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DISSERTATION

Fuzzy estimating of the risks of financing business projects of small and medium enterprises based on provisions of behavioral economy

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CHAPTER ONE
UNDERSTANDING THE RESEARCH PROJECT

1.1 Introduction

This study investigates the risks of financing small and medium enterprises (SMEs) business-projects in terms of behavioral economics: using the integral estimation method and fuzzy rule. The purpose is to determine the most influential (most essential) financing risks indicators that developing economies, business-project sponsors / investors and managers face when financing business-projects in a knowledge economy. In recent years, project financing has become an important part of national development; this result of the changing nature of project administration and financing can be attributed to the advancement in technology and the complex competitive global marketplace. Every project requires a substantial amount of capital outlay from individuals, sponsors / investors, organizations and or governments. This therefore calls for the development of a methodology, models or tools to aid the estimation of the risk of financing business-project in other to guarantee the delivery of value for money.

Developing Economies are faced with unprecedented challenges in the current knowledge economy, as they strive to attain sustainable development through the implementation of short and long term business-projects. These challenges have been caused by the current knowledge economy, currently defined: a knowledge economy is characterized with the generation and adoption of new knowledge created by scientific research, technological development, investments in intangible assets, adoption of best practices, and openness to socio-economic, and cultural innovations [1]. This characteristics of Knowledge economy has caused new and a more complex risks to manifest itself in business-projects finance. Most small and medium enterprises in developing economies are face with the challenge of insufficient funding, poor financial management, weak administration processes and procedures, lack of quality materials, lack of skilled personnel needed to run business-projects and legal and political concerns.

These challenges not only cause poor business-project quality and less output but it also impact negatively on achieving national, economic and global development. Developing economies implementing business-projects through SMEs support need finance to meet their requirements in the current knowledge economy. Also, any kind of business-project activity depends on finance. Hence, finance is the lifeblood of every business-project. Whether the business-project's concerns are big or small, they need finance to fulfill all activities involved.

1.1.1The Overview of Financing Small and Medium Enterprises Business-Project

Small and Medium Enterprises need finance to meet their business projects financing requirements in the current knowledge economy. It must be noted that any kind of business project activity depends on finance. Therefore, finance is seen as the lifeblood of business-project activities in every economy, particularly in developing economies which have very limited access to funding. The entire developing economy's business-project activities are directly related to attaining sustainable development. Research has shown that the concept of finance is thought to include capital, funds, money, and amount. But each of these words is thought to have a unique meaning. According to Khan and Jain, "Finance is the art and science of managing money". Also, the Oxford dictionary defines finance as 'management of money'. Whereas, Webster's Ninth New Collegiate Dictionary defines finance as "the Science on study of the management of funds' and the management of fund as the system that includes the circulation of money, the granting of credit, the making of investments, and the provision of banking facilities. Studying and understanding the concept of financing business-projects have become an important part in developing economies. One common means to fund business-projects is through project finance. Project finance is very good at funding specific investments in certain industries. Typically, majority of project finance is used for capital-intensive infrastructure investments that employ established technology and generate stable returns, preferably

returns that are denominated in or can be easily converted to hard currencies. Also, empirical studies have shown that one comparative advantages of project finance is that it allows for the allocation of specific project risks (that is completion and operating risk, revenue and price risk, and the risk of political interference or expropriation) to those parties who are able to manage them [2].

Project finance have been defined in a variety of ways and there is no universally acceptable definition. However, some author's define project finance as: "the raising of finance on a limited recourse basis, for the purposes of developing a large capital-intensive infrastructure project, where the borrower is a special purpose vehicle and repayment of the financing by the borrower will be dependent on the internally generated cash flows of the project". This definition has introduced certain key words which require answers to the following questions: What is 'Limited Recourse'? Why is Project Finance use for developing large capital intensive infrastructure projects? Why the borrower is called a special purpose vehicle (SPV) in project financing? Research has shown that the terms 'Project Finance' and 'Limited Recourse Finance' are normally used interchangeably and should be considered to mean the same. David G. and James W. have made a strong argument that: to what extent can a financing where the lenders have significant collateral with (or other form of contractual remedy against) the project shareholders of the borrower can be truly regarded as a project financing? They further indicated that 'limited' alternative that financiers have to a project's shareholders in a true project financing is a major motivation for institutions adopting this approach to infrastructure investment. They additionally pointed out that Project financing is largely an exercise in the equitable allocation of a project's risks between the various stakeholders of the project [3].

History has it that the genesis of project financing can be traced to when the Roman and Greek merchants used project financing techniques in order to share the risks inherent to maritime trading [4]. Also, project financing (PF) is believed was first used on a large scale to develop the North Sea oil fields during the 1970s, where the scale and risk of the

investment required far exceeded the capabilities of any single petroleum company, or even any single consortium of companies. Following the success of the North Sea developments, PF have been used extensively to develop natural resource, electric power, transportation, and numerous other ventures around the world. PF have been associated with many financial and operating success stories. These include the Teeside Power project in the UK, the Ras Laffan LNG project in Qatar, the Hopewell Partners Guangzhou Highway in southern China, and the Petrozuata heavy oil project in Venezuela [5, 6]. In the 21st century project financing has grown very rapidly. Available data indicates $328 billion funding went into project financing in 2006, while $165 billion was recorded in 2003. The year 2006 recorded $217 billion in financing above the previous year 2001[7]. A key driver of project financing in recent time is the fastest pace in which the world's economy is growing. Research has shown that the global GDP has grown at a compounding annual growth rate of about 5%, while developing countries is estimated to be around 7% on average, since 2003[8]. Those studies also indicated that this rapid growth of the World's economy demands greater investment in business-projects such as basic infrastructure, games, railways network, bridges, roads, information and communications networks, electric power generation marketing facilities, airports, water, waste management facilities and quality healthcare centers. The Organization for Economic Cooperation and Development (OECD) has envisage that the world will need to spend about 4% of national and global GDP on infrastructure per year to support the accelerated growth. This means that nearly $1.6 trillion would be required annually to boost infrastructural project globally. Sadly, most governments especially those in developing economies are not well positioned to fund even a fraction of these investments. Additionally, the 2017 Global Report on project finance have shown that project financing has suffered a major decline in recent years. This decline is thought to be due to the uncertainty (risks) surrounding the macro-political events which have dominated news headlines throughout 2016. The Figure D.1 in appendix D shows the global spending on project financing by region in 2016 [9]. The report also showed that the Sub-Saharan

Africa region is dominated by developing economies which includes Ghana. However, they are the second least after the Caribbean in terms of global project financing in 2016.

It is worth noting that in financing business-projects, the key players are the sponsors, thus: national government (state-owned institutions and enterprises); the firms responsible for the actual busimess-project construction work at the project site; legal professionals who design the contracts and state the responsibilities of all parties involved; specialists who are responsible for allocating project risks and assessment, accounting, financial systems and controls, and who advise all principal actors on the project risks, and investment analysts who organize and lead the institutions / investors that funds the business-project loan. Also, financing business-projects in most cases is seen as a contractual network that revolves around several actors who usually sets up their own contracts terms that they hope would favor them. However, most business-project gets financed successfully when all the interests of the parties involved are satisfied at the same time. In most developing economies the issue of contractual networks is a major challenge. Thus, actors who are involved in signing the business-project financing contracts sometimes do not have the strength and the expertise to negotiate for better terms, do effective costing and risks estimation.

1.1.2 The Overview of Business-Project Financing Risk

Ensuring that adequate and timely risk identification is performed is the responsibility of the business-project owner, as the owner is the first participant in the business-project (thus, competency). Studies have shown that the sooner risks are identified, the sooner plans can be made to mitigate or manage them. Also, assigning the risk identification process to a contractor or an individual member of the business-project staff is rarely successful and may be considered a way to achieve the appearance of risk identification without actually doing it. It is important however that all project management personnel receive specific training in risk management methodology (this is also talking about competency). The said training should cover not only risk analysis techniques but also the

managerial skills needed to interpret risk assessments [10]. Unfortunately, this is not the case in developing economies, particularly in Ghana. Most business-projects investors and managers the competency / skills required to be able to identify risks of financing a particular business-project. However, the ability to identify and allocate risks is a key component of business-project financing.

A business-project may be subjected to a number of technical, environmental, economic and political risks, particularly in developing countries and emerging markets. Financial institutions and project sponsors may conclude that the risks inherent in a particular business-project development and operation are unacceptable. Marco S. (2004) stated that a riskier or more expensive project may require limited recourse financing secured by a surety from sponsors. Marco added that a complex project finance structure may incorporate corporate finance, securitization, options (derivatives), insurance provisions or other types of collateral enhancement to mitigate unallocated risk [11]. Notably, this behavior of individuals and institution towards risk and business-project financing can be better understood in terms of behavioral economics. Behavioral economics is taught to entail the study of the effects of psychological, cognitive, emotional, cultural and social factors on the economic decisions of individuals and institutions and how those decisions vary from those implied by classical theory [12]. This means that the ability to identify and mitigate risks is influenced by the psychological, cognitive, emotional, cultural and social factors surrounding the individual or institutions making the business-project financing decisions.

The above attitudes of individuals and institutions towards risk is the result of the constantly changing global working environment which creates destabilizing factors, risks, dangers and threats to business-projects in developing economies. Such situations requires managers to endeavor to implement effective methodological framework that will ensure business-project activity continuity and economic security as explained in the 3M pyramid methodological frame work [13]. The issue of financing risk is increasingly becoming an important subject matter for business-project finanaing in developing

economies, most importantly in SMEs business-projects financing. This is due to the demands for improvement in quality, accountability and organizational effectiveness in business-projects implementation. Authors such as Morris et al., (2012), Rosacker and Rosacker (2010), Crawford, L. et al., (2003), Baranskaya (2007) Ama Lawani, (2016), and Graham, R. J., and Englund, R. L. (2013) have written extensively on the practices of project management and financing in developing economies [14,15,16,17,18, and 19]. Understanding the word *'project'* is very crucial in this study. The word *'project'* is defined as a temporary endeavor undertaken to create a unique product, service or result [20]. It must be noted that good project management practices have positive impact on project success [21]. However, empirical studies have shown that developing countries are at a juvenile stage in project management and other factors are believe to be the lead causes of project failures in developing economies[22, 23]. The case in Ghana is not different, according to Ofori and Deffor (2013) [24]. In recent times financing of business project by international agencies have placed much emphasis on the importance of well prepared and executed projects. Unfortunately current happenings in developing economies reveals: poor project planning and preparation, substandard project design, faulty appraisal and selection processes, unproductive coordination of project activities, troubles in startup, activation, and poor project execution, operation and supervision as common characteristics of projects in developing economies[25]. All the above clearly shows that the current state of SMEs business-projects are characterized with bottlenecks, fund shortages and numerous problems which calls for a timely and remedial action to be taken.

1.1.3 The Current State of Business-Projects Financing in Developing Economies

Typical of most developing countries business-project financing is the shortage of long term and local currency financing for small and large scale business-projects. Most business-projects financing in developing economies is impeded by poor local economic development, insufficient monetary transfers, diminutive own source revenue and lack of

creditworthiness make. These challenges at times makes it very difficult for local investors, financial institutions and government to raise funds adequate enough to fully fund business-projects locally on their own. When financing business-projects in developing economies certain important funding and financial issues must be noted. Financing business-projects in developing economies tend to be expensive compare to developed economies. Therefore, developing strategies for sourcing funding (both public and private) to fund business-projects need to be an integral part of every financing strategy. Research have shown that project finance in developing economies is based on three sources: Debt, Equity and Grants [26]. Interestingly, most investors that fund projects in developing economies are very much interest in the term *'bankability'* [27]. The figure D.2 in appendix D presents a system model of key factors that currently determines project bankability in developing economies.

1.2 Background to the Business-Project Financing Risk Problems

Governments all over the World are losing huge sums of money through projects as a result of project failure. Recent study into over 200 projects showed that only one out eight information and communications technology projects can be considered truly successful [28, 29]. According to Heeks (2006) almost all World Bank funded Projects in Africa is either total failure or partial failure [30]. This report is heart breaking. The question one may ask is: *are there no better methods of identifying the prime risks of financing business-projects in Africa?* Some scholars believe that the over dependence upon developed countries and agencies such as the United Nations and the World Bank by developing economies to achieve their development objectives are no longer sustainable, unfortunately developing countries lack resources and have to always resort to such sources for funds [31, 32]. According to J. Nelson (2014) developing countries face an annual gap of $2.5 trillion for financing projects in sectors that will be relevant to achieving sustainable development goals. This study also believe that an effective and accountable corporate-government engagement can help to leverage financial resources,

build the trust and strengthen the governance and delivery capacity that are required to fill this gap and start more inclusive and resilient growth [33]. It is believed that researches on business-project failure can be categorized into three groups. The first group takes general view of project failure [34, 35 and 36]. The second collection focuses on private sector projects [37] and the final group research into the public or government sector projects [38, 39]. In pursuit for development developing countries engage in projects and programs such as youth employability, roads, dams and housing, plants, pipes constructions etc. Mostly, these projects are normally financed by tax-payers, International Monetary Fund and or the World Bank. Studies have shown that setbacks such as abandonment, cost deviation, schedule deviation and stakeholders' dissatisfaction are some of the causes of projects failure in developing economies Kaliba et al. (2009), Ahonen and Savolianen (2010). Also, other studies have shown that projects have been abandoned in developing countries due to lack or insufficient funding, citing a typical case as the Chad-Cameroon $4.2 billion dollars pipe-line project which failed because the World Bank withdrew its financial backing World Bank (2006). However, Ruuska and Teigland (2009) believe that inadequate resources are a major cause of project failure.

Developing countries in their quest to achieve development undertakes a number of business-projects which are financed by tax-payers, private investors, local and or international. However, the inability to effectively estimate the risks of financing such programs always leads to complete failures. This challenge developing countries face has created high youth unemployment rate. Studies into youth employability have shown that developing countries have considerably larger young populations as compared to developed countries. Also, the issues of youth employment and unemployment in developing economies will increase in importance as these countries continue to gain weight within the global economy [40]. According to the International Labor Organization (ILO, 2016) youth unemployment rate in developing countries is expected to remain relatively stable at around 9.5 percent in 2016, but in terms of absolute numbers it should increase by around 0.2 million in 2016 to reach 7.9 million unemployed youth in 2017

[41]. The report further stated that youth unemployment rate in sub-Saharan Africa is expected to continue on its downward trajectory, which began in 2012, reaching 10.9 percent in 2016 and decreasing slightly to 10.8 in the following year. However, the unemployment outlook for youth in major countries of the region remains quite mixed. Table E.1 in appendix E shows youth unemployment rate in the Africa region. From table 1.1 in appendix II one would have expected youth unemployment rate to drop. Unfortunately the case is different; a report by the World Bank on youth unemployment in Ghana has revealed that about 48 percent of Ghanaian youth between the ages of 15-24 do not have jobs. The report further indicated that in Ghana, youth are less likely than adults to be working. In 2012, about 52% of people aged 15-24 were employed (compared to about 90% for the 25-64 population), a third were in school, 14% were inactive and 4% were unemployed and actively looking for job. Also, young women in the same age group are particularly disadvantaged and have much higher inactivity rate than men: 17% of young female are inactive as opposed to 11% of males [42]. Further, the International Labor Organization in their 2016 World Employment and Social Outlook report revealed that 47% of Ghana's labor force have been left underutilized. In an attempt to solve the huge youth unemployment problem in Ghana is the brain behind the introduction of the Youth Employment Program by the Ghana government in 2006. Figure D.3 in appendix D shows some Ghanaian unemployed youth demonstrating against the Ghana government in 2017 for lack of jobs.

1.2.1 Profile of the National Youth Employment Program – Ghana

High youth unemployment in Ghana is a major challenging issue confronting the country. For instance the Ghana Trades Union Congress stated that yearly youth unemployment in Ghana increases by two hundred and fifty thousand (250,000) [43]. A situation of this nature demands the Ghana government to undertake developmental projects that will create jobs for Ghanaian youth. To help solve the high youth unemployment in Ghana, the government in 2006 introduced the National Youth

Employment Program (NYEP). The NYEP which was then known as the National Youth Job Corps Program (NYJCP) was established in 2006. This special policy initiated was based on the presidential directive to ensure that all youth including Junior High School (JHS) and Senior High School (SHS), Technical/Vocational School graduates as well as school dropouts and illiterate youth, would be actively engaged in some productive employment. The objective of the program was to help reduce unemployment, under-employment, satisfy national needs such as food security and equip the youth with some work experience for permanent employment [44].

During the first phase of the program, from 2006 to 2008 the government spent over $114 million on the program. [45]. Table E.2 in appendix E shows the Ghana cedi to US dollar budget spending for the first three years of the NYEP. Also, figure D.5 in appendix D presents the histogram of the budgeted and actual government spending on the program from 2006 to 2008. A careful analysis of 2006-2008 NYEP financing data reveals clearly that the program started facing financing risks right from inception. Only about 60.30% of the total budget for the program in 2006 was funded. However, the program saw an improvement in funding in 2007; when it received about 82.85% of funds needed for its budget. It is worth noting that there was a 42.77% reduction of budget in 2007 compared to 2006. The program further received 96.92% funding for its budget in 2008, an improvement of 14.07% funding compared to 2007. Comparatively, there was a 32.22% reduction in budget funding in 2008 compared to 2006 and an 18.41% budget increase in 2008 compared to 2007. Ideally one would have expected that such important youth employability program would receive a boost in funding but that was not the case of Ghana's National Youth Employment Program. From the above this study can clearly state the then government failed to identify the *risks in the ideas* that established the NYEP

Critical observation on the Youth Employment Program in Ghana revealed that the program faces high *political and legal risk*. A change of government in 2009 also led the renaming of the program to Ghana Youth Employment and Entrepreneurial Development Agency (GYEEDA) in 2012. This was done to restructure the program organization. The

restructuring looked into issues such as impact assessment, increasing the models, funding and payments etc. [46]. The restructuring report indicated that GYEEDA lack governance framework, lack legal basis for the needed oversight and direction, lack of commitment of the part of leadership to protect the public purse to ensure value for money and lack adequate operational and administrative manuals resulting in limited or non-adherence to relevant policies and this has caused system failure. At the national level the program appears to be highly politicized [47]. These challenges can be categorized as idea risk, competency risk and financial / investment risk.

1.2.2 Financing Risks of Ghana Youth Employment Program

Some reports on the program showed that the four year period of GYEEDA saw a lot of financing and financial management threat. The four (4) year period of the program, from 2009 to 2012 received whopping sum of GH¢949,661,017 ($604,918,158.48) from five (5) unauthorized sources. The sources are: the District Assembly Common Fund; Ghana Education Trust Fund (GetFund); National Health Insurance Scheme, Ministry of Finance and Economic Planning and Communication Service Tax to fund their unstipulated and wooly projects and activities [48]. A typical case in 2009 showed that the total funding of GH¢115,260,000 ($73,418,689.09) grew to GH¢157,341,000 ($100,223,581.12), an increment of about 36.51% in 2010. By the year 2011, the figure had increased to GH¢228,015,437 ($145242013.50), this is a representation of about a 45% increment in funding compared to 2010. Unbelievably, in the election year 2012, the funding surged to GH¢449,044,580 ($286033874.77), representing a 96.93% increment of funds for projects. The report also revealed that the GH¢949,661,017 ($604,918,158.48) allocated to GYEEDA in 2008-2012 was not the only amount spent on the program. An unaudited financial statements in June 2013 revealed that GYEEDA also had an outstanding debt of GH¢259,000,000 ($164978661.06). This revelation brings the total government spending on GYEEDA in from 2009 to 2012 periods to GH1¢1,208,661,017 ($769,896,819.54). The report further indicated that a 47% of the

GH¢259,000,000 ($164978661.06) alleged debt is thought to be owed. Also the programs was paying an unbelievable financing cost of about 100% per month or 1,200% per annum on the above debt. These revelations proves the real existence of high risks of financing business-projects in developing economies, characterized with ineffective financial policies and financial misappropriations.

The competency of every management team is very crucial to the success of every business-project. Some studies have identified lack of senior management commitment, poor competency and lack of coordination to improve and ensure the quality of NYEP business-projects as one major challenge confronting NYEP (49]. For instance, the Director of Finance from 2008 to 2012 hinted that in most cases, he was not aware of the amount and nature of disbursements that were made to service providers. Unbelievably, the four-year period, 2008-2012 of the program could not produce financial statements, budgets, or any financial reports. There appears to be no internal controls and accounts were never audited. The table E.3 in appendix E and figure D.4 in appendix D shows the seven (7) year, 2006-2012 period government spending on the program. The NYEP Agency core duty is to set standards and procedure for the employment and career development of the youth in the country among others [50]. However, this study believes that there is a complete failure on the part of the agency in delivering its core function looking at the rate of youth unemployment in Ghana. This complete failure has to do with lack of C*ompetence* [51]. Some scholars have pointed out in their studies that development as a function is not only of capital, physical and material resources, but also of their optimum utilization [52]. Unfortunately, the optimum utilization of capital, physical and material resources is a major problem facing NYEP

1.3 Statement of the Problem

Developing economies in an attempt to attain development engage in many developmental projects through SMEs business-project support. Traditionally, these business-projects are normally financed by tax-payer, World Bank and or the International Monetary Fund. Unfortunately, these projects are faced with several setbacks including stakeholders' dissatisfaction, scope and cost divergence; and complete abandonment [53, 54]. The rate of project failure trend around the world has attracted a lot of attention, particularly developing countries where a lot of business-projects are implemented to help attain a certain level of development. According to Espiner, 2007; Asay, 2008; and Fabian & Amir, 2011 governments and business around the globe are losing huge sums of money through project failure [55, 56]. It is very alarming to mention that only one in eight information technology projects can be considered to be truly successful [57]. Another group of study by (Marzouk & El-Rasas, 2013; Heeks, 2006; Sweis et al., 2008) shows that project failure in developing countries is on the high side [58, 59].

When stating SMEs business-project financing risks faced in developing economies, there is the need to clearly define what constitutes project failure. According to Abednego & Ogunlana (2006) project failure is linked to the managerial phase of a project [60]. Another definition by Atkinson (1999) is focused on project constraints also known as the "Iron Triangle". Atkinson further suggested that projects should be assessed base on benefits to organizations, benefits to stakeholder community and information System. Atkinson explained that the benefits to stakeholder include: contractors' profits, capital suppliers, project team, economic impact to surrounding community, satisfied users, social and environmental impact, personal development, and professional learning [61]. These indicators when analyze carefully are directly linked to Idea risk, Competency risks and Financial risks.

Projects failure rate in Ghana is also on the high side, with no exception of government projects. There are several reported case of Ghana government projects failure in the media (World Bank Reports 2007, 2008 and 2012). Also, a study by Amponsah (2014)

indicates that at least one out of every three infrastructural development projects in Ghana either fail or is not able to achieve one of the objectives [62]. These have prompted most donor agencies strictness on governments of developing countries including Ghana to meet certain conditions before funds are given out for projects. One of such conditions is the competency of the project management team and the administrative process. The World Bank report (2012) indicated that developing countries such as Ghana's over reliance on external sources of resources (especially funding) for their developmental projects call for the country to develop their skills to be able to identify other funding source [63]. Also, a study conducted by Isaac et al. (2015) indicates that funding, management and administration are major factors that contribute to Ghana government projects failure [64].

One major government project in Ghana that has attracted the attention of both local and international community is the National Youth Employment Program (NYEP), currently known as Youth Employment Agency (YEA). This project is known for the administration and financing challenges it continually face despite every effort by the government of Ghana to ensure its success. Palmer and Robert (2007) evaluation report indicated that the program appears to be highly politicized with only the government in power seeing its relevance in addressing youth unemployment challenges [65]. Also, Ransford Gyampo (2012) indicated that the NYEP has proven to be woefully inadequate in sustainably dealing with the huge problems of unemployment among Ghana's youth due to the serious setbacks it suffers. The GYEEDA Report, 2013 also indicated that the greatest problem of Ghana's NYEP is the absence of an appropriate governance framework; inadequate financial oversight; poor supervision etc., these challenges are purely idea risks, competency risks and return on investment risks.

Projects are used in all business and non-business fields as a means of organizing activities with the aim of achieving desired objectives. However, in spite of the relevance of projects, the PMI (2013) reports that more than one third of projects fail to reach their objectives [66]. Also, Daniel L. et al (2012) stated that most developing countries face a

shortage of long-term local-currency financing for small-scale infrastructure projects and this impedes local economic development. Also, inadequate fiscal transfers, little own source revenue and low creditworthiness make it difficult for local governments to fully fund projects on their own [67]. To sum it all, Nicholas C. et al. (201) in their studies found that financial and economic factors were the most likely cause of projects failures in Ghana [68]. These clearly shows that developing economies, particularly Ghana face a lot of financing risks and funding challenges in their pursuit to attain development through SMEs business-projects implementation. This therefore call for a study to be conducted on *"Estimating the Risk of Financing Small and Medium Enterprises (SMES) Business-Projects in Developing Economies: in Terms of Behavioral Economics – Using the Integral Estimation and Fuzzy Rule*". This study is believed would help developing economies to overcome all business-project financing challenges confronting them.

1.4 Research question

The significance of business-project finance in economic development is enormous. In developing economies governments are expected to implement projects that are believed would contribute to the attainment of the desire level of development. The actual contribution of finance to business project success is considered to be more critical than the project other factors since it aid in shaping the entire project environment to achieve success. To be able to provide lasting solutions to the identified challenges as indicated in the problem stamen, this study will try to find answers to the following questions: 1. To what extent does behavioral economics and fuzzy logic rule ensures the effective estimations of the risks of financing business-projects? 2. What are the prime risks factors of financing business-projects? 3. What are the prime risk indicators of financing business-projects? 4. What is the relationship between risk and financing of business-projects in developing economies? 5. What financing risk model is the most effective in identifying and controlling the risks of financing business-projects?

