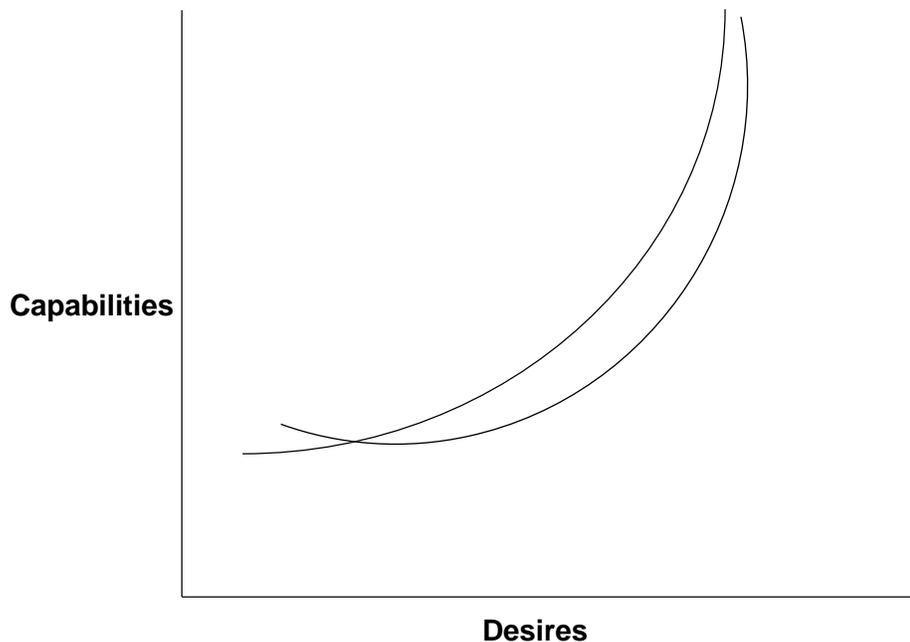


Figure 1: Desires and Capabilities Matrix

We have seen the emergent theme in this report that capabilities play a major role in desires. That it not just one form of capital but the synergistic orchestration of human, social and financial capital that influences both the frequency and success of gestation.

Desires expand as capabilities expand. The sure way to expand capabilities, from a combined capital perspective, is to provide more incubation to nascent entrepreneurs in particular. It is the conclusion of this report that to cause successful entrepreneurship; being entrepreneurship that can sustainably create jobs for the unemployed, it is necessary to cultivate mentorship and support through small business incubation programmes.

Hence therefore; **TEA = f(Small Business Incubation).**

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## Annexure 1: Consistency Matrix

### Consistency Matrix

PROPOSITIONS	LITIRATURE REVIEW	DATA SOURCES	ANALYSIS
<p><b><i>Proposition statement 1:</i></b> <i>TEA is a positive function of the level of Human Development. The level of human development in terms of education, health and income should have a strong and positive effect of the level of entrepreneurship activity in a country.</i></p>	<p>(Harmina, Dumcic, &amp; Cingula, 2014); (Davidsson &amp; Honig, 2003); (Zahra, Sapienza, &amp; Davidsson, 2006); (Eckhardt &amp; Shane, 2003); (Moog, 2002)</p>	<p>Global Entrepreneurship Monitor Report 2015  United National Human Development Index 2015</p>	<p>Correlation and Regression Analysis to (a) measure the strength of the linear association between the two numeric variables and (b) test the relationship for statistical significance.</p>

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<p><b>Proposition statement 2:</b> <i>TEA is a positive function of GDP Per Capita. Higher personal incomes should have a strong effect on the level of entrepreneurship activity in a country.</i></p>	<p>(Hessels, van Stel, Brouwer, &amp; Wennekers, 2007); (Murphy, Liao, &amp; Welsch, 2006); (Harmina, Dumicic, &amp; Cingula, 2014) (Winborg &amp; Landstrom, 2001)</p>	<p>Global Entrepreneurship Monitor Report 2015  World Bank Worldwide GDP Report 2015</p>	<p>Correlation and Regression Analysis to (a) measure the strength of the linear association between the two numeric variables and (b) test the relationship for statistical significance.</p>
<p><b>Proposition statement 3:</b> <i>TEA is a function of Foreign Direct Investment (FDI). Higher FDI is expected to stimulate local supply chains and capital levels and have a strong effect on the level of demand for labour as well as entrepreneurship activity in a country.</i></p>	<p>(Berry, et al., 2002) (Holte, 1987) (Gartner, 1985)</p>	<p>Global Entrepreneurship Monitor Report 2015  United Nations World Investment Report 2015</p>	<p>Correlation and Regression Analysis to (a) measure the strength of the linear association between the two numeric variables and (b) test the relationship for statistical significance.</p>

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<p><b>Proposition statement 4:</b> <i>TEA is a function of positive supportive social arrangements measured using social welfare as a proxy index for levels of state sponsored interventions. Higher levels of social welfare are expected to have a negative impact on entrepreneurship activities in a country.</i></p>	<p>(Hessels, van Stel, Brouwer, &amp; Wennekers, 2007) (Shapiro &amp; Stiglitz, 1984)</p>	<p>Global Entrepreneurship Monitor Report 2015  Organisation for Economic Cooperation and Development Social Exchange Report 2015</p>	<p>Correlation and Regression Analysis to (a) measure the strength of the linear association between the two numeric variables and (b) test the relationship for statistical significance.</p>
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