1.5 Aims and Objectives of the Study

The aim of this research is to identify the prime risks of financing SMEs business-project in developing economies, particularly in Ghana. As well as to develop a model and golden principle that will facility effective and quick identification and control of those risks indicators. Also, among this study's objective is to further develop models that will guarantee higher returns on investments in business-projects. While the relationship between risks of financing business-projects and return on investment in business-projects seem to be clearly important, this study seeks to extend this understanding in terms of behavioral economics; using integral estimation and the fuzzy rule as the basis to develop effective model and or principle of estimating and controlling the prime risks of financing business-projects. This study was guided by the following objectives:

i. To investigate how effective some of the old approached to estimate the risks of financing business-projects have been.

ii. To determine the critical financing risks indicators that causes business-projects failures in developing economies.

iii. To understand the risks of financing business-projects in terms of behavioral economics, using integral estimation and fuzzy rule. Iv. To develop the most effective models and or principles to estimate the risks of financing business-projects in developing economies. V. To prove that the developed model by this study is the most effective to be used to estimate the risks of financing business-projects in developing economies.

1.6 Proposition

This study hold the proposition that: i. Effective estimating of the risks of financing business-projects in developing economies would guarantee higher return on investment. Ii. The approach to estimating the risks of financing business-project risks have a significant impact on attracting both local and external funding to those projects. Iii. Business-projects success has positive correlation with the effective estimation of the risks of financing those projects. Iv. Idea risk, Competency risk and Return on Investment risk

is equal to business-project financing risks (I_r, C_r, ROI_r = BPFR). V. High risk business-project does not mean no or less return on investment.

1.7 Rationalization for the Study

Business-projects initiated in developing economies might not be able to solve the unemployment problems facing the economy. However, if such business projects undergo effective financing risk estimations and appropriate financing models are used to ensure activity continuity, issues of business-project failure will become a thing of the past. This study has developed model and a guiding principle that would ensure the effective estimation of the risk of financing business-projects. It is hoped that this model would guarantee business-projects success and higher return on investment. The developed model also highlights the correlation between risk of financing business-project and the integral estimation and Fuzzy rule. The rate of business projects failure is high in developing economies; this research also highlights the factors that constitute the prime risks of financing business projects and offers solutions. Further, there appear to be a missing link between the estimations of the risks of financing business projects and business-project financing in developing economies to the extent that some researchers have indicated in their studies that "getting funds released from donor partners and agencies are very difficult, couple with administration challenges; while others have also indicated that developing economies lack project development capacity [69, 70]. This study also believe that not much study have been conducted into the estimation of the risk of financing business-projects in developing economies. Therefore, this study will contribute to the body of knowledge in the field of finance, especially when estimating the risk of financing business-projects in developing economy in general. This study will be of much importance and interest to scholars, students and policy makers. On a personal level, it will assist the researcher to attain a higher qualification in finance and management of business-projects and will broaden the researcher's knowledge and understanding of Finance and risks of financing business-projects.

1.8 Scope, Object and Subject of the Study

The scope of the study covers the estimations of the risk of financing business-projects in developing economies, focusing on the National Youth Employment Program (NYEP) in Ghana. The Youth Employment program of Ghana was chosen as the setting of this study because the programs has existed for quite some time now (over 10 years) and it has a lot of data that will support this study. Also, NYEP has registered a lot of risks in terms of financing and financial management. That makes it more prudent for this study to be conducted to support such important national program. Further, the program share similar characteristics with most business-projects implemented in developing economies, and this would mean that the findings of this study would be applicable to, if not all, most business-project.

Object: the object of this study is the prime risks of financing business-projects. This is what frames the research question, articulates all claims, formulates and generate information, facilitates techniques that will produce new knowledge, models and information through the research.

Subject: the subject of this research is the human beings the study targeted for observation by the researcher. The subject includes NYEP program coordinators; project / model managers and participants

1.9 The Research Methodology

This study is a scientific social research which reveals what the *situation of the object and subject is and what it ought to be*. The study uses quantitative, qualitative and conceptual research methods. Data was collected through questionnaires, face-face and phone interviews, direct observations and e-mails. Data collected were analyzed through the use of SPSS and Excel software.

1.9.1 Limitation of the Study

The importance of this study to developing economies, Ghana in particular, NYEP beneficiaries and policymakers cannot be exaggerated as stated. However, the desire to do conscientious work should see some degree of limitation because the study used closed-ended questions which restricted respondents from expressing own views on certain issues outside the study. Also, participants of NYEP are scattered all over Ghana and contacting all to get adequate information was awkward. However, maximum efforts were made to cover the established sample size that guarantees the quality and accuracy of the research findings.

1.9.2 Organization of the Report

The study is grouped into five chapters. The chapter one presents the overview of the risk of financing business-project in developing economies, the history of NYEP and its financing risks and other challenges and problems, the problem statement, the research questions, objectives, the rational of the study, limitations as well as the organization of chapters, summary and conclusion. Chapter two presents relevant literature on the concept and theories of risk of financing business-project in terms of behavioral economics; using the integral estimation method and the Fuzzy rule to answer the different questions posed in this study. It also looks at the risk of financing business-projects. Chapter three also present the research methodology, including methods of gathering the data and statistical measurements; and also gives a short profile of the study area and the kind of data required. Chapter four provides detail analysis on data, discusses and provides meaningful presentation of data collected on both subject and object. Lastly, the chapter five discusses the main findings of the study; draws generalize conclusions and offers useful recommendations.

1.9.3 Summary

This chapter of the study presents what this study sought to do and presents the research topic as "*estimating the risk of financing small and medium enterprises business-projects in developing economies: in terms of behavioral economics – using integral estimation method and fuzzy rule,"* with the focus on determining the prime risks of financing business-projects in developing economies. The study also highlight that developing Economies are facing unprecedented challenges in the current knowledge economy, as they strive to attain sustainable development through the implementation of short and long term economic development projects. This chapter also sought to prove the essence of estimating the risks of financing business-project as a way of guaranteeing higher returns on investment in business-projects. It also presents information on project finance, its essence and the sources of project finance. Further this chapter provides an overview of project finance. Furthermore, it clearly defines the object and subject of the study. Additionally, it provided detail background of the case study and clearly defines the problem statement, justifying the rational for the study to be conducted, and also state the research goals, questions and objectives.

1.9.4 Task for Next Chapter

This study accept as true that projects are used in all business and non-business fields as a means of organizing activities with the aim of achieving desired objectives. However, in spite of the relevance of projects, more than one third of projects fail to reach their objectives (PMBOK, 213). Therefore, the next chapter of this study will focus of reviewing related literatures on the risks of financing business-projects to justify the knowledge gap that this study sought to fill. Also, the next chapter will seek to establish the rational for considering the risks of financing SMEs business projects in the context of behavioral economics. It will also prove the relevance for suing the integral estimation method and the fuzzy rule as the scientific base of this study. Further, the next chapter

will establish the need to proceed to choose the research methodology to aid data collection and analysis.

Conclusions

Developing Economies are facing unprecedented challenges in the current knowledge economy, as they strive to attain sustainable development through the implementation of short and long term business-projects. However, most of these projects in developing economies face the challenge of insufficient funding, poor financial management, weak administration processes and procedures, lack of quality materials, lack of skilled personnel needed to run the projects and legal and political concerns. These challenges not only causes poor project quality and less output or impact but it also impact negatively on achieving national, economic and global development. The above challenges when analyzed critically can be termed as Risks of financing business- projects.

The National Youth Employment Program (NYEP is noted for the risks of financing its business-project. The program continually face numerous challenges despite every effort by the government of Ghana to ensure its success. Analysis of available reports on the program indicated that the program appears to be facing high financing risks, with only the government in power seeing its relevance in addressing youth unemployment challenges. The programs has also proven to be woefully inadequate in sustainably dealing with the huge problems of unemployment among Ghana's youth due to the serious setbacks it suffers which are purely financial issues. The above identified challenges of NYEP and the existing knowledge gap in the scholarly world on the subject matter forms the logic for this study to be conducted on "Estimation of the Risks of Financing Business-projects in Developing Economies: in terms of Behavioral Economics –Using the Integral Estimation Method and Fuzzy Rule".

CHAPTER TWO
LITERATURE REVIEW: UNDERSTANDING THE RISK OF FINANCING BUSINESS-PROJECTS IN DEVELOPING ECONOMIES IN TERMS OF BEHAVIORAL ECONOMICS: USING INTEGRAL ESTIMATION AND FUZZY LOGIC RULE

2.1 Introduction

The crucial role of finance in business-project implementation is enormous. However, finance is seen as the major challenge confronting all business-projects implemented in most developing economies; particularly in Ghana. This chapter analyzes the existing body of literature on the prime risks of financing business-projects in terms of behavioral economics, using integral estimation method and fuzzy rule as a foundation for the successful estimation of the prime risks of financing business-projects in developing economies. Also, this chapter presents analyses on behavioral economics theories, integral estimation method and fuzzy rule to prove its effectiveness in analyzing the prime risks of financing business-projects in developing economies.

A review of related literature was undertaken in so as to establish the perspectives of scholars on estimating the prime risks of financing business-projects. In addition, literature on SMEs and behavioral economics provided the basis to review various perspectives of integral estimation methods and fuzzy logic rule usefulness in risks estimation. Recent studies have shown that companies and governments all over the World are losing huge sums of money through project failure (Espiner, 2007, Asay, 2008, and Maylor et al., 2006). However, Isaac S.D., (2015) studies prompted the need to look into risks of financing business projects.

2.2. Analysis of Small and Medium Enterprises (SMES) in the context of Behavioral Economics

Despite the huge contributions of SMEs to economic growth such as jobs and market creation and income generation, there is no universally accepted definition of SMEs [71]. The differences in SME definition extend in three sides: definitions by international institutions, definitions by national laws and by industry definitions. Finding a universal standard poses a piercing and acute critic to institutionalists, economists, academics and industrialists [72]. Some research have shown that small and medium enterprises are sometimes being defined by adjectives such as size. Most economists for instance define SMEs by dividing them into classes according to some quantitative measurable indicators. However, the most common decisive factor to distinguish between large and small businesses is the number of employees [73]. It is thought to be true that the Bolton Report, 1971 is one of the first attempts to provide a definition of SMEs [74]. This report suggests two approaches to define SMEs: quantitative approach and qualitative approach. However, most international institutions, academics, statistical agencies and policymakers, most often apply the quantitative criteria in defining SMEs. The European Commission defines small enterprise as having 10 to 50 employees and medium enterprise as having 51 to 250 employees, with an annual €10 million and €50 million respectively [75]. However, in Ghana the Registrar General Department define Small enterprises as those employing between 6 and 29 employees and with fixed assets of up to one hundred thousand dollars ($100,000), whilst medium enterprises as those employing between 30 and 99 employees with fixed assets of up to one million dollars ($1,000,000) [76].

Most importantly, major SMEs operations entails activities which can be best escribe as business-project. Wretchedly, in spite of the billions of dollars spent on economic development assistance each year, there is still very little known about the actual impacts of those interventions in the SME sector. This study believe that the success of every business-project start from the ‘idea conception stage” *(idea risks).* To logic behind the idea risks introduced in this study can be linked to the ‘Noisy’ Selection Theory, which

states that one key factor to consider when analyzing the success of a firm is its start-up and operating costs [77]. Saburo K. (2001) believes that finance as fundamental to SMEs growth, and describes it as tool for SME development [78]. But the big question is: what is the guarantee that the invested fund will yield the most expected results? (*Thus, return on investment risks)*. However, Najib H. (2002) revealed that the principal factors impeding firm growth are lack of access to qualified workers and managers; government policies such; domestic price volatility among others [79]. Also, Pajarinen et al. (2015) stated that entrepreneurs with higher academic background are more innovative and will use modern techniques and models to do business. Schumpeter (1934) indicated that an entrepreneur needs to be innovative, creative, and should be able to take risk. Further, Barringer and Bluedorn (1999) described entrepreneurs as individuals who can explore the environment, discover the opportunities, and exploit them after proper evaluation [80, 81, and 82]. These characteristics as stated above when analyze carefully are linked competency *(Competency Risks)*. The competency risk is more affirmed through a careful analysis of the Chaos theory [83].

To better gain more insight on the rationale behind most SMEs choices of business-project and decision making, this study would like to explore some knowledge on behavioral economics. Understanding the effects of psychological, cognitive, emotional, cultural and social factors on the economic decisions of individuals and institutions and how those decisions vary from those implied by classical theory is very crucial when estimating the risk of financing business projects [84]. It must be noted that humans make 95% of their decisions using mental shortcuts or rules of thumb. Humans' frame their idea base on the collection of anecdotes and stereotypes that make up the mental filters individuals rely on to understand and respond to events. However, one must note that market inefficiencies exist and these include mispricing and non-rational decision making [85]. Also, when individuals make decisions, their rationality is limited by the tractability of the decision problem, their cognitive limitations and the time available. Therefore, decision makers in this view act as satisfiers, seeking a satisfactory solution rather than an

optimal one. It must be noted that the idea that humans generate take shortcuts that may lead to suboptimal decision-making [86, 87, and 88]. From these points, the estimation of the risk of financing SMEs business-project must go beyond just looking at financial indicators but should also look at the psychological state of the persons initiating / managing the business idea or requesting for funding. These constitutes what this study identify as an IDEA RISK.

2.3 The Finance Framework and Business-Project Financing.

The origin on the word 'finance' is thought to come from the Latin word "finis" which means end or finish. Some scholars believe that the implications of finance affect individuals and businesses, organizations and states and it has to do with obtaining and using of money or money management [89]. The fact is that every type of business activity depends on finance, irrespective of whether it is big or small, finance is needed to fulfill all such activities [90]. Typical of most business-project activities is its profit making nature, job creation and economic development and all these activities combined some form of factors of production. The economics concept of factors of production includes: rent; wages and salaries, interest given to sponsors and shareholders and these factors requires finance to meet the above requirements. Also, the term finance may be called as capital, investment, fund etc. but each of these term is having different meanings and unique characters. In simple term, finance may be defined as the art and science of managing money and includes financial service and financial instruments [91]. Also, Paish F.W., (1982), John J. H., (1989), and Howard and Upton (1953) have provided detail definitions to finance. These definitions includes: the position of money at the time it is wanted (*time bound)*; the flows of money through an organization, whether it will be a corporation, school, bank or government agency; and that administrative area or set of administrative functions in an organization which relates with the arrangement of each and credit so that the organization may have the means to carry out the objectives as satisfactorily as possible [92, 93, and 94]. After, critical examinations of the various

definitions of finance given by scholars, this study also define finance as: *"the administrative function of identifying, contacting, negotiating terms, obtaining and managing monetary resources from individuals, financial and nonfinancial institutions or government to fulfill the financing needs of business-projects in an organization".* That is*, the art of raising and managing monetary resources to found business-projects*

It is an indisputable fact that finance is required for investment purposes as well as to meet substantial capital expenditure projects [95]. Also, according to BusinessDictionary.com financing is *the "act of providing money for a project"* [96]. All the above various definitions of finance makes it clear that there is a strong connection between finance and business-projects. That is, the later depends on the forma for its implementation. Also, the definitions shows that every business-project requires funding. This therefore, has created a strong need to look at the art of financing business-projects. Also, every business activities require finance and every business is a process of acquiring and disposing assets, that is, real assets (tangible and intangible) and financial assets with the objectives to grow wealth or to use wealth (assets) in the best way to meet economic needs [97]. Similarly, very SMEs business-project require a substantial amount of capital outlay to run its activities. It is however impossible to conduct such business activities without injection of money from time to time. It is for this reason why an in-depth understanding of business-project financing is very crucial to this study.

Further, Finance is thought to mean an amount of capital or the sum of money provided to an organization with the expectation to repay, and organizations are liable to pay back the capital amount along with a certain percentage of interest [98]. The important questions to ask is*: how would the entity providing the capital be sure that the receiving entity will be able to repay the capital amount and interest?* This is why there is the need for this study to be conducted on the estimation of the risk of financing such entities. Financing play a pivotal role in the start of a business and ramp it up to profitability. There are several sources to consider when looking for start-up financing. But first, there is the need to consider how much money is need and when it will be need. The financial needs

of every business-project will vary according to the type and size of the business. However, debt and equity are considered to be the two major sources of financing. Equity financing means exchanging a portion of the ownership of the business for a financial investment in the business, whereas debt financing involves borrowing funds from creditors with the stipulation of repaying the borrowed funds plus interest at a specified future time [99].

SMEs are essential agents in innovation and technology advancements as well as an important part of the supply chain for large multi-national companies. Unfortunately, there appears to be a knowledge gap about how to estimate the risks of financing SMEs business-projects, the range of funding options available to SMEs and the acceptance level of risks of financing SMEs business-projects. This revelation is a contrary to the predictions of the Financial Growth Life Cycle model because the external sources of financing SMEs exceed internal sources. However, the most crucial factors for the survival in each stage of the development process and for smooth transition from one stage to another are the entity's ability to fund its operation [100]. In The aftermath of the 2008-09 global financial crises, bank credit constraints experienced by SMEs in many countries have further highlighted the vulnerability of the SME sector to changing conditions in bank lending. Traditional debt finance such as bank loans, overdrafts, credit lines and the use of credit cards is the most common source of external finance for many SMEs and entrepreneurs [101]. Sadly, traditional banks have become more concern about SMEs credit worthiness. Existing literatures reviewed shows that estimating SMEs credit worthiness can be done base on *Hard* Quantitative Data, and Relationship Lending [102 and 103]. However, specific challenges limit traditional banks lending to SMEs. These are largely related to the greater difficulties that lenders encounter in assessing and monitoring SMEs relative to large firms [104 and 105]. These also called the development of an effective financing system that can supply financial resources to a broad range of SMEs in varying circumstances. Also, channeling financial wealth from different sources to SMEs business-project investments would be required to help grow the SME sector.

The above stated points when analyze carefully reveal the need to consider the risks involve financing SMEs business-project. That is Financing Risks indicators.

2.3.1 Finance Functions Versus Financial management

One of the most important functions of finance is ensuring the efficient utilization of funds. Eugene F. B. et al. (2013) stated that finance function is the most important function of all business activities. That is, raising money alone is not important but the efficient management of finances [106]. This means that all SMEs must develop the ability to raise funds from multi sources, keeping in mind the implications in particular and risks attached. The functions of financial management are better understood in its definition. That is, financial Management deals with procurement of funds and their effective utilization in the business [107]. The effective utilizations of funds meant for business-projects implementation requires that managers endeavor to put in place proper control measures that will guarantee value for money. Also, Solomon E. (1963) indicated that financial Management is concerned with the efficient use of an important economic resource, namely capital funds [108]. Further, the European Commission, (2017) maintain that resource efficiency means using the Earth's limited resources in a sustainable manner while minimizing impacts on the environment. It is believe this will promote the creation of more with less and to deliver greater value with less input [109]. Also, financial management is concerned with the acquisition, financing and Management of assets with some overall goal in mind [110]. Further, financial management includes the processes of acquiring and managing the financial resources for the project. That is, project financial management is more concerned with revenue sources and monitoring net cash flows for the construction project than with managing day-to-day costs [111].

One key function of financial management is financial planning – the process of establishing a budget based on information about expenses and income [112].This means that effective financial planning in business-project development and implementation would enable sponsors and implementers to predict its profitability and liquidity.

Financial planning also helps to know the net worth of the business-project by making a list of all assets as well as liabilities involved in the project. *Net worth = Total assets – Total liabilities***.** It further helps to: i. Create a budget for the project; ii. Set the project financial goals; iii. Know stakeholders risks tolerance level; iv. Develop and implement financial plan and v. Review and adjust the financial plan. Authors such as Paul M. (2013), RIM Society (2012), Laury H. (2003), and Matt W. et al. have all written extensively on financial planning [113, 114, 115, and 116]. The figure D.6 in appendix D illustrates the six key steps involved in business-project financial planning.

Another key function is financial Control – financial control is thought to have a wide meaning in some organizations and a narrow meaning in others. The wide meaning follows the meaning of internal controls except that it refers to controls, which have a specific financial component. The narrower meaning follows the narrower meaning of financial controller and refers to the specific review of the conformity of transactions with regulations and procedures described in ex-ante financial control [117]. However, financial control are those measures that is put in place to ensure that financial related assets or properties of an 34tilization34 are safeguarded, either from externals or employees of an 34tilization34 from any threat whatsoever, whether by theft, loss or misappropriation (intentional or otherwise). Thus financial controls are those policies, procedures practices and organizational structures which are implemented to reduce financial risk to the organization [118]. The success of every financial control system depends largely on the internal control system of the organization. An internal control system is the whole system of control, financial or otherwise, established by the management in order to carry on the business of the enterprises in an orderly and efficient manner, adherence to management's policies, safeguard the asset and secure as far as possible the completeness and accuracy of the records [119]. The objectives of internal control system are: Operational control, administrative control and internal accounting control. These objectives have been researched on extensively by theses authors in their studies [120,121,122, and 123].

i.Features of an Internal Control System

An internal control system is the process designed, implemented and maintained by those charged with governance, management and other personnel to provide reasonable assurance about the achievement of an entity's objectives with regard to reliability of financial reporting, effectiveness and efficiency of operations, and compliance with applicable laws and regulations [124]. Also, Kan (2013) stated that internal control includes all the policies and procedures adopted by the directors and management of an entity in order to achieve their goals of ensuring, as far as practicable, the orderly and efficient conduct of its business, including: adherence to management policies; safeguarding of assets; prevention and detection of fraud and error; ensuring the accuracy and completeness of the accounting records; and timely preparation of reliable financial statements [125]. The Figure D.7 in appendix D developed by this study illustrates the functions of financial management in business-project development and implementation. Philippe Z., et al (2011) stated in their study that management control is an approach that is pursued over time. The approach to management control is therefore progressive, which is why researchers describe it as the control process [126, 127]. Also, Monitoring- One key purpose of monitoring is not simply to "observe" whether targets have been reached or not. Monitoring is an essential part of control to ensure the achievement of objectives. Monitoring is not supposed to be done at the end of the timeframe, but rather during the implementation of action plans, to give manager the chance to take corrective actions before the final result [128]. Also, Organizational Control – the process by which an organization influences its subunits and members to behave in ways that leads to the attainment of organizational goals and objectives [129]. Further, Supervision Control – supervision as a site-visit have a central function as a means for collecting data, but also as an arena for negotiation and persuasion between inspectors and those being inspected [130]. The primary goals of supervision include: serve as a guarantee that minimum standards are maintained; contribute to raising the level of standards; and, lead to clients and citizens trusting the inspected operations and the democratic system [131].

Additionally, Eva Hämberg (2013) highlight a broad spectrum of control systems which is divided into what can be described as the four ideal types: oversight, competition, mutuality and contrived randomness. [132].

As part of the control measures, physical controls are considered as measures and procedures put in place to protect physical assets against theft or unauthorized access and use [133]. Physical (Environmental) security addresses the implementation, maintenance, threats, and vulnerabilities controls that can be utilized to physically protect an enterprise's resources and sensitive information of an organization [134, 135]. Also, table E.4 in appendix E illustrates clues to help detect when control systems are needed [136]. Another major challenge of business-project financing is authorisation and approval control – Many a times there is conflict of interest between project team as to who qualifies to authorize and or approve funds and other resources to be spent on projects. Astrid A. (2010) stated that approval is the confirmation or sanction of employee decisions, events or transactions, based on an independent review. Approval requirements should be documented to ensure that employees obtain approvals in all situations where management has decided they are necessary [137]. Authorization and approval controls can prevent loss of resources, including capital assets, inventory, proprietary information, and cash. Also helps to ensure compliance with applicable laws and regulations. However, periodic audits against the control guidelines can ensure that a process in control stays in control [138]. Also, personnel control – is one important measure when it comes to financing business-projects. The function of personnel management helps in planning, organizing, directing, and controlling of the performance of those operative functions [139, 140]. Arithmetical and accounting control – according to O'Leary et al., (2006) internal control structure can be summarized into three, mainly: the control environment, the accounting information system and control policies and procedures. Where, the control environment covers management philosophy and operating style, organizational structure, assignment of authority and responsibility, internal audit, use of the information technology, human resources and audit committee. Also, the accounting information

system component includes database contents, data input-processing-output and inclusion in the financial report, segregation of duties, authorization procedures, adequate documentation, independent checks, physical controls and records [141, 142]. Table E.5 in appendix E represents types of accounting controls the can be put in place to control the risk financing business-projects.

ii.Nature of Financial Administration of Business-Projects

Financial administration as an important aspect of business-project financing and it is also an essential function performed by all managers globally. Financial administration is the process of managing financial tasks for a company or organization (Cambridge English Dictionary). The term Financial Administration consists of two words; Finance and Administration. Financial Administration is also the set of activities which are related to making available money to the various branches of an office, or an organization to enable it to carrying out its objectives [143]. Also, financial administration involves all the activities of finance and taxation [144]. Further, financial administration is concerned with all the aspects of financial management of the State. The above definitions shows that to be able to carry out the functions of financial administration successfully business-project managers must be competent in estimation of financing risks. Studies have shown that the nature of financial administration consists of two views: traditional and modern views. The traditional view conceives financial administration as a sum total of activities undertaken in pursuit of generation, regulation and distribution of monetary resources needed for the sustenance and growth of public organizations. The modem view considers financial administration as an integral part of the overall management process of public organizations rather than one of raising and disbursing public funds [145]. This research is of the view that all projects involve a substantial amount of capital outlay in a form of “project finance”. Also, governments and the private sector generally benefit from exchanges of human and financial resources through project finance. Therefore, the estimation of the risk of

financing business-projects can also be considered to be an integral aspect of the financial administration function.

Also, Vignesh G (2015) maintained that financial administration falls into five well-defined divisions namely: preparation of budget, execution of the budget, treasury management, rendering of the accounts by the executive and the audit of these accounts [146]. Additionally, some studies have suggested that the system of financial administration has strong connections in governance; however, there appear to be weak financial administration among governments in developing economies. The concept of financial administration appears to also vary from system to system or it is determined by the geographical, political or economic condition of the State [147].

2.3.2 The Acquisition of Suitable and Sufficient Funds for Business-project

One major challenge this study sought to address is how to estimate the risk of financing SMEs business-project. Isaac S. D. et. Al. (2015) in their study indicated delays in payments and release of funds as among the top ten caused of government projects failures in Ghana. Also, other studies have shown that not only SMEs in developing economies have difficulties in acquiring suitable and sufficient funds for business-projects. Joseph C. et. Al (2011) mentioned that most public infrastructure projects does not have adequate commercial opportunities to be fully self-funding. And further stated that government now needs to develop new models for funding projects. To succeed, these models must be appropriate to both the individual project circumstances and government's prevailing investment objective. Joseph et al. further indicated that such models should consist of those which enable government to: leverage private sector investment in infrastructure assets; earn a potential return and recycle government capital; reduce the costs of financing new infrastructure and share in future recovery of financial markets; address demand risk for economic infrastructure. An important aspect of models is that it serve as a sensitivity analysis to determine the financial impact of different funding levels and the resultant need for special levies/assessments [108, 109]. The impact of the global

economic downturn which started in 2008 gave birth to the New Funding Model to improve funding for projects globally [150]. Empirical researches have shown that a growing number of project finance will involve innovative structures with capital from an increasingly sophisticated investor source. To achieve a successful financing arrangement, a financing structure must be designed – and that structure must be embodied in a set of contracts – which will enable each of the parties to gain from the arrangement. At different times, different capital markets may provide funds on the most attractive terms [151, 152].

i.Sources of Business Project-Finance

There are several sources to consider when looking for financing. It is important to note that there is the need to first consider how much money is need and when it will be needed. The financial needs of a business will vary according to the type and size of the business [153]. Figure D.9 in appendix D illustrates a model for acquiring sufficient and suitable funding for business projects. The funding options under internal sources is as follows: *i. Owner's funds / Capital* – financing own business-project is the most fundamental aspect of its management. When commencing a new business-project, very often the initial monies invested will come from the individual's personal savings. The tendency of business start-ups to approach relatives and friends to help finance the venture is also a widespread practice [154]. *Ii. Selling Assets* – According to Richard B. et al (2015) sale of asset may be in a form of shares or real assets. An asset sale offers the buyer more control to specify which assets are being acquired and, in effect, enables the buyer to "cherry pick" those assets and liabilities (if any) that it wishes to acquire [155]. *Iii. Retained Earnings* – Retained earnings or retained surplus refer to the portion of a company's profits that is kept for reinvestment into the business or for debt payments, instead of being paid out rather as dividends to shareholders [156]. However, Burgstahler and Dichev (1997) noted that, due to the fact that few options are available for raising capital, most executives generally prefers cash from operations as a major source of capital for re-investment and firms' growth [57]. *Iv. Bank Loan:* term loans are credits

extended to business concerns serves to differentiate them from many other types of loans, also having terms of more than one year that are made by commercial banks, insurance companies and other financial institutions [158]. Bank loans and advances are found to be convenient as far as its repayment is concerned. Banks generally do not interfere with the use, management and control of the borrowed money [159]. However, high interest rates continue to a major challenge in developing economies. Notably among them are policy rate, interbank rate(s), government securities rates and banks' lending and deposit rates which do not promote business growth in developing economies [160]. *V. Grants* – grants are a form of financial assistance given by government, independent foundations, philanthropists and private sector companies where there is no expectation or requirement that you repay the money. [161].

ii.Secrets to Successful Business Project Financing

Globalization has increase capital needs of businesses. Finance experts estimate that the business financing market exceeds $170 billion a year. However, this is still not enough to satisfy the capital needs of SMEs entrepreneurs and their funding requirements. When searching for capital to launch businesses-projects, entrepreneurs must remember the following secrets to successful financing: i. choosing the right sources of capital for a business. Ii. The money is out there; the key is knowing where to look. Iii. Raising money takes time and effort. Iv. Creativity counts. V. The World Wide Web puts at entrepreneurs' fingertips vast resources of information that can lead to financing; use it. Knowing these secrete is very important in business project financing because too many entrepreneurs get into financial deals because they needed the money to keep their businesses growing, only to discover that their plans do not match those of their financial partners [162]. These secrete as revealed clearly shows that securing sufficient and sustainable funding for business-projects requires much competencies. Basing on the above, one key indicators of estimating the risk of financing business-project in is *competency risk*.

2.3.3 Estimating Business Project Profitability and Value maximization

Currently, most investors and sponsors in most cases would provide financing to business-project on the guarantee that the funds would yield profits or lead to the maximization of the investment value. Monica T. (2014) accepted that the term profitability may be defined as the ability of a given investment to earn a return from its use. Monica T. continued to state that profitability is a relative concept whereas profit is an absolute connotation. Despite being closely related to and mutually interdependent, profit and profitability are two different concepts. In other words, in spite of their generic nature, each one of them has a distinct role in business. As an absolute term, profit has no relevance to compare the efficiency of a business organization. It must be noted that a very high profit does not always indicate sound organizational efficiency and low profitability is not always a sign of organizational sickness. Therefore, it can be said that profit is not the prime variable on the basis of which the operational efficiency and financial efficiency of an organization can be compared. To measure the productivity of capital employed and to measure operational efficiency, profitability analysis is considered as one of the best techniques [163]. Further, some empirical studies have also shown that there are several ways to measure a firm's profits other than just looking at their bank account statement which, to tell the truth, do not tell much about profitability. Those studies recommended three methods of analyzing how well a firm is doing: Margin (or profitability) ratios; Break-even analysis (based on revenues and on units sold) and Return on assets and on investment [164].

Profitability Ratios: according to Ľubica L., (2007) Profitability ratios reveal the company´s ability to earn a satisfactory profit and return on investment. L'ubica further stated that the ratios are an indicator of good financial health and how effectively the company in managing its assets [165]. The profitability of a firm is what will enable that firm to attract potential investment. The following are some profitability ratios [166].

Profitability Sustainability Ratios are:

- *Sales Growth* = Current Period – Previous Period Sales / Previous Period Sales

- *Reliance on Revenue* = Revenue Source / Total Revenue
- *Operating Self-Sufficiency* = Business Revenue / Total Expenses
- *Gross Profit Margin* = Gross Profit / Total Sales
- *Net Profit Margin* = Net Profit / Sales
- *Return on Total Assets* = Net profit after taxes / Total assets
- *Return on Equity* = Net profit / Average shareholder equity

The use of financial ratios provides indisputably valuable information on the activities of a firm and its financial position. However, care must be taken when using ratios [177]. This statement is a clear indication that ratios is not a perfect tool for estimating financing risks.

i.SMEs Business-project Value Maximization

Every firm exists to maximize stakeholder's value. This is true according to the shareholder theory which states that the primary purpose of a firm is usually defined as value maximization for shareholders [168]. Additionally, the maximization of a firm's equity is the present value of expected benefits always takes a form of cash flows that shareholders can expect from the firm. This definition also indicates that a firm's value can be maximized only when expected benefits are maximized over a long period. By this we should keep in mind that value maximization (of equity) is not equivalent to profit maximization. Profits are an accounting category and represent the historical performance of a firm; however, they are not the best proxy of what investors can benefit from a firm. Thus, from the perspective of the shareholder value maximization, expected future (free) cash flows are a far more important measure of a firm's performance [169].

Several studies have sought to help provide better understanding of stakeholder's value maximizations. Scholars as Rose and Mejer (2003) believe that the stakeholder orientation implies that a firm should be managed in the interest of all its stakeholders, not just in the interests of shareholders [170]. Is it also important to note that while advocating for the protection of the shareholders' rights there is also the need to promote

active cooperation between organizations and other stakeholders in order to create wealth, jobs and sustainability of financially stable firms [171]. According to Primož D., et. Al, if a firm does not follow the principle of value maximization in a long-run, it may be found in a situation, when it could not gather adequate financial resources for its investments. Also, Aswath D. (2011) offered some basic principles that would help to maximize firm's value by stating that firms must: Invest in projects that yield a return greater than the minimum acceptable hurdle rate, choose a financing mix that minimizes the hurdle rate and matches the assets being financed. And if there are not enough investments that earn the hurdle rate, return the cash to the owners of the firm (if public, these would be stockholders) [172]. This study finds it very hard to accept the last recommendation made by Aswath. The current global economy has proved that there are very limited funds for large number of SMEs business-projects, therefore, any decision to return funds back to owners would block all future funding opportunities from the fund providers. Also, such decision would be seen as financial management incompetency and risk averse attitude. That is why this study has identified competency as one a key indicator for estimating the risk of financing business-project [173].

Further, some scholars also believe that efficient market provide enough information needed to make sound investment decision that maximizes value. The notion that markets are efficient was first stated by Fama E. F. (1965). According to Fama an efficient market, on the average, competition will cause the full effects of new information on intrinsic values to be reflected "instantaneously" in actual prices [174]. Also, Clarke, J., et al. (2001) stated that many investors try to identify securities that are undervalued, and are expected to increase in value in the future, and particularly those that will increase more than others. Obviously, any edge that an investor possesses can be translated into substantial profits [175]. Figure D.10 in appendix D illustrates the functional objectives that firms must set to be able to maximize its value.

ii.Investment decision and Allocation of Funds to business projects.

Investor are searching for value to exchange with their funds, therefore, to attract funding for business-projects there is the need to prove that the proposed business-project can offer the highest value to investors. The decision to invest resources is one of the significant drivers of the business financial system. A well planned strategies supported by sound investments are very crucial in creating shareholders value. In real business project situation some investment decisions that confront managers include: the acquisition or investing in a financial instrument, a research and development project, marketing program, introducing additional working capital, and putting resources to new facilities. In either case, analyzing the positive and negative consequences to ensure a sound cash flow is very crucial. According to Harcourt, G.C. et al. (1967) investments can be replacement investments, where a physical asset is replaced; or investments can be net investments when, to the existing assets, new ones are added. And the decision whether to make investment or not depends on the investor's profit expectation [176]. Also, Virlics A., (2013) shows that investment decisions are made after a complete analysis of the investment project. Virlics A. further stated that one of the basic factors that influence the decision is the risk factor of the investment. This risk exists because it is uncertain that the cost of the investment will be recovered and a profit will be gained [177]. One major challenge associated with investment decision making is risks and uncertainty. Toma S.V. et al. (2012) stated that to better understand the concept of risk, it is necessary to make a clear distinction between risk and uncertainty. Risk refers to situations in which probabilities targets can be identified for possible results. In other words it can be quantified. Instead, uncertainty refers to situations or events about which there is sufficient information to identify objective probabilities. Therefore, when the information necessary for understanding and anticipating developments or changes that may occur in a particular context is either insufficient or unavailable, the situation is defined as uncertain. The key-element in making the distinction between risk and uncertainty is probability [178].

iii.The Investment Decision Process

According to Bierman and Smidt (2012) capital investment involves commitments of resources made in the hope of realizing benefits that are expected to occur in future periods [179].Also, Brealey et al. (2011) stated that a capital investment is an investment in a real asset expected to generate some future return [180]. Further, the Big Society Capital (2016) stated that effective investment decision entails eight principal steps: planning; screening; analysis; due diligence; investment decision making; investment deal-making; monitoring and evaluation; and reporting [181]. The figure D.11 in appendix D shows the pyramidal model of business project investment decision process according to this study. *Planning:* according to Todd L., (2013) planning refers to the process of deciding what to do and how to do it. Further, Todd L. indicated that effective planning takes into account diverse perspectives and impacts, allowing decision-makers to identify and implement the most effective ways to achieve goals. And also, the principle of good planning is that individual, short-term decisions should support strategic, long-term goals [182]. On the other hand investment planning involves deciding how best to put money or capital to work to achieve financial goals. Individuals and organizations fortunate enough to have money left over after paying the costs of living and or operations may be able to make that extra money to investing it to earn a financial return. The following basic steps are recommended for investment planning: 1. Setting investment goals. 2. Understanding your investment personality. 3. Designing an investment portfolio. 4. Selecting specific investments. 5. Managing and monitoring the portfolio and 6. Rebalancing or redesigning the portfolio, if needed [183]. Therefore, successful investment in SMEs business project must commence with effective planning.

Another task is *Screening:* The importance of investment is enormous, but not all investments must be positive. An investment can bring high-value returns for the company, but it can also happen that its implementation involves not recouping the investments and, therefore, the investment result is negative. Also, there are several models of valuation of investments to assist in the decision whether or not to undertake

investment. These models are divided into two main groups: static and dynamic. The difference between these two groups lies in the consideration of the time value of money. Whereas the dynamic group considers this factor, the static one does not take it into account. This is a great advantage for dynamic methods since they are more closely adapted to reality [184]. Screening is the surest way for investors to be clear about their core purpose and conditions for investment. Effective screening should answer the following: Is there an effective and well-designed mission? Does the proposed investment support the organization and its generation of impact? Does the organization show good governance? Is there regular and transparent reporting on both impact and financial performance? Is there assurance that the use of profits and assets will be in line with the mission? (Big Society Capital, 2016) If the answers to the above questions are positive then one proceed to the next step to conduct investment analysis.

Also, *analysis:* entails two basic forms of investment, that is, direct or indirect type of investing. Direct investing is realized using financial markets and indirect investing involves financial intermediaries and this can be an investment in financial assets or physical assets. Financial assets are divisible, whereas most physical assets are not. An asset is divisible if investor can buy or sell small portion of it. In real investment analysis one should consider the following: Marketability (or Liquidity), Holding period for investments, Information availability, Investment management process, and Investment policy. Further, investment analysis applicable tools are: benchmark, technical analysis, where the fundamental analysis in its simplest form is focused on the evaluation of intrinsic value of the financial asset. This valuation is based on the assumption that intrinsic value is the present value of future flows from particular investment [185]. *Due Diligence:* according to Hal Nelson et al. (2004) diligence strategy of a firm establishes the criteria for screening and evaluating potential investment proposals. And that the strategy outlines the types of investments that are consistent with the firm's investment philosophy [186]. Investment comes with so much uncertainties therefore the need for proper due diligence. Also, Todd R. T., (2008) mentioned that investment due diligence

is what separates professional investors from novices. And that the primary objective of any due diligence checklist is to answer four basic questions: What are the expected investment return characteristics? What is the investment risk profile? Are the people competent? And are the people honest? The difficulty in knowing exact outcome of every investment is what has necessitated the need for every investor to exercise due diligence [187].

Additionally, *investment Decision*: in Theoretical Economics investment is define as the production of capital goods. That is goods which are not consumed but instead used in future production. Also, to Finance Term, investment means buying of Assets [188]. There are three main forms of investment; this study believes that knowing them would facilities sound business project investment decision: Physical investment, Financial Investment and Security Investment. Figure D.12 in appendix D illustrates the three forms of investment which SMEs entrepreneurs can venture into. To Mintzberg et al. (1976) decision making consist of three phases, namely: identification, development and selection. Although these phases do not need to occur sequentially, however it can be affected by dynamic factors [189]. However, Cyert and March (1963) believe decision making process follows four concepts: Organizational learning, Uncertainty avoidance, Quasi-resolution of conflict and Problematic search [190]. These studies show that competency very key in making sound investment decision. The figure D.13 shown in appendix D illustrates investment characteristics which this study believes investors must pay critical attention to before they venture into any form of business project. From the above there is no doubt that investment decision require a holistic approach and analysis of all factors that can in one way or the other affect the investment returns. The above literature also reveals the relevance of financial management in risk estimation. According to Usman A. A., (2017) good financial management will help organizations to: Make effective and efficient use of resources; achieve objectives and fulfill commitments to stakeholders; become more accountable to donors and other stakeholders; gain the respect and confidence of funding agencies, partners and beneficiaries; gain advantage in

competition for increasingly scarce resources; and prepare for long-term financial sustainability [191].

2.4 Overview of Global Business-Project Financing

Businesses undertake series of activities which are either in a form of short term of long term business projects. The term project finance which according to Bruce C. (1996) is used loosely by academics, bankers and journalists to describe a range of financing arrangements. Also, the term in trade journals and industry conferences is described as a new financing technique; however this is actually a centuries-old financing method that predates corporate finance [192]. Project financing techniques is believed can be traced back to 1299A.D. when the English Crown financed the exploration and the development of the Devon silver mines by repaying the Florentine merchant bank, Frescobaldi, with output from the mines where bankers held a one-year lease and mining concession and they were entitled to as much silver as they could mine during the year [193]. Another study revealed that project finance can be traced to the Roman and Greek merchants who used project financing techniques in order to share the risks inherent to maritime trading. However, modern project financing terminology is largely an exercise in the equitable allocation of a project's risks between the various stakeholders of the project. This means that the origin of the project financing technique can be traced back to this principle [194]. Also, Rickard W. (2008) affirms the origin of project finance can be trace to the Romans and the Greeks. Rickard stated that project finance has been used by the Romans and Greeks as solutions to raise funds to export goods to other parts of the known world [195]. On the other hand, Dentons et al. account that project finance started in the UK in the 70's where limited recourse lending in the UK took off in the early 1970s when lenders started making project finance available for the development of some of the early oil and gas fields in the UK continental shelf [196].

One common feature is that early projects that were financed were relatively few and far below as there was a relatively small pool of lenders prepared to finance projects.

Project finance typically entails borrowing money through bonds, loans, or other financing mechanisms. Project finance is typically used for large capital projects in cases in which using "pay-as-you-go" does not make good planning and programming sense, because the project's capital needs would consume most, if not all, available funding and still often fall short of being fully funded [197]. Also, project finance involves creation of a legally independent project company financed with nonrecourse debt (and equity from sponsoring firms) to finance investment in single-purpose capital asset e.g. power plant, oil or gas pipeline system, school [198]. Clearly, the above definition revealed that raising funds for any kind of business project should not focused on one particular or single sponsor. Further, Project finance is generally used to refer to a non-recourse or limited recourse financing structure in which debt, equity and credit enhancement are combined for the construction and operation, or the refinancing, of a particular facility in a capital-intensive industry [199]. Additionally, project finance has been defined as the process of financing a specific economic unit that the sponsors create, in which creditors share much of the venture's business risk and funding is obtained strictly for the project itself.

Also, project finance creates value by reducing the costs of funding, maintaining the sponsors financial flexibility, increasing the leverage ratios, avoiding contamination risk, reducing corporate taxes, improving risk management, and reducing the costs associated with market imperfections [200]. According to Rashi A. S., project finance is the long term financing of infrastructure and industrial projects based upon the projected cash flows of the project rather than the balance sheets of the project sponsors. It involves non-recourse financing of the development and construction of a particular project in which lenders looks to the revenue expected to be generated by the project for repayment of its loans and to the assets of the project as collateral for its loan rather than to the general credit of the project sponsor [201]. Undoubtedly, most business projects require stable, continuous, sufficient and long-term finance due to the fact that typical project will begin to generate cash after its completion.

i.Types of Project Finance

To facilitate the financing of projects different types of projects will require different forms of financing in a developing economy setting. Therefore, this study believes that there is the need to identify the various types of financing designed especially for financing projects in developing economies. The Public-Private Partnership Manual (PPPM), (2004) indicates that the finance types available for project implementation include: public finance, corporate finance and project finance [202]. The figure D.14 in appendix D shows the finance types available for projects implementation.

***a) Public Finance*:** The term public finance is made up two key works *'public'* and *'finance'*. The exact shade often depends upon the substantive qualified, and in some expressions more than one sense is vaguely present; in others the usage is traditional, and it is difficult to determine in what sense precisely the thing in question was originally called public [203]. Also public relating to or involving people in general, rather than being limited to a particular group of people [204]. Finance on the other hand according to George W. B. (2008) is an academic and a professional discipline devoted to the study and practice of making "investments. An investment is anything owned or controlled and that has the potential to increase future consumption at the expense of current consumption [205]. The above definitions: *public finance is an investment in a business project where funding is raised from the general public to facilitate consumption by the general public*. Also, Public finance is a type of finance in which the government funds the project through its own equity or through borrowed funds [206]. On the other hand public finance is a study of collection of revenue from the public by the government and spending it for the welfare of society. Although an important part of economics, public finance, as a science is older than economics itself [207].

One major of developing economies is internal revenue mobilization; this can be attributed to a number of reasons including: mismanagement of funds and lack of quality of projects funded with public fund. Hugh Dalton (1922) stated that public finance is concerned with income & expenditure of public authorities and with the adjustment of

one with the other [208]. Also, Carl P. (1921) stated that public finance is the science which deals with the activity of statesman in obtaining and applying the material means necessary for fulfilling the proper functions of the State [209]. Indisputably, all the above scholars have proved that it is possible for developing economies to raise resources from the public to implement development projects. However, one common critique about all the above definitions is that the authors did not provide any tool to estimate the risks in funding such projects to guarantee return on investments. Figure D.15 in appendix D represents the scope of public finance. The scope of public finance covers: *Financial Administration* – aims to control processes and operations of public revenue, public expenditure and public debt [210]. *Public Revenue* which is concern about all those sources from which the government derives its revenues [211]. *Public Expenditure* – is thought to be the beginning and end of the collection of revenues by the government [212]. *Public Debt* – is circumstances when public revenue is not able to fully cover public expenditure, the only option for the government is to borrow from the public to meet the financing gap. Huge public debt affects production, consumption, income distribution and economy growth. Research has shown that developing countries have distinct debt dynamics from that of developed ones. However, successful debt reduction requires fiscal consolidation and a policy mix that supports growth; fiscal consolidation aiming to reform structural weaknesses preferred over myopic measures; and realizing the fact that debt reduction is bound to be time consuming [213].

b) Corporate Finance: Corporate finance is the kind of financing in which a private company borrows funds to construct a project which is very likely not too capital intensive and repays borrowed money from operating income. Corporate finance entails: *Capital Budgeting* – the process of planning and managing a firm's long-term investments is called capital budgeting. In capital budgeting, the financial manager tries to identify investment opportunities that are worth more to the firm than they cost to acquire. *Capital Structure* – a firm's capital structure (or financial structure) is the specific mixture of long-term debt and equity the firm uses to finance its operations. The financial manager has

two concerns in this area. That is: how much should the firm borrow? In other words, what mixture of debt and equity is best? The mixture chosen will affect both the risk and the value of the firm. Second, what are the least expensive sources of funds for the firm? Firms have a great deal of flexibility in choosing a financial structure. *Working Capital Management* – The term working capital refers to a firm's short-term assets, such as inventory, and its short-term liabilities, such as money owed to suppliers. Managing a project's working capital is a day-to-day activity that ensures that there are sufficient resources to ensure the activity continuity and to avoid costly interruptions and unnecessary delays of the project [214]. Also, according to Edward M. E. (2013) corporate finance is a specific area of finance that analyzes the financial decisions of corporations. That is, investment or capital budgeting decisions, financing decision and day-to-day operations [215]. The structure corporate finance has been presented in figure D.16 in appendix D.

The success of every project not only depends on finance but also the adherence to investment principles also plays a crucial role. Aswath D. (2001) offers some basic investment principle to guide the use of corporate finance to fund projects. Aswath believes that in corporate finance investors should invest in projects that yield a return greater than the minimum acceptable hurdle rate. This shows that corporate finance for project is suitable for projects that can offer higher returns than normal investments. The hurdle rate should be higher for riskier projects and reflect the financing mix used, that is owners' funds (equity) or borrowed money (debt). Also, the returns on projects should be measured based on cash flows generated and the timing of these cash flows; they should also consider both positive and negative side effects of these projects. Aswath also maintained that managers must choose a financing mix that minimizes the hurdle rate and matches the assets being financed. And suggested that if there are not enough investments that earn the hurdle rate, return the cash to stockholders [216].

One key personnel in project finance is the financial manager whose duty among others is to raise funds for the project and to also control the inflow and outflow of funds

from the project. Financial manager is also expected to put in place financial controls measures that will neutralize all investment risks and guarantee higher returns. Therefore, the last suggestion to this study is seen as an easy way to avoid taking risk. The basic principle in finance assures us that '*the higher the risk, the higher the returns on the investment'*. However, it must be noted that the "return" will depend on the stockholders characteristics; such as the ability to properly estimate risks and be fully prepared to face those risks. Therefore using corporate finance to fund project require project financial mangers to become high risk takers with the objective to maximize the value of the investment. The primary objective of corporate finance is the maximization of shareholder value through the application of short-term and long-term strategies that assist in obtaining new funds either from equity or debt sources. Secondly, corporate finance is concentrated on the investment decisions made by a company in order to achieve the maximum potential return among a set of new ventures and projects. A well-structured capital budgeting strategy will successfully allocate the company's funds and resources and will gradually grow the wealth of the shareholders through time [217].

According to Gyanendra K. S. (2017) corporate finance is the area of finance that deals with the sources of funding and the capital of corporations and the actions that managers take to increase the value of the firm to the shareholders, as well as the tools and analysis used to allocate financial resources [218]. The above definition clearly shows that corporate finance is the sum-total of project finance. In theory there seem to be common views expressed by scholars on corporate finance. According to Copeland & Weston (2013), the most important theme of corporate finance is that the objective of the firm is to maximize the wealth of its stockholders [219]. Also, Brigham and Gapenski (1988) in their book stated that we operate on the assumption that the management's primary goal is stockholder wealth maximization which translates into maximizing the price of the common stock [220]. Additionally, Van Horne (2004) also indicated that the objective of the firm is to maximize its value to its stockholders [221]. Further, Brealey & Myers (1980), explain in detail by stating that success is usually judged by value;

shareholders are made better off by any decision which increases the value of their stake in the firm and that the secret of success in financial management is to increase value [222]. Above all, Gyanendra (2017) presented what this study term as the interaction of corporate finance managers' functions which when followed would support project financing. This is shown as figurer D.16 in appendix D

ii.Project Finance from 1980 – 2016

Since creation, humans have endeavored to create value and improve their surroundings through designing and execution of business projects. These developments are consistently and exceeding becoming the breakthrough of what technically, organizationally and financially been impossible. Modern history provides abundant examples of most impressive landmarks of business projects such as the Burj Khalifa skyscraper, the EURO-Tunnel, the Hong Kong-Zhuhai Bridge, the Ichthys oil field and offshore of Australia. In 2015 alone, a total of 275 billion USD loans were invested in PFs. Many of these projects were implemented in high-risk environments, such as the Chad-Cameroon oil pipeline and the Petrozuata oil field in Venezuela [223]. The origins of modern project finance can be traced date back to the middle ages when the British Crown financed silver mines through non-recourse loans from Italian merchant banks [224]. However, project finance started gaining roots and became a common wide-spread practice until the early twentieth century oil field exploration in the United States. The spread of project finance is believed is the result of the global financial crisis in 2008 [225]. However, with the exception of the project bonds mar ket, project finance lending has proven remarkably resilient to financial market turmoil. By 2013 project finance loans recovered from 249.3 billion USD in 2009, to a pre-crisis level of 415 billion USD (Müllner J., (2017).

According to S&P Global Market Intelligence report on project finance default and recovery study from 1980-2014, the annual default rate increased from 0.9% in 2013 to 1.3% in 2014. However, after ten (10) years of project finance origination, marginal default rates become more consistent with investment grade. On the other hand project

finance loan recovery rates average 77% with a median of 92%. While restructuring represents the most used strategy and resulted in the strongest recovery rate outcome of all loan remediation strategies, averaging 91% [226].

There are quite a number of consequences relating to the financing of business-projects in developing economies ranging from technical, managerial, financial, economic and political risks. One key point to note in project finance is that there is the need to clearly separate each project being financed into a financially and organizationally independent project to allow researchers to observe managerial strategies and their outcomes more clearly, and without the empirical distortions emanating from multiple investments within a corporate balance sheet [227, 228]. It is believed that from 1980 to 2014, over 7000 projects originated globally out of which 80% of projects were believed to have originated on or before 2009. In 2014 alone, there were over 300 new projects reported representing a 31% increase over past years (Arnold S. G et al, 2016). Table E.6 and table E.7 in appendix E represents Cohort Age by Region (years) and the Cohort Age by industry (years). The table 2.3 shows that African and Middle East combined represented only 8.3% of projects origination from 1980 to 2014. This revelation is no satisfying because the two continents are dominated developing economies which require more project finance.

Also, one interesting revelation is that 38% of global project finance went into the power industry, while 28.9% went into infrastructure. However, these are projects that required highly and specialized skilled labor force which most developing economies are known to lack. This means that developed economies that have abundance of such skills are always at advantage. This trend reveals what this study term as "*project sponsors dominion"*, where sponsors are seeking to invest in sectors that they are assured of having full control and influence. As a result developing economies efforts of creating jobs through business projects implementation continue to yield not positive impact. Figure D.17a and figure D.17b represents regional and industry cohort projects originated

globally from 1980 to 2014 and the project finance distributions by regions as shown in appendix D.

A careful study into project finance from 2015 showed that the Global Project Finance recorded a total ofUS$230.9 billion going into 765 deals in 2016. This represents a decrease of 16.8% from. The Power sector saw the most growth in market share with 9.5% increase, representing 48% of the global market and generated US$110.9 billion in proceeds from 471 transactions. Additionally, the fourth quarter was the most active period, reporting 30.3% of the annual volume at US$16.9 billion. However, the largest deal in the year was the US$2.8 billion Cheneire Energy deal. Additionally, a total of US$123.3 billion from 387deals went into EMEA project for the full year 2016, representing an increase of 12.7%. Also, the power sector recorded a 6.5% upward trend in 2015, with 222 deals valuing US$47 billion. Becoming the fourth largest deal globally is the Borealis Swedish Electricity transaction deal [229]. This study observed as unfortunate once again that developing economies which lack most developmental project in areas of infrastructure, energy and the like was underrepresented in terms of the largest projects financed globally in year 2016.

Although there was a 12.7% increase in Europe, the Middle East, and Africa (EMEA) in project finance but this is not encouraging because EMEA is much dominated by developing economies. What this study believed what constituted to this trend is the high risks associated with financing business projects in developing economies. Figure D.18 in appendix D represents the regional project finance breakdown from January to December 2016. From figure, the power sector attracted the largest funding; representing 48% of the total global project finance. This revelation is raises the following questions from this study: What is the rational for investing nearly half of the global project finance in one sector? Has all investors lost interest to invest in other sectors and are now competing for majority ownership in power sector? Finance strategy of spreading risks through investment in multiple portfolio been ignored by experts? What would happen to future global projects finance, should the power sector fail? And finally, does the estimation of

the risks of financing power business projects entail a holistic scientific approach? This study provides scientific base answers to these questions. Table E.8 in appendix E illustrates top project finance deals signed in 2016. The first concern of this study is that majority of the funded project were implement in the developed world leaving most developing economies in their struggles to raise funding for their projects. Secondly, all the huge project finance deals signed favored the power sector. Once again this trend raises the following questions: Can a nation attain the desire state of development by investing nearly half of its resources in the power sector? What lessons can nations which do not have power resources learn from this trend of global investment? The proceeds from investments in various sectors from 2015 to 2016 are represented in table E.9 in appendix E. Table E.9 shows that 2016 year recorded 16.8% decline compare to 2015 proceeds, re US$46,545 million in value. Sadly, proceeds for project finance in Sub-Saharan African which includes project finance proceeds from Ghana recorded a huge downward trend of 48.3%. This is a worrying situation as most of these countries; especially Ghana has huge project finance needs. However, table E.10 and table E.11 in appendix E reveal the top five project finance deals that were signed in 2016 by EMEA and the corresponding proceeds by sector.

The up and down trend in global project finance can be attributed to the key pressures on projects finance which is a typical issues relating to sponsors' expertise, currency unavailability or shortage, local currency convertibility issues, regulatory complexities and the environmental and social issues in a given sector [230]. These observations constitute risks of financing business projects which must be estimated properly to guarantee higher return on investments. Also, figure D.19 in appendix D illustrates a bar graph of EMEA top five deals in 2016. From the bar graph there was an increase in project finance in all the five sectors which dominate EMEA project finance. Even though proceeds from Ghana project finance for the periods 2015-2016 according to table E.13 in appendix E saw an upward trend, the impact of those projects on fighting youth

unemployment was not much felt since those projects required specialized skills that most Ghanaian youth do not have.

iii. Project Finance from 2016 – 2017

Global project finance registered a 19.4% decline from the first quarter of 2016, to total US$43.3 billion from 162 deals in first quarter of 2017. The Power sector accounted for 63.4% of market activity, with US$27.5 billion in proceeds from 123 transactions. EMEA Project Finance totaled US$17.0 billion from 60 deals for the first quarter of 2017, down 45.9% year-on-year. The Power sector saw a 23.4% downturn from the same period in 2016, with 43 deals at US$8.5 billion. Asia Pacific and Japan Project Finance in the first quarter of 2017 totaled US$15.9 billion from 62 issues, increased 55.9% compared to the same period last year. The US$3.4 billion facility for Indonesian PT Bhumi Jati Power was the biggest deal globally [231]. One may wonder where such huge financing could come from. However, private companies could play a major role in investing in the sector. Such companies in most cases offer long-term financing solutions for developing countries with flexible structuring. Figure D.20 in appendix D illustrates project finance breakdown by region for the first quarter of 2017. The graph shows that EMEA tops the most project financed region in 2015 and 2016.

However, this trend appears to change in 2017 with Asia-pacific and Japan regions equalizing. Also, global project finance saw a totaled of US$112.6 billion from 332 deals in the first half of 2017, showing a 11.5% decline compared to same period last year. It is the lowest first half volumes since 2013. Asia Pacific and Japan is the only region that showed growth, recording the highest half year volume since 2012. Also, the EMEA Project Finance totaled US$43.6 billion from 135 deals for the first half of 2017, shows a 45% decline for the year. For the first time he Power sector showed a 21.2% downturn compared to 2016, with 88 deals at US$18.9 billion. Comparatively, the decline in the half of 2017 saw a 7.9% an increase in project finance compare to the first quarter of the same year [232]. The figure D.21 in appendix D represents project finance breakdown for the first half of 2017. Further, available data indicates that global project finance loans

reached US$157.3 billion from 528 deals in the first nine months of 2017, representing a 2.9% decrease from the same period last year. Once again, the Power sector saw an increase of 8.8% compared to 2016. The data also shows that the power sector was the main driver of market activity, with US$85.3 billion from 360 deals, with the US$1.6 billion loan of TPF II being the largest loan completed in the third quarter globally.

Unfortunately, EMEA Project Finance loans totaled US$61.5 billion from 209 deals in the first nine months of 2017, representing a 42.1% decrease compared to 2016. On the other hand the Power sector recorded a 32.2% decrease in activity from the same period in 2016, with 130 deals at US$25.8 billion [333]. The figure D.22 in appendix D shows the breakdown of project finance by region for the first nine months of 2017. The above information clearly shows that the only major project finance recorded in African recently was undertaken in Mozambique. The project amounted to amounted to $4879.5 million US dollars. Clearly, this study wonder the kind of impact such huge project finance could have on the fight against youth unemployment in Mozambique. Typical oil and gas project involves the usage and application of complex and complicated equipment that require highly skilled personnel that most developing economies do not have. The position of this study on the said project has been affirmed in the project company's own press release. According to Eni 2017 the project construction was led by the Floating Liquefied Natural Gas (FLNG) unit, a symbol of engineering expertise, with a capacity of around 3.4 MTPA (million tons per year) and it is believe to be the first FLNG in Africa and only the third globally [234]. This feature of the project alone tells you that not up to 10% Mozambicans will form part of the project team. Once again, the root of this can be link to 'competency' which is one of the indicators used in this study to measure business project financing risks. The table E.14 in appendix E illustrates top global project finance deals signed in 2017. Also, table E.15 illustrates the proceeds from project arrangers in 2017 as shown in appendix E.

The above information on global project finance reveals a worrying situation which calls of the development of an effective way to estimate the risks of financing projects

especially in developing economies. In a situation in which more than half of global project finance goes into one particular sector is seen as an act of *'increasing business project financing risks'* since diversification is one major tool for reducing investment risks. It is worth noting that spreading your money across a range of investments is one of the best ways to reduce risk and protect against sudden falls in any particular market, sector, or individual investment. With a diversified portfolio of investments, returns from better performing investments can help offset those that under perform. Although, diversification alone does not ensure you will make a profit, nor protect you fully against losses in a declining market. But it can reduce the risk of experiencing a serious loss of wealth as the result of being over-committed to a single investment [235].Also, the level of risk associated with a particular investment or asset class typically correlates with the level of return the investment might achieve. The rationale behind this relationship is that investors willing to take on risky investments and potentially lose money should be rewarded for their risk. Further, if investor a particular investor puts all of the money to invest into a promising young company, it could make a great deal of money if the company succeed or could lose everything if the company fails to get off the ground. By contrast, if investor another investor puts money into a diversified venture, it may not make a fortune, but also far less likely to end up losing everything. In the context of investing, reward is the possibility of higher returns [236]. This study wonders if higher risks always yield higher returns. This is why there is the need to effectively estimate the risks of financing every singly business project, which is why this study is being conducted. Table E.16 illustrates EMEAs project finance proceeds for 2017 as shown in appendix E. The table unfortunately shows that project finance proceeds suffered a downward growth in all the developing economies with the exception Nigeria. Strangely Ghana was not represented in the 2017 project finance proceeds recorded as at the time of this study. The absence of Ghana in the table E.16 in appendix E tells the challenges surrounding project financing in the Ghanaian economy.

The JP Labuschagne (2017) report makes us understand that the government is the largest owner of most business projects. That is, governments own between 57% and 90% of tracked projects per region, showing the importance of their role in promoting SMEs Business project financing. Unfortunately, it is believed that nine out of 10 global megaprojects (projects with a value of at least US$1bn) are either over budget or over time, while overruns are not limited to those projects most of which are located in African. However, this study believes that with proper estimation of the risk of financing such projects the above challenges would be overcome. Globally, over 900 project finance deals reached financial close in the year ending 2015. However, Africa saw a total of 31 transactions worth about US$7.5 billion in 2015. A large portion of these were in the renewable and power sectors. Available data shows that the infrastructure spend in Sub-Saharan Africa could reach US$180 billion per year by 2025, with a focus on transport and power, and private sector financing will be vital for achieving growth. However, the region continues to face challenges in the areas of project bankability, access to and availability of funds, political instability and a regulatory framework that remains under development [237]. If the infrastructure spending alone on Sub-Saharan Africa could reach US$180 by 2025 as projected, then there is the need for the development of effective model that would help to estimate the risk of financing such project in developing economies. Administration and finance structures to be put in place to administer those projects. Also, Project finance adds layers of complexity to a transaction relative to balance sheet financing. This complexity often requires significant coordination of parties. This coordination can often cause delays. The upfront investment in both time and resources for a project finance transaction tend to be higher [238].

iv. Project Finance Background and Characteristics

Project financing can be traced way back to at least 1299 A.D [239]. A considerable cost associated with the project is the cost of capital or the costs of obtaining the financial resources to implement the project, this therefore calls for an effective model to help estimate the risk in funding such capital and financial resources. There is no singular

definition of project finance [240]. However, this does not prevent this study from settling on some of the definitions that have been accepted by scholars. Project finance is a means of financing a company created for the specific purpose of owning, constructing and operating a project with limited or no recourse to that company's shareholders, in a way that enables financing from multiple sources of capital, or multiple investors, against repayment from the company's future cash flows. Similarly, project finance is also known as limited or non-recourse financing. (Mohamed Badissy, 2013). Also, Gatti (2008) defined project finance as the structured financing of a specific economic unit that the sponsors create by means of share capital, and for which the financier considers cash flows as the source of loan reimbursement, whereas project assets only represent collateral. Further, Nevitt and Fabozzi, 2001) define project finance as the process of financing a particular economic unit in which a lender is satisfied to look initially to the cash flows and earnings of that economic unit as the source of funds from which a loan will be repaid and to the assets of the economic unit as collateral for the loan [241]. Additionally, Larry W., (1980), World Bank (1994) and David G. and James W., (2014) have all provided some definition on project finance [242,243, 244].

a) Characteristics of Business-Project Financing

The Features of project finance are important to understanding project financing because there is no consensus definition of project finance, even among the most successful project finance providers in the world. Thus it is the features of project finance and characteristics of project finance that define the industry or, at the very least provide a framework. However, the characteristics of project finance are mainly in most definitions provided by scholars. However, Gordon M. B., and Bruce C., (1998) believe most projects share the following characteristics: Independent entity with a finite life, Capital-intensive, Non-recourse or limited recourse financing, Highly leveraged with debt accounting for usually 65% to 80% of capital in relatively normal cases, tends to be Long term, Controlled dividend policy, has many participants and tends to be characterized with the allocated risk, and costly. Also because many risks are present in such project

financing, often the crucial element required to make the project go forward is the proper allocation of risk. However, it will be completely impossible to achieve success allocation of risks if those risks are not properly estimated.

On the other hand João M. P. (2017) believes project financing characteristics falls into five distinctive features. That is: 1. The debtor is a project company (special purpose vehicle – SPV). 2. Financiers have only limited or no recourse to the sponsors. 3. Project risks are allocated to those parties that are best able to manage them. 4. Cash flow generated by the project must be sufficient to cover operating cash flows and service the debt in terms of interest and debt repayment, and lastly, 5. Collateral is given by sponsors to financiers as security for cash inflows and assets tied up in managing the project. What distinguish Joao's view from Gordon and Bruce is that while the later is looking at the general features of project finance, the former is much concern about the financial actors and activities that goes into project finance. However, Corielli et al. (2010) maintain that the primary characteristics of project finance is the existence of a network of nonfinancial contracts organized by the Special Purpose Vehicle with third parties, often involving the sponsoring firms as well [245]. The figure D.23 in appendix D illustrates the principal characteristics of project financing identified by this study. The figure shows the following as the characteristics: Stakeholders, financial resources, nonfinancial resources, and value creation**.** Authors such as Caselli S., and Gatti S. (2005) [246], Marco S., (2004) [247] Argenti, P., (1998) [248], Phillips (2003) [249], Jensen, M., (2002) [250], Ulas Akkucuk U. (2015) [251] and the EconomicPoint [252] provides extensive studies on these characteristics. Also, Gilbert E., (2005) [253], Dey (2004) [254], Chen S. (1995) [255], Moutinho and Lopes (2010) [256], the National Australia Bank Limited et al. [257], Miceli T. J., (1997) [258], Kiyoshi K., Toshihiko O., and Masamitsu O., (2006) [259], Posner R. and Rosenfield A. (1977) [260] and Lepak D.P. et al [261] and in their studies have also talked much about these characteristics.

However, Haddadia A., et al (2015) and (2016) [262, 263] believe that value creation in projects such as construction depends on three main roles that should be assessed. The

figure D.24 in appendix D illustrates the role of the key stakeholders in project value creation. On the other hand, Womack and Jones (1996) believe that value can only be defined by the ultimate customer. And it is only meaningful when expressed in terms of a specific product (a good or a service, and often both at once) which meets the customer's need at a specific price at a specific time [264]. Also, Sánchez and Iniesta (2007) [265], Holbrook (1999) [266], Sødal et al. (2014) [267] have contributed various knowledge on value creation to customers and investors. All the studies when analyze critically proves that "value creation starts at project designing / developing state. Therefore, any failure at this stage would me a failure to properly estimate the idea risk. Available researches have shown that value Maximization is one of the core objectives of all projects. Where value management in project portfolios has centered on the maximization of commercial value and identification of future business prospects [268]. Rappaport (1985) also stated that creating shareholder value is seen as the centre of all strategic actions [269]. However, since most projects are expected to generate enough cash flow to be able to pay back all investments and interests; the concept of value maximization has been focusing on the net present value of the project. This concept has resulted in a lot of scholars such as Baroum et al. (1999), Yang et al. (1992), Padman and Smith-Daniels (1993), Icmeli and Erengüç (1996), and Özdamar et al. (1994) have all devoted time to throw more light on value maximization in terms of net present value and cash flow [270, 271, 272, 273, 274].

However, Jeff B. (2007) questions *what good is a project that is on time, on budget and ends up providing your organization with no bottom-line results whatsoever?* Jeff further stated that beyond the project meeting time and budget, creating value also play a crucial role in ensuring a project success. A project that does not truly deliver value is worthless at best [275]. This study is of the view that value maximization follow through from start to the end of the project value creation process in project life cycle as stated by Max W. R., (2009) in the model developed the *Business Case Life Cycle – Need for a Project* model. The figure D.25 in appendix D presents the business case life cycle – need for a project to show how the value creation process leads to value maximization [276].

Also, it must be noted that this model is has a direct link with return on investment risk indicator identified by this study. This study is convinced that the estimating the risk of financing SMEs business projects in developing economies poses a great challenge to current and potential investors. As a result, this study looks critically at the project feasibility and risk analysis using the Net Present Value (NPV), Cash Flow analysis, and Internal Rate of Return (IRR) management theory to prove the need to assure investors of effectively estimating the risks on investments returns [277, 278].

Also, understanding the structure of typical project finance would assist in the effective estimation of project financing risks. Project finance is characterized by several long-term contracts which include supply, construction, concession agreement, and also a range of partnership structures that are applied to align incentives and prevent any opportunistic actions by any party involved in the project. This study has now established that the motive of project financing is to spread risk among several investors. However, this study believe that with proper risk estimations analysis through the application of finance tools most project finance risks can be avoided completely or reduce to reasonable level. This study also holds the notion that effective monitoring of managerial actions and ensuring a coordinated effort by all project-related parties can only be achieve through proper management. The figure D.26 in appendix D presents project finance structure. The fact is that in project financing, large-scale projects might be too big for any single company to finance on its own. Therefore, widely fragmented equity or debt financing in the capital markets would help to diversify risks among a larger investors base. However, this might make it difficult to control managerial discretion in the allocation of free cash flows and avoiding wasteful expenditures. Unfortunately, analysis of 2015 – 2017 global project finance report showed otherwise. There were several instances where major national projects with high risks are being financed by one major investor. Also, the use of non-recourse debt in project finance further contributes to limiting managerial discretion by tying project revenues to large debt repayments, which reduces the amount of free cash flows. Moreover, non-recourse debt and separate incorporation of the project

company make it possible to achieve much higher leverage ratios than sponsors could otherwise sustain on their own balance sheets [279].

2.5 Business Projects Financing Risks

The core of project finance is the analysis of project risks, namely: Construction risk, Operating risk, Market risk, Regulatory risk, Insurance risk and Currency. Most importantly, project financing also focuses on striking a balance between the need for sharing the risk of sizeable investments among multiple investors and, at the same time, the importance of effectively monitoring managerial actions and ensuring a coordinated effort by all project-related parties [280]. This is an indication that what all investors seek to do through project finance is to spread the risks associated with investments. The above stated risks when analyze carefully can be grouped into: 1. *Idea Risks* (IR) – where the risk estimation forms part of the idea to invest in a particular sector. 2. *Competency Risks* (CR) – here we are talking about the ability to properly estimate, allocate and manage all identified risks. According to Gatti (2008) project finance is characterized by the following risks: activity planning risk, technological risk and construction risk or completion risks. Also, supply risk, operating risk, and demand risk and interest rate risk, exchange risk, inflation risk, environmental risk, regulatory risk, political risk, country risk, legal risk as well as credit risk or counterparty risk. And all these risks are allocated contractually to the parties who are believed to be in position to best manage them. When analyzed carefully the above project risks are also closely linked to Return on Investment Risks (RIS).

Project finance is a relatively new financial discipline that has developed rapidly over the last 20 years. However, each year billions of dollars of investments are made in projects around the world using project finance techniques. It must be noted that project finance is not the same thing as financing projects, because projects may be financed in many different ways. Traditionally, large scale public sector projects in developed countries were financed by public-sector debt, while private sector projects were financed

by large companies raising corporate loans. In developing countries, projects were financed by the government borrowing from the international banking market, multilateral institutions such as the World Bank, or through export credits (Yescombe E. R. (2002). The National Australia Bank Limited et al. stated that the meaning of risk can vary. For some it may mean the possibility of losing a portion of their investment due to market movements or a poor decision. For others it may mean not enough income is produced from the investment. Another measure of risk is the variability of returns over time known as volatility. Generally, risk can be viewed as the chance of failure in achieving objectives or goals. Risk is part of investing but it can be measured and managed within an investment portfolio. Taking on some risk is necessary for higher returns. Also, taking on greater short-term risks may be necessary to receive the long-term returns needed to achieve a lifestyle goals and objectives. However, taking on too much may prove to be a mistake. Taking on too little may cause regret and failure to achieve the returns needed to meet a lifestyle goal [281]. This attitude of risk is what makes very complex to estimate and manage. However, this study combined both practical and theoretical techniques to provide an effective way to estimate SMEs business project financing risks.

According to Miceli, T.J. (1997) the problem of risk sharing is recognized as that who should bear a loss when a risk occurs [282]. Also, Posner et al. proposed that one of the major problems that arise in risk sharing in the contract law is that which party would bear a loss if they could have foreseen that contingency [283]. In other words, the problems in project finance contract are: Which party can thwart or have power over the foreseen risk more efficiently? And if the risk cannot be prevented or controlled, which party is in a better position to protect themselves against the loss? These questions prove the knowledge gaps that exist in project financing which this study sought to fulfill. However, Kiyoshi K. et al. (2006) stated the following as risk sharing principles: The party who can assess and control the risk should bear it, and calls it the first principle. If none of the parties cannot assess or control the risk, the party who can bears it easier or procure the insurance from market should bear it, and calls it the second principle. They further

indicated that in the case that the principal is a public sector, it has usually more capability for bearing the risk and is expected to play the role as a deep pocket under the second principle [284]. These reveal the amount of risks that are involve in financing SMEs business project and the complexity of those risks.

2.5.1 Project Cost Estimation

The ability to accurately estimate the cost of a particular project plays a crucial role in estimating the risk of financing such projects. According to Project InterLinc (2004) the reliability of project cost estimates at every stage in the project development process is necessary for responsible fiscal management. Also, unreliable cost estimates result in severe problems in programming, budgeting, and planning and ultimately results in loss of credibility. Project cost estimation is not an exact science; however, estimators are expected to prepare reasonable project cost estimates that represent the cost to complete the project. Therefore, project alternatives and their associated cost estimates must be thoroughly compiled by diligently using all of the available data, modifying that data with good judgment and using past cost estimating experience so that the cost estimates can be used with confidence. It must be noted that cost estimates, in a sense, are never completed. They are not static, but have to be reviewed continually to keep them current [285].

Also, Doit (2018) indicated that project underestimation of resources and costs are one of the most common contributors to project failure. As such, project managers should be knowledgeable of and consider the various industry techniques and tools in the definition and execution of project cost estimation [286]. However, the PMBOK define project cost estimation as the iterative process of developing an approximation of the monetary resources needed to complete project activities. Project teams should estimate costs for all resources that will be charged to the project the PMBOK explained further that cost estimates are a prediction that is based on the information known at a given point in time. And includes the identification and consideration of costing alternatives to initiate and complete the project [287]. By far this explanation of project cost estimation point to the

fact of the critical role the estimations of the risk of financing business project play in project success. Therefore, cost estimates should be reviewed and refined during the course of the project to reflect all changes that are happening due to internal or external environmental factors which poses high risks to the project. The accuracy of a project estimate will increase as the project progresses through the project life cycle to ensure that the project succeeds. The figure D.27 in appendix D illustrates cost estimates at each stage of a project.

The estimates include *Input, tools and techniques, and output:* this is very subjective depending on the context that it is being used. According to Jim P. et al. (2013) ***input*** is the raw materials that provide a basis for security and justice programs and this can include money, technical expertise, relationships and personnel [288]. Also, input in project management is any particular item, product, or mechanism, that is; an internal or external device that can be used for the purposes of triggering the progression of a particular process [289]. The input cost estimation include the following activities: *Cost Management plan* - the process of ensuring the project meets objectives in terms of financial performance and placing responsibility on those in charge of any aspect of project scope (managers, designers, contractors) to perform within established budgets and take appropriate management action [290, 291]. The figure D.28 in appendix D shows the model of project cost management. *Human resource (HR) plan* – the human resources plan is a roadmap that describes how an organization will meet its current and future human resource needs based on the strategic plans of the organization [292]. Also, Brian J. S., et al. stated that human resource planning is the formal process of linking business strategy with human resource practices [293]. This study believes that administration and control play a pivotal role in project cost management through budget preparation. The fact is that it entails the process of systematically arranging and coordinating the human and material resources available to any organization for the main purpose of achieving stipulated goals of that organization [294].

i.Tools and Technics

In project cost estimating there is the need for the applications of effective and appropriate tools and techniques to ensure that there is no over or under cost estimating. Therefore, an estimate as a quantitative assessment of a future endeavor likely cost or outcome. However, Luigi B., stated that the four major types of estimation techniques regularly used today in industry practice as expert judgment, analogy, decomposition, and statistical (or parametric) methods. Where, *Expert judgment* is based on the brainstorming of one or more experts who have experience with similar projects; a consensus mechanism then produces the estimate. *Analogy estimation* is based on comparing previous, similar activities, analyzing the most relevant project and service attributes, and trying to figure out the new project's effort and cost values through estimator experience. And *Decomposition* is a top-down estimation technique that tries to make a granular list of initially planned tasks [295]. On the other hand, the PMBOK (1999) mentioned the following: Analogous estimating, Parametric modeling, Bottom-up estimating and Computerized tools as project cost estimating tools and techniques. The figure D.29 in appendix D presents the four major project cost estimating tools and techniques.

Output – the result of *processing* one or more inputs is by the application of tools or techniques. This applies to project management processes used to manage the work of the project. In project management the output may be in the form of a tangible component or product, a document, or an intangible service or result. Therefore: Outputs are created by a process. It is worth noting that most outputs are inputs to successor processes. However, most project management outputs are used within the project to manage the work [296]. In other words the output of a project should create value for both the investor and other stakeholders. Output also forms part of the sequence of events to bring about benefits or change over time in a project However, this can only be achieved if all risks are properly estimated and controlled. It should be noted that in project cost estimating there is the need for assessment or problem analysis process, combined with a review of critical stakeholders to help the project team or operational unit to identify the outputs and

outcomes that must be achieved in order to reach the project ultimate strategic objective. Typically, a project team can identify a large number of relevant outputs and outcomes. However an important task in developing an expected output is to reach a consensus on a small core set of critical outcomes. Outputs and outcomes represent those causal links in the results chain that bridge the gap between the current status and the desired high-level results. Starting with the end strategic objective(s), practitioners can backtrack to outline project logic with immediate and intermediate outcomes [297, 298]. The figure D.30 in appendix D illustrates the results of an output.

ii. Project management

The term project management is very essential in project feasibility analysis. Historically, the word "project" was first used in or around the sixteenth century and it's derived from the Latin *projicere* (= throw forward). The Latin root thus suggests movement, a trajectory, a certain relationship with space and time. The implied process involves: a point of departure used as a base, from which one throws oneself forward towards a goal. It is believed that the word and concept were first used by architects. In the fifteenth century, Filippo Brunelleschi made two innovations in the architectural practice of his time [299]. The Oxford English Dictionary defines "project" as "An individual or collaborative enterprise that is carefully planned and designed to achieve a particular aim, (Exp. A youth employability project). However, the Project Management Institute define project as being temporary in that it has a defined beginning and end in time, and therefore defined scope and resources. Also, a project is unique in that it is not a routine operation, but a specific set of operations designed to accomplish a singular goal. So a project team often includes people who don't usually work together sometimes from different organizations and across multiple geographies (PMBOK).

On the other hand, the Chartered Body for the Project Professionals also stated that a project is a unique, transient endeavor, undertaken to achieve planned objectives, which could be defined in terms of outputs, outcomes or benefits. A project is usually deemed to be a success if it achieves the objectives according to their acceptance criteria, within an

agreed timescale and budget [300]. Also, other scholars as Avraham S. et al. (2005) and Duncan W.R., (1996) have all provided various definitions to the term *'project'* and its *life cycle* [301, 302]. The figure D.32 in appendix D also illustrates typical project life cycle. As typical of all human undertaking, projects are performed and delivered under certain environmental settings which exert some forms of constraints and risks. Conventionally, these constraints according to the PMI are scope, time, cost and quality. Typically, projects are time bound. In most cases certain outputs and value are expected to be delivered at a given time. Also, the scope of work to be done is always clearly define. Further, cost constitutes a greater part of every project implementation. Lastly, all project stakeholders want value maximization; therefore, quality in project is very crucial to all stakeholders.

Time in project is very crucial and can be categorized as Elapsed and lead time. Project *Elapsed Time* is the total number of calendar days (excluding holidays and other non-working days) that have been consumed for performing the project or its certain part (phase, task, activity and job. It is calculated by the following formula [303]:

Total Effort x Number of Working Days / Number of Hours Worked Per Day x Number of People

Where:

- Total Effort refers to the amount of work that human resources can produce in one workday.
- Number of Working Day is usually 5 (from Monday through Friday).
- Number of Hours Worker per Day shows how many hours an employee has consumed to make effort in one workday.
- Number of People means the total number of workers involved in the project.

Also, in project management ***lead time*** is the time it takes to complete a task or a set of interdependent tasks. The lead of the entire project mostly is the overall duration of the critical path for the project. Lead time is also the saved time by starting an activity before its predecessor is completed. Per the Project Management Institute's definition

PMI (2008), lead is a dependency between two activities. However, Avraham S. et al., (2005) in their studies believed that despite each project having a unique set of goals, there is enough commonality at a generic level to permit the development of a unified framework for planning and control. On the other hand, Kolltveit B. J., et al. (2004) believe the two key factors are of importance and can have the greatest impact on project early phase, they are; uncertainty and the influence of project stakeholders. [304].

iii.Project management core components

The Association for Project Management (APM, 2018) identifies the following as project management core components: defining the reason why a project is necessary; capturing project requirements, specifying quality of the deliverables, estimating resources and timescales; preparing a business case to justify the investment; securing corporate agreement and funding; developing and implementing a management plan for the project; leading and motivating the project delivery team; managing the risks, issues and changes on the project; monitoring progress against plan; managing the project budget; maintaining communications with stakeholders and the project 73tilization73; provider management; and closing the project in a controlled fashion when appropriate. Also, Till J. et al. (2009) stated the following as the characteristics of a project: consists of temporary activities that have predetermined start and end dates; uses restricted resources; it has a single goal or a set of goals; all events are to be realized to develop a single and new output; usually has a budget; usually a project manager is responsible for co-coordinating all activities [305]. Therefore, project managers must convince themselves of having adequate understanding of the above project components and characteristics to guarantee effective feasibility study.

2.5.2 Project Finance Feasibility

Financing of projects may take the form of either corporate project finance structures where lenders derive security for repayment. Mostly, project financing will involve a Special Purpose Vehicle (SPV), an independent legal entity established for the purpose of undertaking the project into which lenders and project sponsors contribute debt and equity to fund project costs [306]. However, financing high-profile infrastructure projects not only requires lenders to commit for long maturities, but also makes them particularly exposed to the risk of political interference by host governments. Therefore, project lenders are making increasing use of political risk guarantees, especially in emerging economies. The understanding of the term feasibility would help to appreciate its importance in project financing. Feasibility is the process of investigating a need, problem, and solutions in sufficient detail to determine if a solution is economically viable and worth developing. The feasibility process includes consideration of alternative solutions and the benefits and economic viability of each [307]. However, feasibility study defines the problem, possibilities of its solution, and at the same time evaluates if these solutions are feasible from technical, economic, social and political point of view [308]. Also, Tan A.A.L., (2000) stated that feasibility study involves market research and data collection, preliminary site investigations, checking with authority requirements, political, environmental, economic and social (PEST) analysis, strengths, weaknesses, opportunities and threats (SWOT) analysis, the project risks analysis and management, return on investment, cash-flow projections, architectural and town planning schematics sketches and preliminary engineering studies (geo- technical, infrastructures, traffic, transportation, etc) [309].

However, Tim Bryce maintained that feasibility Study represents a definition of a problem or opportunity to be studied, an analysis of the current mode of operation, a definition of requirements, an evaluation of alternatives, and an agreed upon course of action. [310]. The Figure D.31 in appendix D illustrates project feasibility analysis cycle. A careful analysis of the activities involved in project feasibility analysis revealed that

they are inter-connected; in that one activity leads to the other. Also, a break in either of the activities could render the entire process useless. These activities are: *Evaluation* – examining the cost effectiveness of the approach selected. *Review* – examination to ensure that all of the preceding elements are then assembled into a feasibility Study and a formal review is conducted with all parties involved. *Project Scope* – use to define the business problem and/or opportunity to be addressed. *Current Analysis* – require to defining and understanding the current method of implementation, such as a system, a product, etc. *Requirements* – must be defined and this depends on the object of the project's attention. Lastly, the *Approach* – represents the recommended solution or course of action to satisfy the requirements (Tim B., 2012).

i.Project Feasibility Analysis Methods

Predicting and analyzing the prospective financial performance of SMEs business projects is done using feasibility analysis tools and or techniques. Sanghoon A. et al. (2008) in their *"General Guidelines for Preliminary Feasibility Studies"* offered these as among the reliable methods for project feasibility analysis: Economic Feasibility Evaluation, Social Discount Rate, and Financial Feasibility.

a) Economic Feasibility Evaluation- they indicated that the economic feasibility analysis basically depends on **cost-benefit analysis**. A Benefit-Cost Ratio (BCR) is first calculated to evaluate economic feasibility. A BCR is the ratio of benefits to costs where both benefits and costs are expressed as discounted present values. They maintained that the costs and benefits to occur in the future are converted into present values, and the present value of benefits is divided by that of costs. Their work revealed that a project is generally economically feasible if the BCR is at least 1.0. This ratio could vary depending on the country; for instance in the U.S. The special standards for public investment analysis suggested by the U.S. Office of Management and Budget (OMB) explain that the BCR should be at least 1.25 for a project to be economically feasible in consideration of the excess burden resulting from tax distortion and the like. Below is the BCR formula:

$$BCR = \sum_{t=0}^{n} \frac{B_t}{(1+r)^t} / \sum_{t=0}^{n} \frac{C_t}{(1+r)^t}$$

Where B_t: Benefit at the time t, C_t: Cost at the time t, r: discount rate, and n: Duration of the concerned facility (period subject to analysis). Sanghoon A. et al. (2008) further stated that it is important to calculate the Net Present Value (NPV) of a project. The NPV is the total benefits minus total costs incurred by a project (both benefits and costs expressed in discounted present values of the base year). An NPV of at least zero means the project is economically feasible. Below is the NPV formula:

$$NPV = \sum_{t=0}^{n} \frac{B_t}{(1+r)^t} - \sum_{t=0}^{n} \frac{C_t}{(1+r)^t}$$

Also, the Internal Rate of Return (IRR) should be calculated too. It is to calculate a discount rate R where the values of benefits and costs converted into present values become equivalent. It is the discount rate that reduces the NPV of the project to zero. It is believed there is economic feasibility if the IRR is higher than the social discount rate. The formula for IRR is shown below:

$$IRR \ : R \ \ such \ \ that \ \ \sum_{t=0}^{n} \frac{B_t}{(1+R)^t} = \sum_{t=0}^{n} \frac{C_t}{(1+R)^t}$$

However, feasibility is not always the same in BCR, NPV, and IRR calculation. They believed NPV calculation evaluates the flow of net benefits with the value in the start year of a project, but it is not normalized with respect to the scale of projects, making it inappropriate for comparison among projects. For example: when doubling both benefits and costs, the NPV automatically doubles. It is, therefore, inappropriate to compare the profitability of two different projects with the same characteristics only based on their NPV. Furthermore, they reveled that IRR calculation does not consider the scale of projects, but it has a shortcoming in that an IRR is not calculated according to the profit

generation structure. They also seem not to trust the BCR by stating that BCR value differs according to which items are classified as benefits or costs, but this is the one that is generally used as an investment evaluation standard [311].

b. Social Discount Rate – according to Sanghoon A. et al. one of the most important parameters used in the economic feasibility evaluation of government-financed projects is the social discount rate. In this method the discounted benefit and cost values are determined by the social discount rate, and as a result, the BCR. In their 3rd edition of the "General Guidelines" the social discount rate based on a real rate of 7.5% was applied to all projects except water resources projects, and a 6.0% real rate was applied to water resources projects as they should be considered for a longer term than other projects. They offered that to estimate an appropriate social discount rate, a basic interest rate, and social time preference rate (STPR), financial discount rate and such were considered. Below is the formula for the STPR:

$$STPR = \rho + \mu.g$$

Where: ρ refers to a discount rate of future consumption under the assumption that per-capita consumption does not change. G: is an annual per- capita consumption increase rate, and μ: is the elasticity of marginal utility of consumption. In the end, $\mu \times g$ is to reflect the diminishing effect of marginal utility due to consumption change [312, 313].

c. Financial Feasibility Analysis – the financial feasibility analysis according to Sanghoon A. et al. (2008) is conducted for projects of which feasibility in terms of law and policy is recognized at the first-step of checklist evaluation and that can be pursued as Build To Order (BTO) projects, or for those proposed as BTO projects in the project plan submitted by the responsible department. The most commonly used financial analysis tool is the discounted cash flow methods. Where the discounted cash flow methods estimate future cash flows and calculate present values discounted by the opportunity cost of capital (e.g. weighted average cost of capital). They also stated that the discounted cash flow methods include the Net Present Value (NPV), Internal Rate of Return (IRR), Profitability Index (PI) methods, and more. The NPV method is the sum of expected cash

flows, both incoming and outgoing, that are discounted by the weighted average cost of capital. Below is the formula as presented:

$$FNPV = \sum_{t=0}^{n} \frac{R_t}{(1+r)^t} - \sum_{t=0}^{n} \frac{C_t}{(1+r)^t}$$

Where: R_t: refers to the incoming cash flow of period t, and C_t:to the outgoing flow of period t.

$$0 = \sum_{t=0}^{n} \frac{R_t}{(1+FIRR)^t} - \sum_{t=0}^{n} \frac{C_t}{(1+FIRR)^t}$$

Also, the profitability index (PI) method which is the ratio of the net value of incoming cash flows divided by that of outgoing cash flows (cash flows occurring from investment) is used. They held the view that if the PI is higher than 1, the project is judged to be financially feasible. That is while the NPV method measures the financial feasibility of an investment proposal as an absolute amount, the PI method measures the ratio of cost verses profit in a proposal as a relative ratio. Below is the formula as presented.

$$PI = \sum_{t=0}^{n} \frac{R_t}{(1+r)^t} / \sum_{t=0}^{n} \frac{C_t}{(1+r)^t}$$

d. Financial Discount Rate Calculation- in this method the calculation of the present value of cash flows expected from the concerned project and estimated cash flows should be discounted by an appropriate financial discount rate. Sanghoon A. et al. (2008) believes that the appropriate rate here is the weighted average cost of capital, which is the capital cost of each source of financing (equity capital and debt capital) average-weighted by its component ratio. Below is the formula:

$$r_0 = [(1-T) \times r_b \times L] + [r_s \times (1-L)]$$

R_o: Weighted average cost of capital

r_b: Cost of debt capital (capital cost of debt)

r_s: Cost of equity capital (capital cost of equity)

T: Corporate tax rate

L: Debt ratio (=debt/equity capital)

On the other hand, Lenka T. et al. (2004) believes that project feasibility study can be best done through ***Reflection method*** (ReMe). They define the reflection as a careful thought and as a sign of critical considering of all processes which make impacts on organization's results as well as on individual's performance. Reflection is characterized by learning from reflecting on past results and experiences. It is based on critical thinking which can be define as crucial skill to manage any activity in the organization and contains problem – solving, predicting and searching for a new opportunities. They stated the four fundamental elements of critical thinking as: Targeted and objectives based management approach; Decision – making based on evidence, data not on guessing; and Managing and leading of all processes is based on logical principals. Approaches are implemented to match and balance the problems occurred by human character. The ReMe is a general tool to perform a quantitative and qualitative assessment and evaluation of any processes [314].

However, the PMBOK (2013) offered these as project feasibility analysis techniques: ***Desktop research*** – this method requires that a thorough research via Internet, specialized publications and books be conducted to identify stakeholders and provide baseline information for the feasibility analysis. ***Expert consultation*** – this technique advice that technical, economic or legal advisors be consulted to offer expert advice and support to the project. The ***Modeling techniques*** – the techniques entails What-If Scenario Analysis; a process of evaluating scenarios in order to predict their effect, positively or negatively, on project objectives. Mostly the outcome of the what-if scenario analysis can be used to assess the feasibility of the project schedule under adverse conditions, and in preparing contingency and response plans to overcome or mitigate the impact of unexpected situations (PMBOK Guide, 2013).

Also, Kenneth K.H. (2005) offers another simple but effect method; **Cost Engineering** for conducting project feasibility analysis. This method focuses on ascertaining project profitability during the early phase. This method aim is to determine whether any project or investment is financially desirable [315, 316]. Kenneth K.H presented the four unique criteria for profitability aside what has been discus above as: Pay-out time – the time required to recover the original investment in depreciable facilities from profit and depreciation. Pay-out time with interest – the time required to recover the varying investment in depreciable facilities from profit, depreciation and interest charge. Return on original investment (ROI) – the benefit of an investment divided by the cost of the investment and the result is interpreted as a percentage or a ratio. Where:

ROI = (benefit from investment –cost of investment) / cost of investment.

Return on average investment (RAI) – the benefit of an investment is divided by average outstanding investment and the result is interpreted as a percentage or a ratio. Where,

RAI = (benefit from investment – cost of investment) / Average outstanding investment.

In all the above techniques, some common conclusions are that they are all geared towards measuring the project profitability, economic viability, cash flow, and providing assurances to investors and other stakeholders.

2.5.3 Project Risks Analysis

One of the key demands of project financing analysis is to identify real and potential risks that have the propensity of negatively impacting the progress and success of the project. As João M. Pinto, (2017) put it; the core of project finance is the analysis of project risks, namely construction risk, operating risk, market risk, regulatory risk, insurance risk, and currency risk. It is very important to note that the meaning of risk can vary. For some it may mean the possibility of losing a portion of their investment due to market movements or a poor decision. For others it may mean not enough income is

produced from the investment. Another measure of risk is the variability of returns over time known as volatility. However, that risk can be viewed as the chance of failure in achieving objectives or goals. Noting that, risk is part of investing and it can be measured and managed within an investment portfolio. Taking on some risk is necessary for higher returns, but the challenge is how to determine the appropriate level of risk. Also, taking on greater short-term risks may be necessary to receive the long-term returns needed to achieve a lifestyle goals and objectives. While, taking on too much may prove to be a mistake. And taking on too little may cause regret and failure to achieve the returns needed to meet lifestyle goals [317].

A careful analysis of the above statement reveals the following: there is no investment without risks, there is the need to effectively estimate the risks associated with every investment undertaking, also, know your risk tolerance level and venture accordingly would help to minimize the impact on risk on expected returns. In recent times, most project managers would agree that the treatment of risk is the main element in project finance decision making. According to Franco M. et al. (1973) the key current questions regarding risks are: how risk should be measured, and how the required return associated with a given risk level is determined? [318].The above questions raised by Franco M. reveals a dissatisfaction of in Harry M. (1952) suggested simple approach for dealing with risk [319]. Risk is a most slippery and elusive concept. It is hard for investors, let alone economists to agree on a precise definition. Risk is the possibility of suffering harm or loss [320]. However, Fama E. F., et al. (1972) are of the view that if risk is the chance of loss or achieving returns less than expected, it would seem to be logical to measure risk by the dispersion of the possible returns below the expected value. However, risk measures based on below-the-mean variability are difficult to work with, and furthermore are unnecessary as long as the distribution of future return is reasonably symmetric about its expected values [325].

The Modern portfolio theory begins with the premise that all investors are risk averse. The theory educates investors how to combine stocks in their portfolios to give them the

least risk possible, consistent with the return they seek. The theory believes that diversification is a sensible strategy for individuals who like to reduce their risks and presents three forms of risks that confronts investors as; *total risk*: which is the summation of all other risks. *Systematic risk*: arising from the basic variability of stock prices in general and the tendency for all stocks to go along with the general market. However, systematic risk cannot be eliminated by diversification. And *unsystematic risks*: the variability in stock prices (and, therefore, in returns from stocks) that results from factors peculiar to an individual company. Examples: a strike, the discovery of a new product etc [322]. The truth is that investors have to receive higher rates of return on investment bearing greater risk. As Burton G.M., (1981) put it *'all investors are like my wife, they are risk-averse. But they want high returns and guaranteed outcomes'* [323]. What project investors must take note of is the positive relationship between risk and return.

Every SMEs business project undertaken in developing economies has a substantial degree of risk associated with it that must be properly estimated. Robert D., (2016) defines project risk management as the process involved with identifying, analyzing, and responding to risk. Risk is part of every project we undertake and the objective is always that to maximize the results of positive risk whilst minimizing the impact and consequences of negative events [324]. Also, the works of Gatti S. (2008) identifies risks associated to projects as the pre-completion phase risks: activity planning risk, technological risk, and construction risk. Completion risk, risks related to the post-completion phase: supply risk, operating risk, and demand risk; and risks related to both phases: interest rate risk, exchange risk, inflation risk, environmental risk, regulatory risk, political risk, country risk, legal risk, and credit risk or counterparty risk [325]. These risks are very critical since they can affect the project progress and output in diverse ways. SMEs must know that business projects and offerings are sensitive to developments and more complex risks have been brought about by the current knowledge economy. However, business project setbacks can be reduced substantially by embracing the correct risk estimations methodology as an integral part of project planning. One key fact to note

is that planning and controlling project risk is a vital activity that would secure high-quality project outcomes.

Risk in project is inevitable and risk is an uncertainty that matters which can affect project objectives negatively or positively. Pieplow B., et al. (2012) believes that identifying, communicating, and managing project risks require a risk management culture. However, the required attributes needed for successful project risk management are: Risk decision-making based on balancing project values such as cost, schedule, and quality; stewardship; efficiency; teamwork; joint ownership of risks and responsibilities and accountability. Also, all approaches to project risk management strive to maximize both efficiency and effectiveness. Although the details of risk processes may differ depending on the project, risk management has three important parts: identification, analysis, and action [326]. Understanding project risks enables project teams to more effectively fulfill public service expectations. Assessing project risk and uncertainty informs decision making in project development and delivery mission. These decisions contribute to public safety and clarify project expectations. Informed project risk management adds value on many levels to every project delivered [327, 328].

Conclusions

Financing is seen as the major challenge confronting all business projects implemented in most developing economies; particularly in Ghana. As a result, this chapter analyzes the existing body of literature on the risk of financing SMEs business projects, behavioral economics, integral estimation method and fuzzy rule as the foundation for the successful designing, implementation and completion of business projects in developing economies. Also, this chapter does analyses on behavioral economics theories, integral estimation method and fuzzy rule to prove its effectiveness in estimating risks of financing SMEs business projects in developing economies. For the purpose of this study, this study define finance as: *"the administrative function of identifying, contacting, negotiating and fulfilling terms and conditions, obtaining and*

managing monetary resources from individuals, financial and or nonfinancial institutions or government to fulfill the financing needs of business-projects in an organization".

One of the most important functions of finance is ensuring the efficient 84tilization of funds. This means that all SMEs owners must develop the ability to raise funds from multi sources, keeping in relation the implications in particular, risk attached. However, before developing any funding model there is the need to establish its purpose. Some funding model purpose includes: to determine the level of unfunded liability; make informed decisions about the allocation of resources; to have full knowledge of the risks of underfunding or overfunding; to avoid/mitigate against controllable risk; to assist in making decisions about appropriate reinvestment levels; and to find an level of equilibrium for the owners. Currently, most investors and sponsors would in most case provide funds for business project only on the guarantee that their funds would yield profits or lead to the maximization of their investment value. Empirical studies have shown that there are several ways to measure a firm's profits other than just looking at their bank account statement which, to tell the truth, do not tell much about profitability.

Most studies recommend three methods of analyzing how well a firm is doing: Margin (or profitability) ratios; Break-even analysis (based on revenues and on units sold) and Return on assets and on investment. This is so because businesses undertake series of activities which are either in a form of short term of long term business projects. It must be noted that the core of project finance is the analysis of project risks, namely: Construction risk, Operating risk, Market risk, Regulatory risk, Insurance risk and Currency. Most importantly, project financing focuses on striking a balance between the need for sharing the risk of sizeable investments among multiple investors at the same time. However, the reliability of project cost estimates at every stage in the project development process is necessary for responsible fiscal management. Also, unreliable cost estimates result in severe problems in programming, budgeting, and planning and ultimately results in loss of credibility.

Further, financing of business projects may take the form of either corporate project finance structures where lenders derive security for repayment. But one the key demands of project financing analysis is to identify real and potential risks that have the propensity of negatively impacting the progress and success of the project. It is very important to note that the meaning of risk can vary. However, the relevance of estimation of the risk of financing business project cannot be over emphasized, as it contribute to the effectiveness of the entire project team in fulfill the project goals and all stakeholders expectations. In light of these the next chapter of this research would focus on settling on the most effective research methods that would enable this study to achieve its goals and objectives.

CHAPTER THREE
RESEARCH METHODOLOGY FOR INVESTIGATING THE RISK OF FINANCING SMES BUSINESS-PROJECTS

3.1 Introduction

This chapter discusses the research methodology used to investigate how the risk of financing SMEs business projects impacts the return on investments in SMEs business projects implemented in developing economies; focusing on Ghana government's youth entrepreneurial and employability program as its setting. According to Hussey et al. (1997) an effective research methodology should addresses the following elements in a research study [329]: i. The rationale behind a research initiative for collecting certain information? Ii. How the information will be collected? Iii. What information will be collected? Iv. Where the information will be collected? V. How the information will be analyzed? It is important to state that a research is all about addressing an issue or asking and answering a question or solving a problem. Therefore, every research starts with identifying an issue, question, or problem; talking with people who want or need the study; find out what's already known about it; talking with experts and/or reading their reviews and the original research on the topic; planning and costing the study accordingly, and finally writing it up and submitting it for assessment [330]. However, no researcher will carry out all these activities involved in research without an 'aim' to achieve. In line with this, the aim of this study is to: Establish the relationship between the risk of financing SMEs business projects and the return on investment in those projects in developing economies; Identify the main the three main SMEs business projects financing risk factors that cause business projects success and or failures in developing economies, and Come up with conceptual model that will guarantee higher return on investment in SMEs business projects in developing economies and Ghana in particular.

3.2 Methodology

According to Saunders et al. (2009) research methodology involves the theoretical frameworks and learning of the various techniques that can be used in the conduct of research and the conduct of tests, experiments, surveys and critical studies. Saunders et al. further stated that both qualitative and quantitative methods may be used appropriately with any research paradigm. However, Guba and Lincoln (1994) indicated that questions of method are secondary to questions of paradigm which Saunders et al. define as the basic belief system or world view that guides the investigation, not only in choices of method but in ontologically and epistemologically fundamental way [331, 332]. The methodology of this research is based on the research onion model (Saunders et al., 2009). This model usefulness lies in its adaptability for almost any type of research methodology and can be used in a variety of contexts [333].

3.2.1 Research Philosophy

Understanding the term philosophy is very crucial in this study since it will help to explore new range of possibilities in this research. According to Russ P.W. (2015) philosophy is all of rational inquiry except for science. A better understanding of philosophy can be found by considering what sorts of things other than scientific issues humans might inquire into [334]. However, Marilyn M.A., (1988) believes that Philosophy is thinking really hard about the most important questions and trying to bring analytic clarity both to the questions and the answers [335]. But according to Adamson P. (2016) philosophy is the study of the costs and benefits that accrue when you take up a certain position [336]. One would have taught Adamson's definition could end the knowledge gap in defining the term 'philosophy' but here is what Buchanan A. (2014) also said in defining philosophy: *'I don't think it is any one thing, but I think generally it involves being critical and reflective about things that most people take for granted"* [337]. This study believes that most researchers have taken for granted the crucial need develop a conceptual model to effectively estimate the risks of financing SMEs business

projects, hence, the need to conduct this study. Most importantly, the primary value of philosophy is that it loosens the grip of uncritically held opinion and opens the mind to a liberating range of new possibilities to explore [338]. Therefore, this study would open the mind of other researchers and also liberate a range of new possibilities to explore in financing of SMEs business projects in developing economies.

According to May T., (2011) stated that the choice of research philosophy is defined by the type of knowledge being investigated in the research project [339]. However, Goddard & Melville, (2004) believes that research philosophies can differ on the goals of research and on the best way that might be used to achieve these goals [340]. On the other hand Bryman, (2012) is of the view that the set of beliefs concerning the nature of the reality being investigated defines a research philosophy. Above all, Saunders et al., (2009) provided the three major ways of thinking about research philosophy as: *ontology, epistemology and axiology*. This research holds the philosophical beliefs that: 1. There is high correlation between the risk of financing SMEs business project and the return on investment in SMEs business projects. 2. Accurate estimation of the risks of financing SMEs business projects will guarantee the expected returns on investments in SMEs business projects. 3. A conceptual model would effectively help to identify and control the risk of financing SMEs business projects and guarantee expected returns on investments.

3.2.1.1 The Research Ontology

According to Uschold and King (1995) ontology is a set of terms and their associated definition, intended to describe the world in question [341]. Also, Zajicek (2005) stated that ontology is concerned with what our surroundings (nature) actually are [342]. However, Tsoukas and Chia (2002) distinguishes two distinct ontologies. That is, “being” which locates reality in substances, things and events; and “becoming” which approaches reality through flux, flow and continuity [343]. Making it clear, Elkjaer and Simpson (2011) are of the view that each research study has its own ontology. That is Ontology

says something specific about different areas of reality [344]. Therefore, this research study sought to establish how SMEs projects financing risks factors impacts expected return on investment and which conceptual models would guarantee SMEs business project success? In other to establish this ontology there is the need to identify the indicators that constitutes the risk of financing SME business projects. This exercise can be termed as "a process" [345]. Estimation of the risk of financing SMEs business projects is in a state of instability, flow and permanence and this demands critical interventions. Also, there are multiple forms of reality that exist, this also bring to mind the theme of reasonableness in identifying those risks indicators [346] This research is based on the views that multiple players underscores the philosophy of "multiple forms of reality" in estimation of the risks of financing SMEs business. In light of this, an *inductive approach* was used to solicit the in-depth views and opinions of SMEs business projects financing in order to build the concepts of estimation of the risk of financing SMEs business project in developing economies. Also, this research uses narrative data and structural methods of analysis. This is because studies have shown that it is possible to build better process theory and better explanations in general through the use of narrative data and structural methods of analysis [347, 348]. To further make the findings of this study more realistic the *deductive approach* was also used to enable the researcher arrive at a reasoned conclusion by logical generalization of a known fact. Also this study developed a hypothesis (or hypotheses) based on existing theory, and then designing a research strategy to test the hypothesis [349, 350]. Additionally, this study applied the deductive approach of reasoning from the particular to the general and further applied using a causal relationship and or link that seems to be implied by a particular theory or case example that might be true in many cases. Furthermore, this study tested to see if this relationship or link did obtain on more general circumstances [351]. This research seeks to establish the correlation among indicators of the risk of financing SMEs business-projects.

3.2.1.2The Research Epistemology and Approach

Epistemology is concerned with the nature of human knowledge and understanding that can be acquired through different types of enquiry and alternative methods of investigation [352]. In this regard this study applies positivist, realism and interpretivist positions to develop its knowledge [353]. This study adopted the philosophical stance of the natural scientist. That is, working with an observable social reality to form generalizations similar to those produced by the physical and natural scientists. This approach was used to allow for the use of existing theories to develop hypotheses which will be tested and confirmed, in whole or part, or refuted, leading to the further development of theories which may then be tested by further research. The study also used highly structured methodology in order to facilitate replication [354]. Also, this study applied realism to show that reality is the truth in this study and that objects have existence independent of the human mind and to also opposed idealism theory that only exist in the mind. The truth is that, this assumption underpins the collection of data and the understanding of those data. According to Dobson (2002) a critical realist's position is that our knowledge of reality is a result of social conditioning [355]. This is exactly the position of this research. Additionally, this study used the interpretivism prove the understanding of the differences between humans in our role as social actors and objects. In the same way this study interprets the everyday social roles played by humans in terms of the risks of financing SMEs business projects in accordance with the meaning given to those roles in line with risks and financing. Studies have shown that certain tools used in a study depend on the nature of knowledge and this determines how we conceive of our surroundings and which tools we apply. The two basic tools to study our surroundings are: *quantitative and qualitative research*, where each is appropriate to different type of research problems. This was affirmed by Wand et al. (1993) when they indicated that observers gain their knowledge of the world by experiencing it and that for qualitative research, it is generally possible to investigate the world without influencing it or the

meaning of phenomena that is inherent to the phenomena and can be experienced by interacting with it [356].

According to Flick U. (2011) the quantitative approach is concerned with quantitative data [357]. Also, Bryman A. et al. (2011) held the view that qualitative approach is drawn from the constructivist paradigm. And the aim is to investigate how the respondent interprets their own reality [358]. However, Banister et al., (2011) indicated that the qualitative approach requires the researcher to avoid imposing their own perception of the meaning of social phenomena upon the respondent [359]. But some scholars believe this approach presents the challenge of creating a methodology that is framed by the respondent rather than by the researcher [360]. On the other hand Feilzer M. (2010) offers solution to this challenge by stating that an effective means by which to use the qualitative research approach is through interviews, or texts, where the response to a question can be open [361]. This approach was supported by Goddard and Melville (2004) who believe that this approach holds a number of accepted statistical standards for the validity of the approach, such as the number of respondents that are required to establish a statistically significant result [362]. However, May T. (2011) believe that the quantitative approach can be most effectively used for situations where there are a large number of respondents available, where the data can be effectively measured using quantitative techniques, and where statistical methods of analysis can be used. According to Nwankwo et al. (2010) quantitative research approach is underpinned by an epistemological standpoint, because it advocates that more emphasis be placed on actors interpretations [363]. More so, Hunt C., (1998) stated that qualitative methods such as case studies commonly follow realistic modes of inquiry, as their main objectives are to discover new relationships of realities and build new understandings of the meanings of experiences rather than verify predetermined hypotheses [364].

This research uses the qualitative approach to generate new knowledge and to identify the key indicators of the risk of financing SMEs business project in developing economies. Through this approach the study primarily explore to gain an understanding of underlying

reasons, opinions, and motivations of all actors involved in the financing of SMEs business projects. This approach was used to enable the researcher to gain insights into the problem and to develop ideas or hypotheses for the quantitative aspect of this research. The qualitative approach was also used to uncover trends in thoughts and opinions, and dive deeper into the problem. This study is a social research and represents an attempt to understand human behavior [365]. Further, the study also employed quantitative approach to enable the researchers to ascertain quantitative answers, analyze numerical change accurately, predict scores on SMEs business financing risk factors or variables that influence return on SMEs business projects investments and test the study hypotheses. The study also uses the quantitative approach to collect numerical data and analyze it using mathematically based methods such as the Return on Investment to explain the success rate of projects in developing economies. According to Creswell (1994) quantitative research as a type of research that is explaining phenomena by collecting numerical data that are analyzed using mathematically based methods [366]. Also, Cohen (1980) stated that quantitative research is social research that employs empirical methods and empirical statements. Cohen added that an empirical statement is a descriptive statement about what "is" the case in the "real world" rather than what "ought" to be the case [367]. Therefore, through this approach this research makes empirical statements about the "real" state of the risk of financing SMEs business projects in developing economies rather than what "ought" to be the case. Typically, this study expresses those empirical statements in numerical terms. Therefore, this study uses the quantitative approach to conduct empirical evaluations to determine the degree to which SMEs business projects achieve the expected returns.

3.2.1.3 The Research Axiology

This study uses axiology to guide the values that affect how the research is conducted and what is valued in the results of the research since epistemology does not really reflect upon our values [368]. However, Klenke (2008) believe that these beliefs and values are

made explicit by the researcher so that respondents and consumers of the research are aware of the context in which the research was conducted and have been exposed to critical examination. But Klenke further stated that the traditional scientific approach seeks research that is value free and unbiased [369]. Contrary the above, Cederblom and Paulsen (2001) stated that all research is value laden and biased [370]. One unique quality of this study is that it accommodated the values, opinions and beliefs of the researcher. This allowed the researcher to analyze the contributions of all participants leading to the production of basic subject matter which were generated numerically but were the understanding of the responses from the point of view of the researcher. Based on that, this study makes certain conclusions and offer recommendations based on the information provided by respondents.

3.3 The Research Strategy and Data Collection

Gathering and disseminating sound research backed by evidence is the best way of estimating the risk of financing SMEs business projects. This research employs strategies that make its findings useful to those it is intended for and need it most or may come across it coincidentally. Studies have shown that research strategy can be either quantitative or qualitative (Bryman and Bell, 2011). Also, research strategy is a general orientation to the conduct of business research. Several research methodologies have been identified by scholars such as Galliers (1991) who listed listing fourteen methodologies. On the other hand Alavi and Carlson (1992) used a hierarchical classification of three levels and eighteen categories. This study uses field experiments into real SMEs business project financing and their real life situations to enable the study achieve greater realism and diminishing the extent to which situations can be criticized as contrived. This study accept that using this method in practice is difficult when it comes to identifying which project to experiment on and how to achieve sufficient control to make replication viable. Also, the study uses surveys to obtain data about practices, situations and views at one

point in time through questionnaires and interviews through qualitative analysis. Further, the quantitative analytical techniques were used to draw inferences from data.

This study further examines the correlation indicators of the risk of financing SMEs business projects and has taken steps to ensure that no single relevant behaviors are manipulated. This study also employ interviews, evidences have shown that interviews can be used to explore and contrast patterns and to confirm or disapprove the patterns of behavior identified in earlier interviews [371]. Also, cultural and physical artifacts were observed in this study because it is believed enables direct observation of the events being studied and interviews with the persons involved in the events [372]. As a result, this study used in-depth interviews, observations and both primary and secondary documents were used to unravel the issues involved in the risk of financing SMEs business project in developing economies. The quantitative data of this study was collected through questionnaires and interviews: telephone and face-to-face interviews as well as mail and survey questions. Other, secondary data such as reports, articles, magazines and papers also form part of the quantitative data.

It must be noted that this is a scientific study which uses well-structured survey to describes the state of affairs as it prevails at the time of study, and analytic. That is, uses the already available facts and information and analyze them to make a critical evaluation of the subject [373]. The questionnaires to this research were given to a selected sample from a specific population of Ghana Youth Employment program staff, sponsors and participants (SMEs owners). The term ‘survey’ as applied to this research is a methodology designed to collect data from a specific population, or a sample from that population and typically utilizes a questionnaire and or an interview as the survey instrument [374]. Also, a quantitative questionnaire was used to obtain data from individual respondents about themselves, their work and financing risk indicators. Further, some of the respondents were interviewed to allow for probing questions, the number of interviews conducted were less because the distinct advantages in using a questionnaire versus an interview [375].

Scientific research studies have discovered that mislaid data and chaotic mistakes in data collection are often the leading causes of error in a survey [376]. To prevent this mistake, the primary data of this study was gathered by means of observation, interviews and questionnaire and involve quantitative and qualitative techniques. In other to increase the validity of this study, observation was [377, 378]. Justifying why observation was used in this study, Yin (2009) stated that observational evidence is often useful in providing additional information about a topic being studied [379]. Additionally, interview and questionnaires were administered through face-to-face, e-mails, field visit and telephone calls and on the social media. Importantly, the quantitative aspect of the study consists of numerical data.

3.4 Sample Type and Size

This study applied an expediency sampling based on available information from the database of Youth Employment Program SMEs projects in Ghana. A non-random sampling technique, where participants are specifically targeted was used to allow for maximum understanding of the underlying phenomenon of interest [380]. Also, purposive sampling to identify respondents who can enlighten the phenomenon of interest and can communicate their experiences was also applied [381]. In this regard the Youth Employment Program was chosen on the basis of having been in existence for over twelve (12) years; it was felt that the program have experienced several risks of financing business projects that would assist this study to achieve its objectives. This will also enable the study to generalize its findings since the programs share similar characteristics with other business projects implemented in developing countries.

Using Youth Employment Authority as this study's setting, the sample population was put into stratified sampling by dividing the population into strata; this was done to ensure that no population element is excluded [382]. A total of one hundred (100) sample size was drawn from each stratum using simple random sampling methods [383]. Further, a random number of each group was then selected to allow for the categorization population

according to particular features and characteristics such as the managerial staff, non-managerial staff and Participants. A total of 25 respondents were drawn from those in managerial position, another 25 were also drawn from those in non-managerial position, and a further 50 were also drawn from those participating in the program, to ensure that all participants are fully represented in this study.

3.5 Data Analysis and The Research Period

This study used content analysis to analyze the data collected from the observations and interviews made during the study. Further, the content analysis was used as a mechanism for determining key ideas and themes in publications and for measuring comparative positions and trends in reporting [384]. Additionally, data collected was analyzed using mathematically based methods of collecting and analyzing data. All relevant data were analysed using models, charts, tables, Microsoft excel and Statistical Package for Social Sciences (SPS) [385]. Furthermore, every single data collected from each population is presented separately to enable the study attain the desired results and level of importance.

This research was carried out from June 2016 to June 2019. The study used the Youth Employment Authority institution in Ghana as its setting. The main participants were the managerial staff, non-managerial staff and the program participants in Ghana as the case study.

Conclusions

A research is all about addressing an issue or asking and answering a question or solving a problem. Therefore, every research starts with identifying an issue, question, or problem; talking with people who want or need the study; find out what's already known about it; talking with experts and/or reading their reviews and the original research on the topic; planning and costing the study accordingly, and finally writing it up and submitting it for assessment. This research uses qualitative approach to generate new knowledge on estimation of the risk of financing SMEs business project in developing economies.

Through this approach the study primarily explore to gain an understanding of underlying reasons, opinions, and motivations of all actors involved in the administration and finance of projects in developing economies. Also, the study also employed quantitative approach to enable the researchers to ascertain quantitative answers, analyze numerical change accurately, predict scores on SMEs business projects financing risks indicators and factors that influence return on investment, and test the study hypotheses.

Through these approaches this research makes empirical statements about the "real" state of the risk of financing SMEs business projects in developing economies rather than what "ought" to be the case. Typically, this study expresses those empirical statements in numerical, qualitative and conceptual terms. The study also examines the correlation between the indicators of the risk of financing SMEs business projects and has taken steps to ensure that no single relevant behaviors are manipulated. However, it must be noted that this is a scientific study which uses well-structured survey to describe the state of affairs as it prevails at the time of study, and analytic. That is, uses the already available facts and information and analyze them to make a critical evaluation of the subject.

CHAPTER FOUR
ESTIMATING OF THE RISK OF FINANCING SMES BUSINESS-PROJECTS IN TERMS OF BEHAVIORAL ECONOMICS: SUING FUZZY LOGIC RULE AND INTEGRAL ESTIMATION METHOD

4.1 Introduction of Youth Employability Programs Models Introdution

This chapter presents the analysis of all relevant data collected from the various groups of the study and covered "*Estimation of the Risk of Financing SMEs Business-Projects in Developing Economies in Terms of Behavioral Economics: suing Fuzzy Logic and Integral Estimation Method"*. Data collected from each group and participants are presented separately to enable the research attain the desired level of importance. The analysis of relevant data was done using Excel software, models, tables and charts for the qualitative and quantitative analysis of the results. And covers data collected through questionnaire, reports, interviews, observations and records on the Youth Employment Agency programs in Ghana.

This study's data gathered revealed that the Youth Employment Agency (YEA) was established under the Youth Employment Act 2015 (Act 887) of Ghana to empower young people of Ghana to contribute meaningfully to the socio-economic and sustainable development of the Ghanaian. The objective of the program is to support youth between the ages of 15 to 35 years through skills training and internship modules to move from the state of being unemployment to that of employment. Since the sustainability of every program is very crucial, YEA was changed in 2009 from the traditional modules which had pay roll challenges to self-employment modules such as Trades and Vocation modules through public-private partnership. This was hopped would reduce the burden on payment of stipend for the paid internship module. In 2011, the program attracted international acclaim, with the British Broadcasting Corporation (BBC) ranking YEA as the best Youth Employment Program in Africa. Available data collected by this study indicated as of December 2012, the program had about sixty thousand (60,000) beneficiaries. In 2017, YEA beneficiaries rose to over eighty thousand (80,000). Unfortunately, YEA suspended

payments of allowances in April 2017 when it discovered that some two thousand nine hundred and ninety nine (2,999) beneficiaries were actually not at post but were being paid. A further eighteen thousand (18000) none-existing beneficiaries names were identified. This was costing the government of Ghana to lose about eight hundred and forty thousand US dollars ($840,000). Available data gathered also showed that the YEA introduced new modules and some of the existing modules such as Youth in Security Services and Trades and Vocation have been reviewed and expanded to meet the growing demand for youth employment in the country. Currently, the program has ten models as presented in figure 4.1 and table 4.1 below.

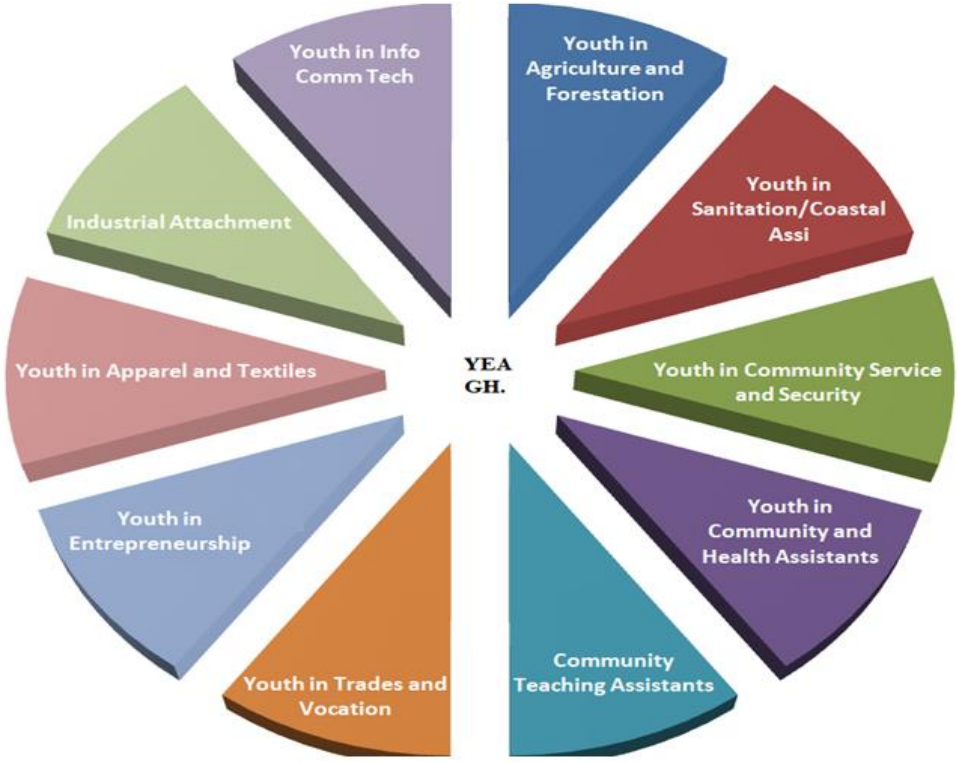

Figure 4.1 – YEA Program Modules, 2018

Source: Developed by the author

Table 4.1 – below presents a description of each module shown above.

Modules	Description
Youth in Agriculture and Forestation	Seeks to create employment opportunities for the youth through agriculture and its related businesses in order to contribute towards the nation's food security while they earn a living
Youth in Sanitation and Coastal Assistants	This module creates employment opportunities for the youth through maintenance of environmental cleanliness with special emphasis on our coastal belt
Youth in Community Service and Security	Offers employment opportunities for the youth by augmenting the human resource capacity of Ghana's security services within beneficiaries cited communities.
Youth in Community and Health Assistants	The module seeks to create employment opportunities for the youth by adding up to the staff strength of the Ghana Health Service while assisting in basic health care delivery to hard to reach communities
Community Teaching Assistants	Creates employment opportunity for the youth by adding up to the staff strength of Ghana Education Service in delivering pre basic and basic level teaching to communities with low teacher supply
Youth in Trades and Vocation	Seeks to equip the youth with skill sets to make them employable for the labor market and enable them become self-employed
Youth in Entrepreneurship	The objective of this module is to equip the youth with Entrepreneurial skills in order to create new crop of small business owners who will intend offer employment opportunities to others.
Youth in Apparel and Textiles	This module is to train the youth in the art of textile and garment making to make them employable with garment manufacturing companies or to set up their own businesses.
Industrial Attachment	Offers employment opportunities for graduates to gain hands on experience to boost their employability
Youth in Information Communication Technology	The target is to equip the youth with information technology skills set to make them employable for the labor market

4.2 Demographic Profile of the Respondents

It is very important to justify that the quality of a study is often better with sampling than with a census. This study used a simple random sampling to select 100 respondents, consisting of five (5) top management staff, twenty-five (25) non-management staff that facilitates implementation of the entire Youth Employment Program. Also, the demographic profile covers seventy (70) youth who are direct beneficiaries of the program most of whom have established their own small or medium enterprises under the program. In this study the beneficiaries covers those that participated in the program and have been able to establish successful businesses as well as those who also participated in the program but failed to establish successful businesses. The table 4.2 below represents the demographic characteristics of all the respondents.

Table 4.2 – Demographic profile of the Youth Employability Program in Ghana

Profile	Category	Number	% Freq.
	Male	65	65
Gender	Female	35	35
	Total	**100**	100.0
Age(years)	Less than 20yrs	0	00.0
	20-34yrs	50	50
	35-49yrs	37	37
	50yrs and above	13	13
	Total	**100**	**100.0**
Position	Top Mgt.	5	5
	Staff	25	25
	Beneficiaries / SMEs Owners	70	70
	Total	**100**	**100**
	Less than 3years	56	56
	4-6years	34	34
Tenure of Involvement	7-10years	10	10
	11years and above	0	0
	Total	**100**	**100.0**
Educational Level	No Education	0	00.0
	Certificate / Diploma	43	43
	Degree	37	37
	Master/PhD	20	20
	Total	**100**	**100.**

A bar graph of respondent demographic data is presented in fig. 4.2 below.

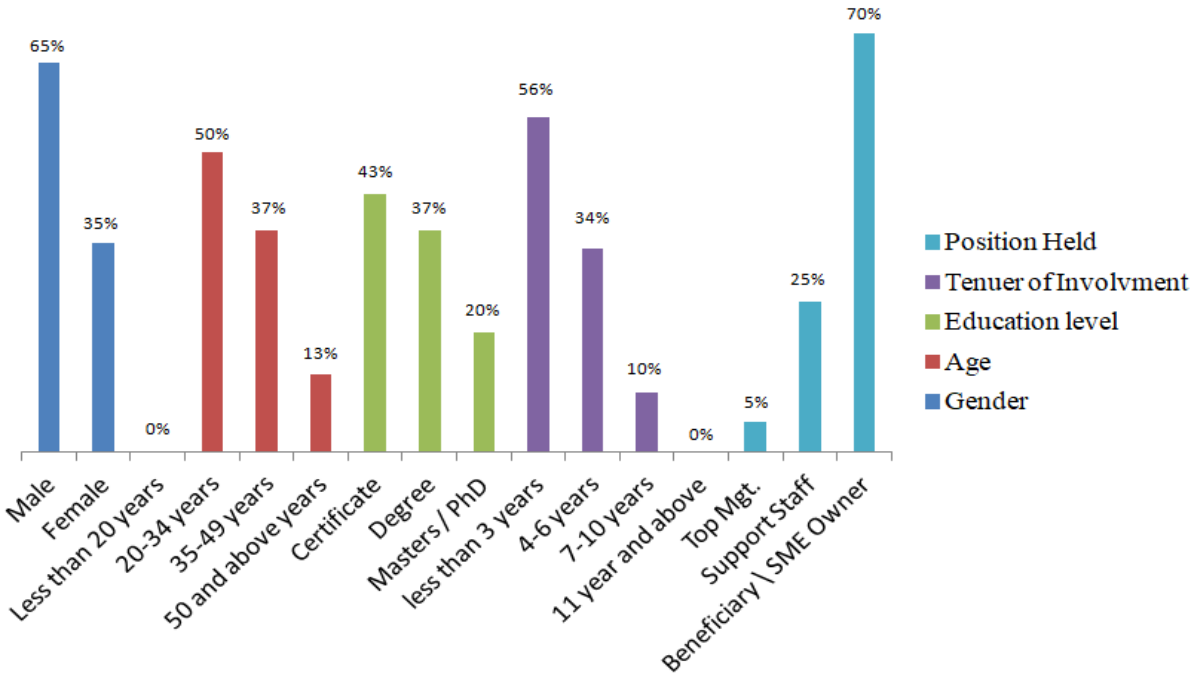

Figure 4.2 – Demographic characteristics of the Youth Employment Program (YEP) in Ghana

Source: Developed by the author

From figure 4.2 the demographic characteristics of the Youth Employment Program (YEP) in Ghana. Above table shows that YEP workforce is dominated by male, with 65% majority (65 out of 100), while the remaining, 35% (35 out of 100) represent females. Also, the age distribution of YEP indicates that none of the firm's participants is less than 20 years of age, and 50% of YEP respondents are within the age group of 20-34 years. This is followed by those within the age bracket of 35-49 years; this group constitutes 37% of the. On the other hand only 13% of the YEP members were found to be 50 years or older. Indeed, the YEP has proved to be a program for the youth since most of its members (50%) are youth. This is an indication that the program has a strong and energetic work workforce to be able to deliver. Also, it was observed that majority, 43.0% of YEP

members have attained at least Certificate or Diploma qualifications, this show that majority of the program members have attained formal education. This is followed by 37% with a First Degree / Professional certificate, while 20% of the respondents hold Masters or Advanced degree. Furthermore, the result showed that 560% of YEP members have worked within the program for less than 3 years. Those with more than 4-6 years involvement with the program constituted 34%, while those with 7-10 years involvement in the program constituted 10%, while 0% has had 11 years or more involvement in the program.

4.3 Identification of the Risk of Financing SMEs Business Projects

As stated earlier, the focus of this study is to estimate the risk of financing SMEs business projects. Therefore, this research is concerted on the *Youth in Entrepreneurship* module of YEA. Data gathered revealed that one of the key modules of the program which has produced reasonable number of small and medium enterprises (SME) is the *Youth in Entrepreneurship*. However, the same module came up as the one through which the government and other investors have lost huge sums of money through investment in business projects. A careful analysis of data gathered brought to the fore numerous factors as the major causes of such huge losses for investing in business projects under the module. The figure 4.3 below shows how the risk of financing those business projects emerges in three folds.

From the above, this study observed that the risk of financing SMEs business projects emanate from the entrepreneur after investors have been convinced by their business model. To logic behind the ***Idea Risks*** introduced in this study can be linked to the Behavioral Economics and Noisy Selection Theory. The noisy selection theory states that one key factor to consider when analyzing the success of a firm is its start-up and operating costs [386]. To better gain more insight on the rationale behind most SMEs choices of business project and decision making, this study draws on behavioral economics. Understanding the effect of psychological, cognitive, emotional, cultural and social

factors on the economic decisions of individuals or institutions and how those decisions vary from those implied by classical theory [387].

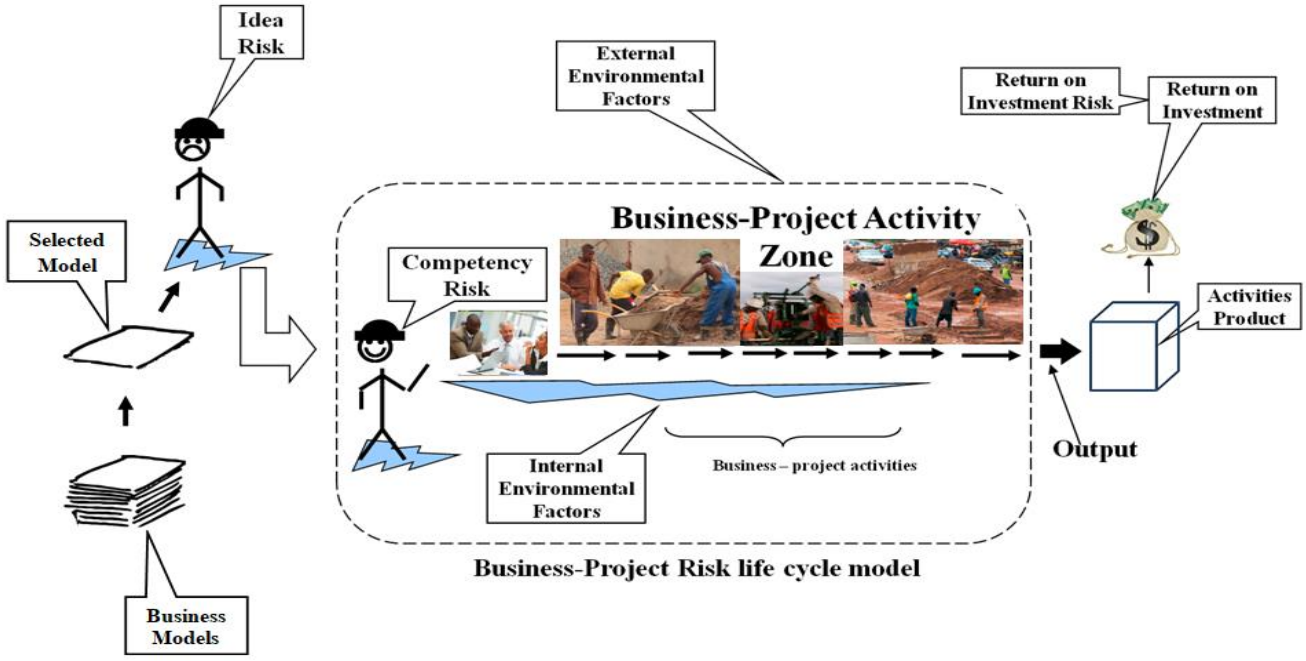

Figure 4.3 – SMEs Business Project Risks Life Cycle

Source: Developed by the author

This is very crucial when estimating the risk of financing business projects. It must be noted that humans make 95% of their decisions using mental shortcuts or rules of thumb. Humans' frame their idea base on the collection of anecdotes and stereotypes that make up the mental filters individuals rely on to understand and respond to events. However, one must note that market inefficiencies exist and these include mispricing and non-rational decision making, thus ***Idea Risk*** [388]. Also, when individuals make decisions, their rationality is limited by the tractability of the decision problem, their cognitive limitations and the time available. Therefore, decision makers in this view act as satisfiers, seeking a satisfactory solution rather than an optimal one. Also, ideas that humans generate take shortcuts that may lead to suboptimal decision-making, also an ***Idea Risk*** [389, 390, and 391].

Also, Najib H. (2002) revealed that the principal factors impeding firm growth are lack of access to qualified workers and managers; government policies such; domestic price volatility among others, thus ***Competency Risk*** [392]. Also, Pajarinen et al. (2015) stated that entrepreneurs with higher academic background are more innovative and will use modern techniques and models to do business. Schumpeter (1934) indicated that an entrepreneur needs to be innovative, creative, and should be able to take risk. Further, Barringer and Bluedorn (1999) described entrepreneurs as individuals who can explore the environment, discover the opportunities, and exploit them after proper evaluation [393, 394, and 395]. These characteristics that constitute a successful SMEs ownership when analyzed carefully are linked competency, thus ***Competency Risks***. The competency risk is more affirmed through a careful analysis of the Chaos theory [396]. Form these points, the estimation of the risk of financing SMEs project must go beyond just looking at financial indicators but should also look at the psychological state of the personality initiating the business idea or requesting for funding. Virlics A., (2013) shows that investment decisions are made after a complete analysis of the investment project. Virlics A. further stated that one of the basic factors that influence the decision is the risk factor of the investment. This risk exists because it is uncertain that the cost of the investment will be recovered and a profit will be made, thus ***Return on Investment Risk*** [397]. One major challenge associated with investment decision making is risks and uncertainty. Toma S.V. et al. (2012) also stated that to better understand the concept of risk, it is necessary to make a clear distinction between risk and uncertainty [398].

This study believes that to better understand the risk of financing SMEs business projects, there is the need to identify those common factors that form the basis of risks in all SMEs business projects. Analysis of this research data revealed what this study term as the *Dodecagon Risks of Financing SMEs Business Projects.*

Table 4.3 – Risks of financing SMEs business projects

BUSINESS PROJECT FINANCE RISKS (BPFR) = R			
BUSINESS IDEA RISKS (BIS) = r_1			
Innovation / Uniqueness Risks (OU)	***Acceptability / Adoptability Risk (AA)***	***Technology Risks (TI)***	***Set-up / Operation Risks (OP)***
• Self-generated. • Effectiveness. • Cohesiveness. • Practicality. • Tactical • Real (authentic) • Safety net (backup) • Tacit	• Universalism. • Integrated. • Modernity. • Flexibility. • Likability. • Ambiguity. • Functionality. • Capacity.	• Knowledge flow. • Machinery. • Diffusion of idea. • Global focus. • Operation mode • Differentiation • R and D	• Pre-requisites • Redundancy • Idea chaos • Productiveness. • Competitiveness. • Sustainability
COMPETENCY RISKS (CR) = r_2			
Technical / Creativity Risks (TC)	***Management Risks (M)***	***Comprehension Risks I***	***Social / Environment Risks (SE)***
• Innovativeness. • Leadership. • Competitive intelligence. • Strategic alliances. • Knowledge creation. • Connectivity. • Assertiveness.	• Environment. • Unique skills • Motivation. • Commitment • Self-control. • Openness. • Deliverables.	• Human Capital • Expectancy. • Results orientation. • Efficiency. • Consultation. • Education level. • Crisis management • Trustworthiness.	• Experience • Demographic index • Civil integration • Perceptions. • Benefit / Value • Elasticity • Availability of information • Factors linkage
RETURN ON INVESTMENT RISKS (RIR) = r_3			
Financial Risk (FR)	***Economic Risk (ER)***	***Political and Legal Risks (PLR)***	***Culture and Tradition Risks (CTR)***
• Project cost. • NPV • Financing structure. • Securing other financing. • Liquidity ratio • Financing cost. • Cash flow projection • Financial mgt. plan. • Credit history. • Reliance on revenue source. • Operating self-sufficiency. • Funding participants.	• Inflation. • Interest rate • Competition. • Market share / size • Market prices. • Availability of suppliers. • Minimum wage. • Cost of material. • Tax law. • Industry-specific economic growth. • Demand • Income level • Spending pattern	• Political stability. • Economic policies. • Legal requirements. • Corruption. • Degree of freedom. • Leadership • The project and politics. • Security. • Bureaucracy.	• Customs • Beliefs • Ethnocentrism • Entrepreneurship background. • Ethics. • Life style. • Attitude towards work.

From table 4.3, the risks of financing SMEs business projects can be under twelve (12) headings. This was done by asking respondents to match each category of risks to the following risk factors this study has identified: Innovation / Uniqueness risk, Acceptability / Adoptability risk, Technology risk, set-up /operation risk, Technical /creativity risk, Management risk, Comprehension risk Social / environmental risk, Financial, Economic, Political and Legal, and Culture and Tradition. The table 4.3 below presents the identified risks under twelve (12) major headings.

After thorough analysis the results revealed what this study term as the **Dodecagon of Business-Project Financing Risk**, where each risk can turn 30^0 to have negative impact on return on investment if not well managed. The dodecagon of business – project financing risk is presented in figure 4.4 below.

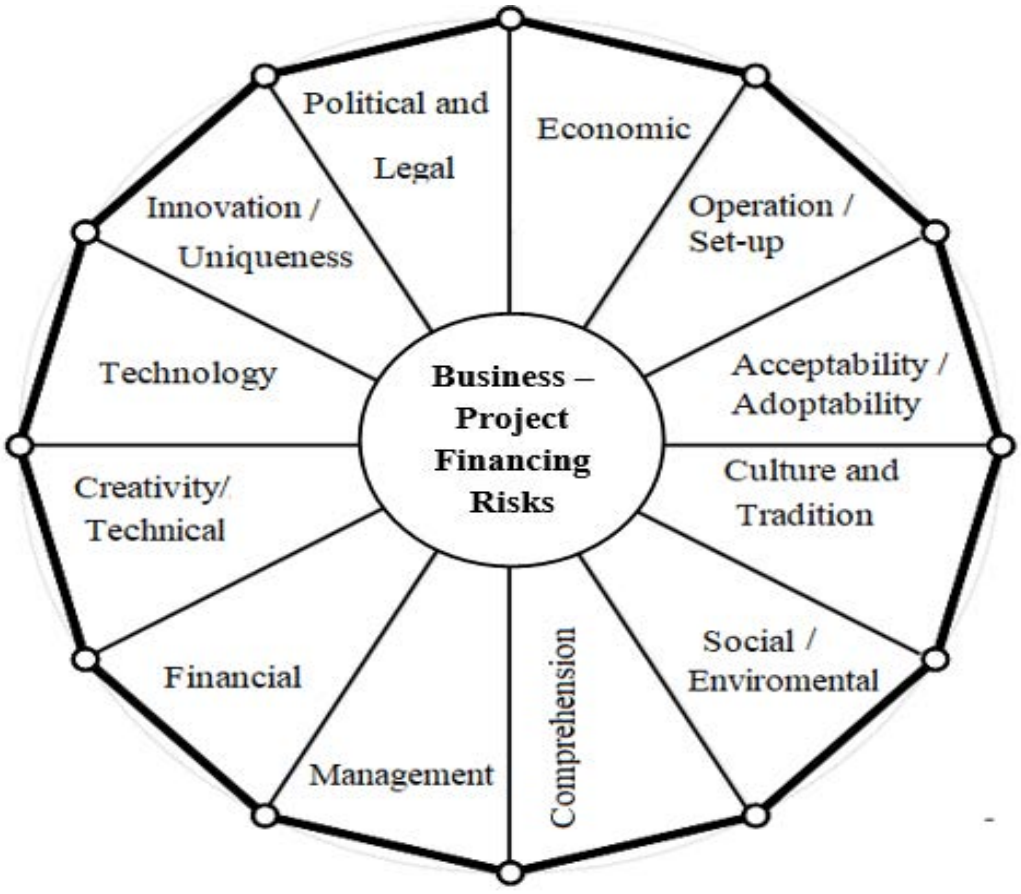

Figure 4.4 – Dodecagon of Business Project Financing Risk

Source: developed by the author

The dodecagon of business project financing risk in figure 4.3 above divulges that all business project financing are faced with twelve key risks factors irrespective of their form or type of project. This study observed that the above identified risks can further grouped into three major risks as: 1. Business Idea Risks or Idea Risk: Innovation / Uniqueness Risks (OU), Acceptability / Adoptability Risk (AA), Technology Risks (T), and Set-up / Operation Risks (OP). 2. Competency Risks: Technical / Creativity Risks (TC), Management Risks (M), Comprehension Risks I and Social / Environment Risks (SE). 3. Return on Investment Risks: Financial Risk (FR), Economic Risk (ER), Political and Legal Risks (PLR) and Culture and Tradition Risks (CTR). Therefore the risks of financing SMEs business projects have been identified to fall into three main forms, mainly:

- *Business Idea Risk* = Originality / Uniqueness (OU), Acceptability / Adoptability (AA), Technology Risk (TR), and Operation / Set-up (OS).
- *Competency Risk* = Creativity/Insight (CI), Management (M), Comprehension I, and Social and Environmental (SE).
- *Return on Investment Risk* = Financial Risk (FR), Economic Risk (ER) Political and Legal Risks (PLR), and Culture and Tradition Risks (CTR).

The figure 4.5 below presents the three major risks in a triangular form known as *Project Financing Risk Triangle* to show the relationship among the three risk indicators.

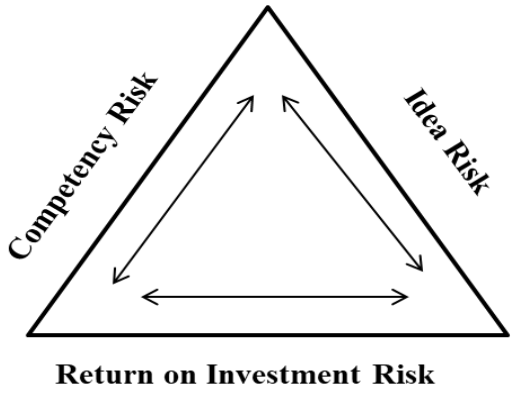

Figure 4.5 – Project Financing Risk (PFR) Triangle

Source: developed by the author

The BPFR triangle above indicates that idea risk could impact competency risk hugely if not managed well. Thus, SMEs owners with low competency are more likely to generate very risky business project ideas. Further, high competency risk would automatically have influence on return on investment (ROI). It is worth noting that ROI depends highly on creative ideas and high competent team in other to yield the desire or expected returns.

4.3.1 Coding Risk Indicators and Factors

This study is as scientific research conducted to test the potency of all the identified risks indicators and factors that constitutes the risks of financing business projects. As a result this study has developed a business plan template as in appendix I.a. The business plan template was given to respondents to match each item in the business plan template to the identified risk indicator's factors. The results is shown in appendix I.b. The study further counted the number of times each code what recorded against each factor by respondents. This was to enable this research to record the frequency / points / weight of impact each risk factor has on financing of business projects in developing economies. Figure in Appendix C shows the business project risk blocks resulting from the frequencies / points / weight of each risk factor. Detail is show in appendix Ic.

The figure Appendix C shows the risk indicators has varying accumulated risk potency points. This can be expressed as

1. Accumulated frequency points of Competency Risks:

R2A+R2B+R2C+R2D = 149 + 143 + 133 + 125 = **550**

Ranked 1st as having very high risk potency.

2. Accumulated frequency points of Business Idea Risks:

R1A+RAB+R1C+R1D = 132 + 112 + 92 + 138 = **474**

Ranked 2nd as having high risk potency.

3. Accumulated frequency points of Return on Investment Risks: R

3A+R3B+R3C+R3D = 125 + 101 + 75 + 89 = **390**

Rank 3rd as having moderate risk potency.

It is not surprising competency risk had the highest score of 550 points and also ranked first in this study. This is because humans are the manager of every business project, therefore, higher competencies will result in less idea and return on investment risk and vise versa.

As Pajarinen et al. (2015) puts it entrepreneurs with higher academic background are more innovative and will use modern techniques and models to do business. This is an indication that high competency risk can affect the entire business project success. Also, idea risk came second with a score of 474 points. The works of Lin Tom C. W., (2012) affirms this by stating that understanding the effects of psychological, cognitive, emotional, cultural and social factors on the economic decisions of individuals or institutions and how those decisions vary from those implied by classical theory. Lastly, return on investment came third, scoring 390 points. Virlics A., (2013) studies throws more light on this score by stating that investment decisions are made after a complete analysis of the investment project. This shows that the score points of return on investment risk is dependent of the first two risks indicators. Therefore, it is not surprising that it had the least score of 390 points. Thus, when competency and idea risks are handled well, there will be less impact of return on investment risks. Table 4.4 below is a summary of accumulated points of risks factors

A further analysis on the accumulated points for risk indicators was done to equate to all the individual scores to one (1). This was done allow for possible of further analysis of this study in SPSS and excel. As well as the application of fuzzy logic rule. The table 4.5 below is the accumulated points for risk indicators equated to one (1) point.

Table 4.4 – The Summary of accumulated points of risks factors

RISK INDICATORS	RISK FACTORS	POINTS	EQUATING TO ONE HUNDRED POINTS
Business Idea (R1)	Originality / Uniqueness	132	9.34
	Operation / Set-up	112	7.92
	Technology	92	6.51
	Acceptability /Adaptability	138	9.76
	Total	**474**	**33.52**
Competency (R2)	Technical / Creativity	149	10.54
	Management	143	10.11
	Comprehension	133	9.41
	Social / Environment	125	8.84
	Total	**550**	**38.90**
Return on Investment (R3)	Financial	125	8.84
	Economic	101	7.14
	Cultural	75	5.30
	Political / Legal	89	6.29
	Total	**390**	**27.58**
	Grand Weight Total	**1414**	**100 or 1**

Table 4.5 – The accumulated points for risk indicators

RISK INDICATORS	EQUATING TO ONE HUNDRED	EQUATING RISK POINTS TO ONE
Idea Risk	33.52	0.3352 = 0.33
Competency Risk	38.90	0.3890 = 0.4
Return on Investment Risk	27.58	0.2758 = 0.27
Total	**100**	**1**

4.3.2 Validation of Risk Indicator and Factors

i. The Relationship of Risk Factors Impact on Risk Indicators

This study believes that it is very important to analyze the rate of impact each of the identified factors contribute to activate the three key risk indicator. The pie chart below in figure 4.7 shows the rate of each risk factor's contribution. The pie chart in figure 4.6 below revealed that *political and legal* factors contribute greatly to the three key risks of

financing projects in developing economies with a score rate of 11%. This revelation is very true in the case of all business projects implemented in developing economies, particularly in the case of Ghana's youth employability programs (YEP) which has seen a lot of political influences. According to Palmer and Robert (2007) the YEP program appears to be highly politicized with only the government in power seeing its relevance in addressing youth unemployment challenges. Also, Economic and cultural came second as having 10% rate of impact each on the identified risk indicators. This was followed closely by financial, social and environmental, comprehension and management with a rate score of 9% impact each on the identified key risk indicators. The score of these factors confirms their impact on the risk of financing business projects in developing economies. According to Abednego & Ogunlana (2006) project failure is linked to the managerial phase of a project. Also, Atkinson (1999) suggested that projects should be assessed base on benefits to organizations, benefits to stakeholder community and Information System.

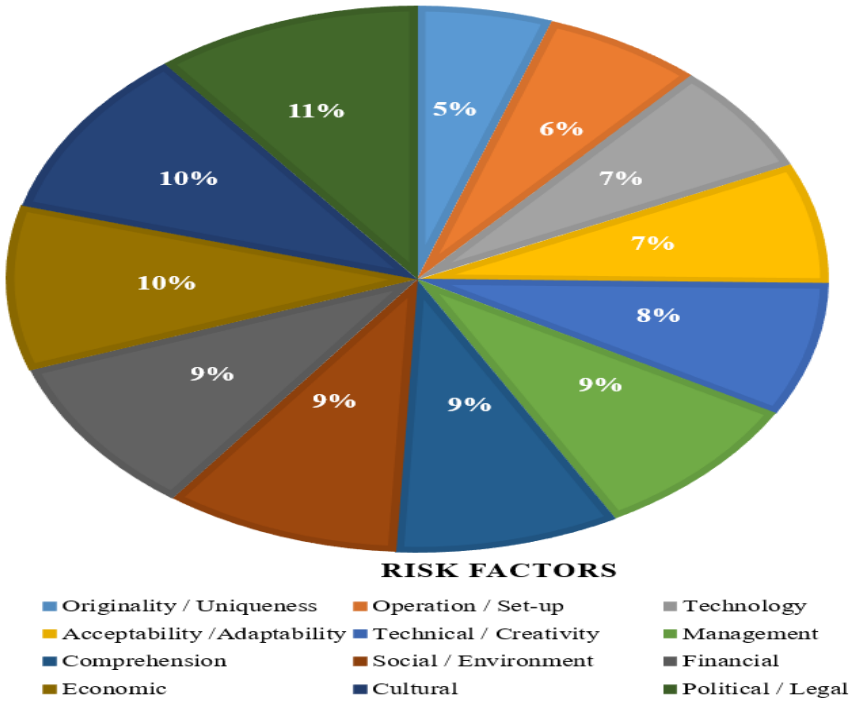

Figure 4.6 – Rate of Risk Factor Impact on Risk Indicators

Source: developed by the author

Atkinson explained that the benefits to stakeholder include: contractors' profits, capital suppliers, project team, economic impact to surrounding community, satisfied users, social and environmental impact, personal development, and professional learning. The benefits to organization should include: organizational-leaning improves efficiency, meets strategic goals, reduce waste, effectiveness and increase profitability. All these studies justifies the finding of this research. Further, these was recorded for the following factors: *originality / Uniqueness – 5%, operation / set-up – 6%, technology -7%, technical / creativity – 7%, acceptability and adaptability -8%* rate scores. The findings of this study has further been affirmed by the World Bank, 2012 Report which indicates that developing countries such as Ghana's over reliance on external sources of resources (especially funding) for their developmental projects call for the country to develop the skills to look for other funding source. Also, a study conducted by Isaac et al. (2015) indicates funding and management as major factors that contribute to Ghana government projects failure. The GYEEDA Report, 2013 also indicated that the greatest problem of Ghana's YEP is the absence of an appropriate governance framework; inadequate financial oversight; poor supervision etc., these challenges are purely administration and finance issues. Also, data gathered revealed a bar graph of risk factors of financing business projects. Figure 4.7 below present the bar graph. The bar graph brought to the fore that the impact of the risk factors of financing business projects rises and fall at and increasingly high rate. The R-squared value is 0.92 which is approximately 1, a revelation that the line fit the data perfectly.

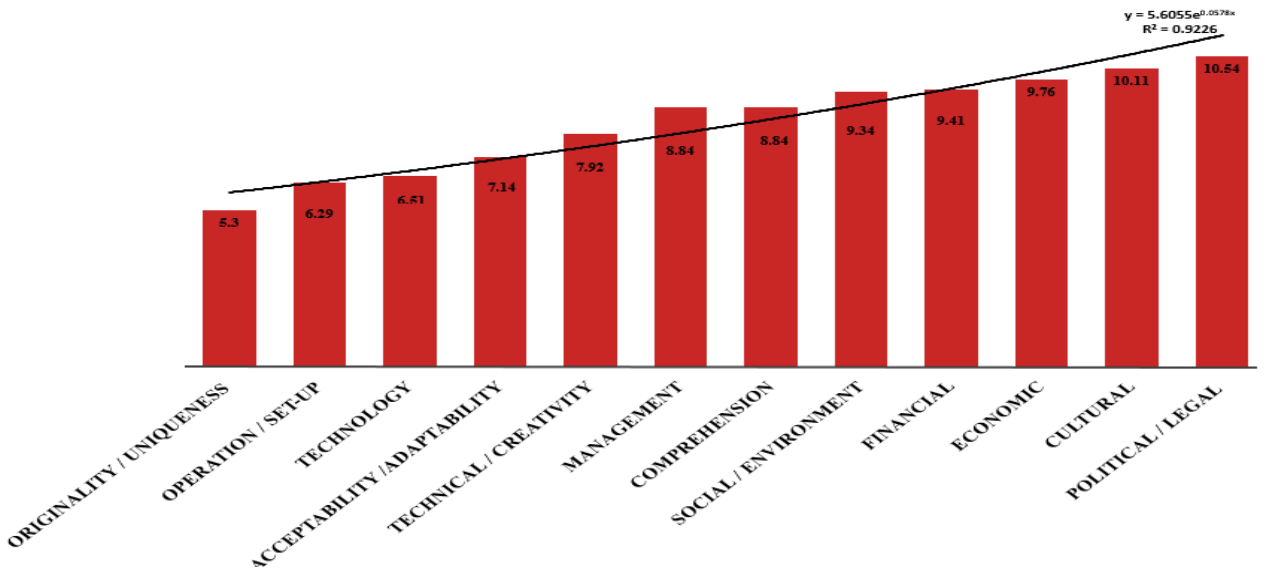

Figure 4.8 – Business Project Financing Risk Factors Bar Graph

Source: developed by the author

The tread line also proves that the exponential function obeys the basic exponentiation identity, $\exp(x) = \lim_{n\to\infty}\left(1+\frac{x}{n}\right)^n$ this justifies the notation e^x is equal to 1 when x = 0, thus, $\frac{d}{dx}e^x = e^x \quad \text{and} \quad e^0 = 1.$ thus a confirmation that the influence of the risk factors (*F*) on risk indicators (*RI*) is a 100% or 1. Therefore, idea risk, competency risk and return on investment risk impacts on return on investment (ROI) in business projects is greater than zero (0) but can be express as: *RF* = RI, where, RI > 0 ≤ 1. Base on the above bar graph exponential expression revelations, this study has developed what the study term as ***Risk and Project Financing Curve***. This is represented in figure 4.8 below. The figure 4.8 below shows that relationship between risk and investment in business project. The curve shows the degree of impact the three risk indicators can have on the entire business project investments. When risk is high most investors are more likely not to fund business projects. The curve also shows that there is no zero risks or risk free business project. Thus risk is greater than zero but less than or equal to one.

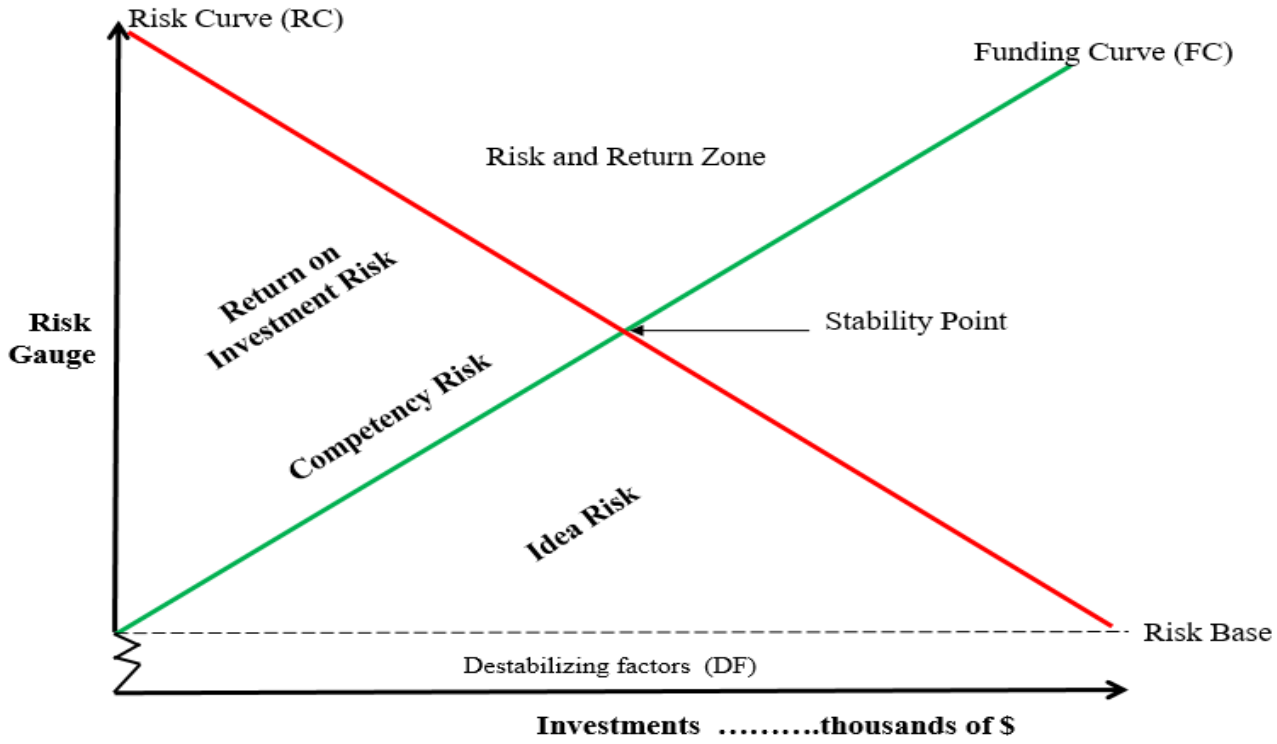

Figure 4.8 – Business Project Financing Curve

Source: developed by the author

Further, the curve reveal that as risk reduces investors are more likely to put in more funds for business project. This also indicate that as risk reduces more project and or activities will be undertaken. Additionally, idea risk zone is below the investment line and risk line, this means that investors losses nothing and no funds is lost or required when there is no intention to implement a business idea. Once the intention to convert business idea into action is born, competency and return on investment risk becomes active. Competency risk and return on investment risk is above the investment line because acquiring high competent team to aid good management and higher return comes at a cost, thus, the two factors (competency risk and return risk) increases as risk also increase. The intersection point of the risk line and investment line is termed as the *Stability point*, thus, at that point there is no loss nor gain from investment. This point also mean that the project has the potential of generating enough revenue to cover all capital invested. However, the

stability point does not generate any profit from investment. Another important part of the curve is risk and return which lies above the intersection of both the risk curve and funding curve. The risk and return zone indicates that for a business project to generate the expected return; idea risk, competency risk and return on investment risk must lie above the stability point. Thus, risk and return always falls above the stability point.

4.4 Hypothesis Test

This study is design to systematically estimate the risk of financing SMEs business projects; taking the Youth Employment program in Ghana as it setting. Data was collected from all local stakeholders (mangers, staff, beneficiaries and sponsors) of the program in Ghana. Available data revealed the prevalence of thr

ee primary risks of financing business projects in developing economies. An independent t-test, assuming unequal variance, was performed at 95% confidence interval to determine, if any, the difference that exist in terms of the impact of those risk on business project financing. The table 4.6 below shows the mean, standard deviation and t-test results.

Table 4.6 – Risks of Financing SMEs Business Projects

	Risk Indicators	**N**	**Mean**	**Std. Error Mean**	**t-stat**	**t-Critical 2– tail**
1	Idea Risks	16	2.05	0.11	-2.19	2.04
2	Competency Risks	16	2.40	0.10	4.86	2.04
3	ROI Risks	16	1.68	0.10	-2.43	2.04

$P<0.05$, $P>0.01$

Since the t-stat of idea risk (IR) and ROI risk (ROIR) is less than the t-critical 2 tail, and competency risk is higher than the 2-tail critical we cannot reject hypothesis test (H_o). Therefore, we conclude that there exist difference among the risk indicators in terms of their impacts when estimating the risk of financing SME business project; thus, $\mathbf{H_o: \mu_{IR}}$

$\neq \mu_{ROIR} \neq \mu_{CR}$. Also, the alternative hypothesis (H_a) shows that there is at least one inequalities; thus, **H_a:** ALOI among the risk indicators. Therefore, the study accept **H_o**, thus competency risk, idea risk and ROI risk are the key risks indicators when estimating the risk of financing SMEs business projects. The T-values are significant at 0.01 levels for business idea risks, competency risks (CR) and ROI risks, an indication that when those risks are estimated effective it will help to avoid putting money into highly risky business-projects. Also, the T-value of business idea risk, competency risk and ROI risk of financing SMEs business-project are significant at 0.05 levels. The result of T-tests shows these risks have substantial effect on SMEs business project financing. Also, table 4.7below shows the sum squares, mean squares and degree of frequency. The table 478 also measures the risk indicators of SMEs business-project financing using integral estimation. The measure reveals a positive significant correlation between the total scores of the risk indictors ($P < 0.05$).

Table 4.7 – Predictor of Risk of Financing SMEs Business-project

Model	**Sum of Squares**	**Df**	**Mean Squares**	**F**	**Sig**
Regression	4.00	2	2.00	11.02	0.000
Residual	8.19	45	0.18		
Total	12.19	47			

Additionally, the results in Table 4.7 shows a significant P-value =0.000 (less than 0.05) for estimating the relation between the indicators and SMEs business-project financing. Further, table 4.8 below confirms the occurrence of a predicting relation between the indicators used to estimate the risk of financing SMEs business-projects.

Table 4.8 – Dependent Variable: SMEs Business-project Financing

	Un-standardized Coefficient		Standardized Coefficients	t stat	Sig
	B	Std Error	Beta		
Risk Indicators	0.95	0.81	0.512	8.61	0.01

A major point drawn among the relationships of the risk indicators is shown in the above table 4.8 with the help of the values of intercept (0.95) and slope for SME business-project financing regression line (0.880). This suggests that using the three indicators can help to estimate the risk of financing SMEs business-projects; irrespective of the volume funds provide and location of the project significantly by 0.95 (95%). Thus, the chances the particular project in question will succeed or fail largely would depend on how well these indicators are estimated. Additionally, a slope of 0.512 for SME business-project financing risk indicators is formed when the test applies standardized independent and dependent variables. The table 4.7 below shows fit the risk factors are in the estimation of the risk of financing SME business-project.

From table 4.8 above, could be seen the presence of well-built positive relationship among the risk indicators of financing SMEs business-projects. This attests that the decision to finance or not to finance SMEs business-project can be estimated; after a careful analysis of the three key risk indicators with regard to information contain in the business-project plan. The result above in addition revealed an 'R' value of 0.88, indicating that 88% of the inconsistency in deciding whether to finance or not to finance SMEs business-project can be overcome by paying critical attention to those three determinants stated in this study. The figure 4.9 below shows the risk factors and business-project financing rating.

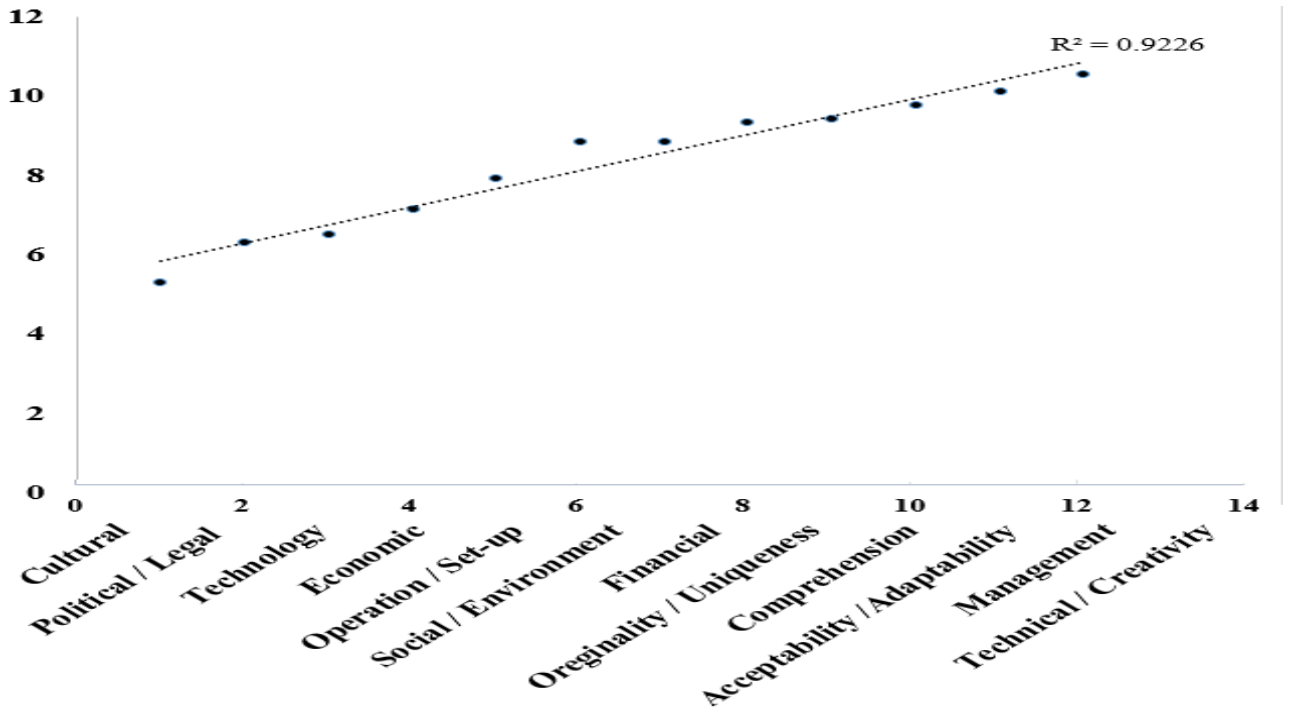

Figure 4.9 – Risk Factors and Business Project Financing Rating

Source: developed by the author

The fit is as good as it gets – lower rating (high risk) commands higher risk impact, even in good developing economies the expectation is 92% score impact. Furthermore, table 4.9 below shows the summary regression for estimation of risk of financing SMEs business-project factors.

Table 4.9 – Summary regression for SME Business-project Financing Risk Indicators

R	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
0.88	0.78	0.69	0.81

4.4.1 Testing the Degree of Truthiness or Falsehood

One of the objectives of this study is to develop a system model for the estimation of the risk of financing SMEs business-project. From the above analysis, the three key risks indicators have one hundred (100) percent or in summation one (1) potency to impact the expected returns on business-project. The figure 4.10 below shows the interconnections among the risk indicators in a form of a system.

Using fuzzy logic model this study further proves the actuality of the identified risk indicators impact on business-project financing. The risk associated with any activity is made up of two components: that is the chances of the occurrence of the negative event and the degree of impact of the negative event [339, 400]. Base on risk mapping model which maps low likelihood and high impact into the upper left quadrant, this study has also map all the categories of risks into risk matrix [401]. In this study the chance and degree of impact are sored according to their influence on the risk and the risk matrix aggregates those scores and put them into an overall risk score [402]. The figure 4.11 below shows the reformatted risk –based grid However, the risk-based grid in figure 4.11 below involves crunchy values, but in practice, the chance and degree of impact inputs often involve inaccurate values. Therefore to solve this problem, this study reformulated what it term as the fuzzy risk matrix by replacing the crunchy inputs and output with fuzzy inputs and output [403].

Degree of Impact						
1	H	H	H	VH	VH	
0.775	L	L	H	H	VH	
0.55	L	L	L	N	H	
0.325	N	N	N	H	VH	
0.1	VL	VL	VL	H	VH	

Risk Categories:
1. Very Low (VL)
2. Low (L)
3. Normal (N)
4. High (H)
5. Very high (VH)

Degree of Impact Categories:
1. Insignificant (I)
2. Average (A)
3. Severe (S)
4. Extreme (E)
5. Catastrophic (C)

Chance Categories:
1. Very Low
2. Low (L)
3. Normal (N)
4. High (H)
5. Very high (VH)

Figure 4.10 Reformulated Fuzzy Risk Matrix

Source: reformatted by the author based on [403]

The matrix in figure 4.10 above have been reformatted to make it suitable for estimating the risk of financing business-project by this study (fig. 4.11).

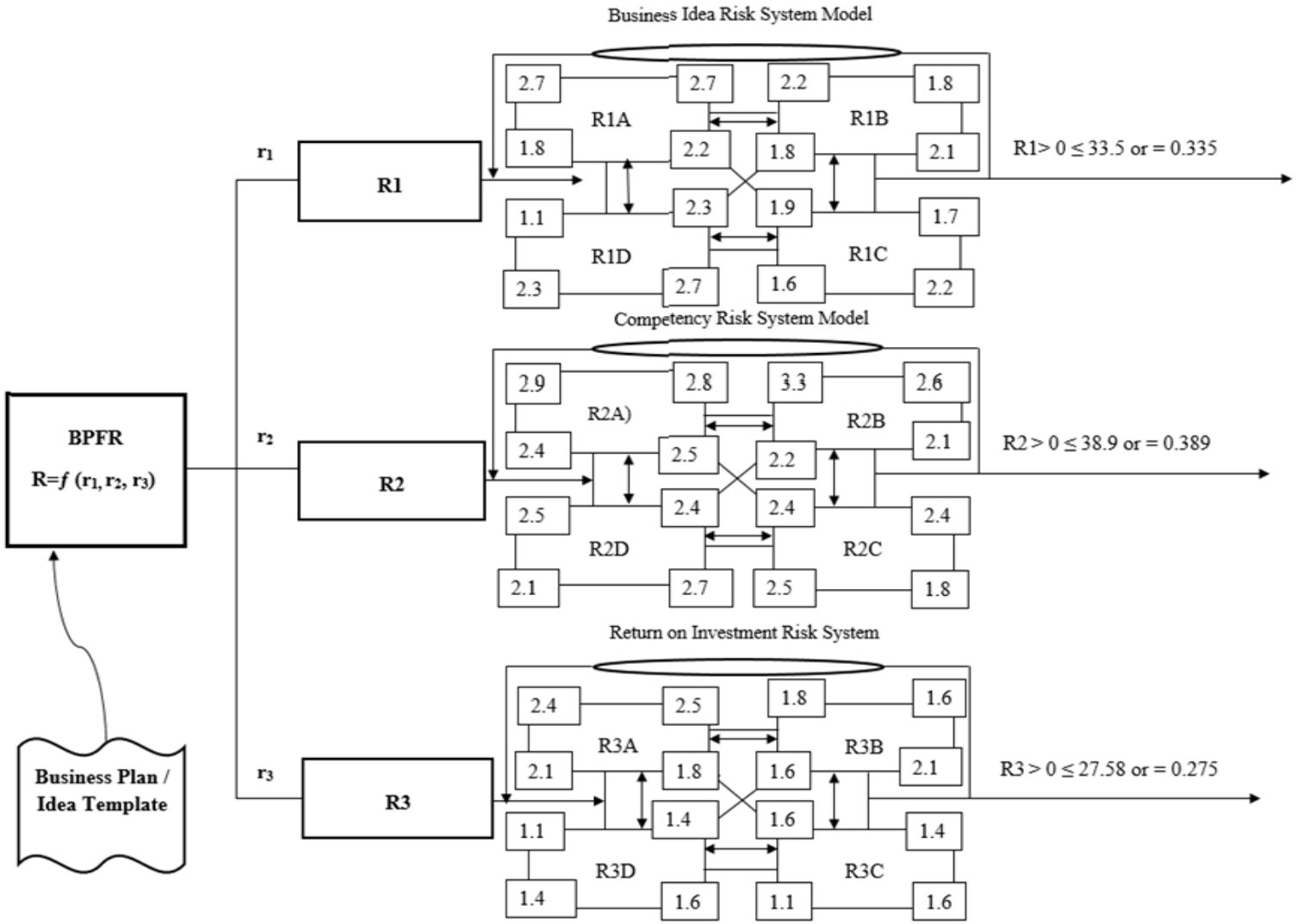

Figure 4.11 – Business project Financing Risks Modelling – Phase 1

Sources: developed by the author

The reformulated fuzzy matrix in figure 4.11 shows that a risk estimate with a score from 0.1 to 0.25 is an indication of a very low risk the accumulation of all the risks will be 100% chance thus, idea risk, competency risk and return on investment risk of occurring in the course of the business project life cycle. However, an estimated score from 0.75 and above is an indication of a very high risk which also has a 100%, chance in the case of idea risk, competency risk and return on investment risk occurrence in the course of the business-project life cycle. Also, the figure 4.12 below show the degree of impact associated with each chances score of the three risks indicators.

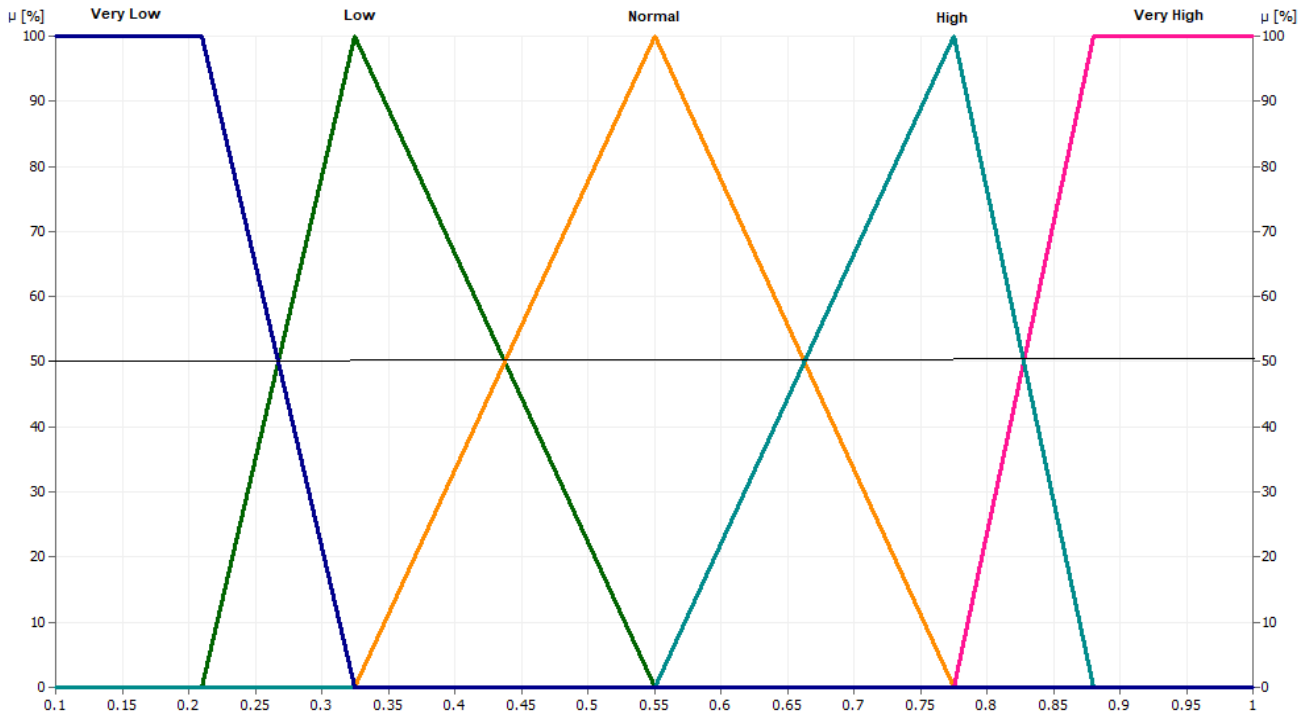

Figure 4.12 – Chance of Risk Occurring

Source: developed by the author

Further, the below figure 4.13 revealed that the degree of impact in an event of any of the three key risk indicators occurring could range from: insignificant, average, serious, extreme or catastrophic. This show how important to accurately estimate each of

the three identified risks indicators before funding any business-project. Further, this study has reformulated the fuzzy logic to demonstrate how the chances and degree of impact could represent the description of the three risk indicators.

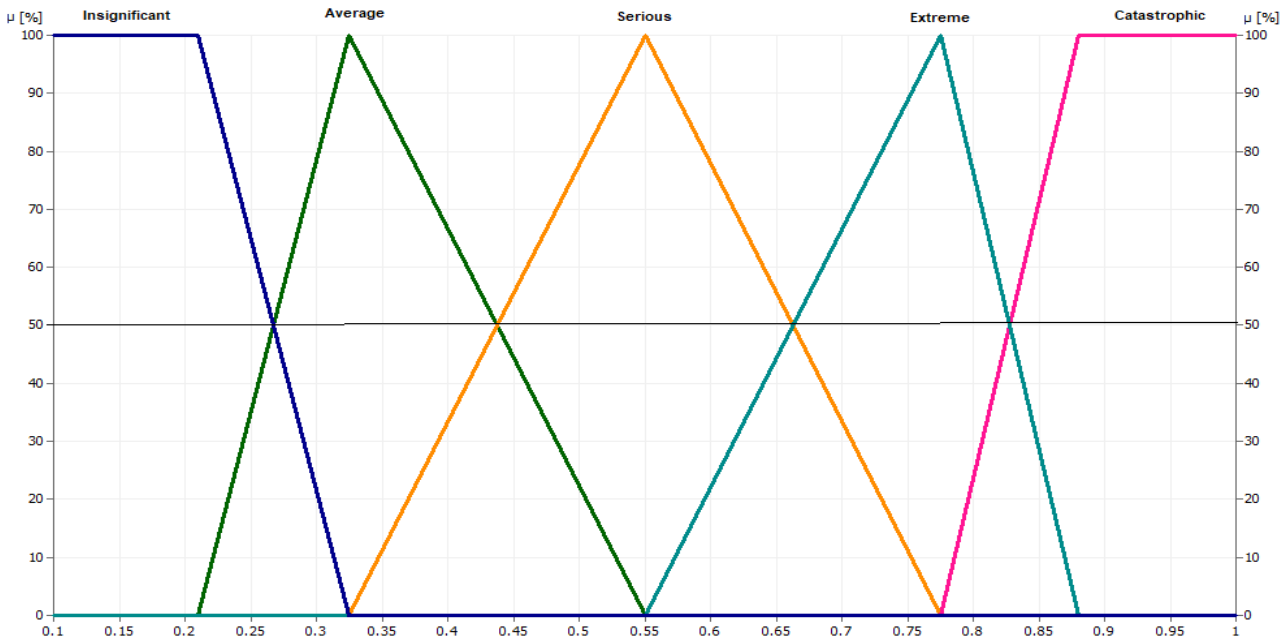

Figure 4.13 – Degree of Risk Scores Impact

Source: developed by the author

Further, figure 4.14 below confirms the chance, degree of impact and risk scores, as well as that the three risk indicators can fall in either of the following categories: very low, low, normal, high or very high.

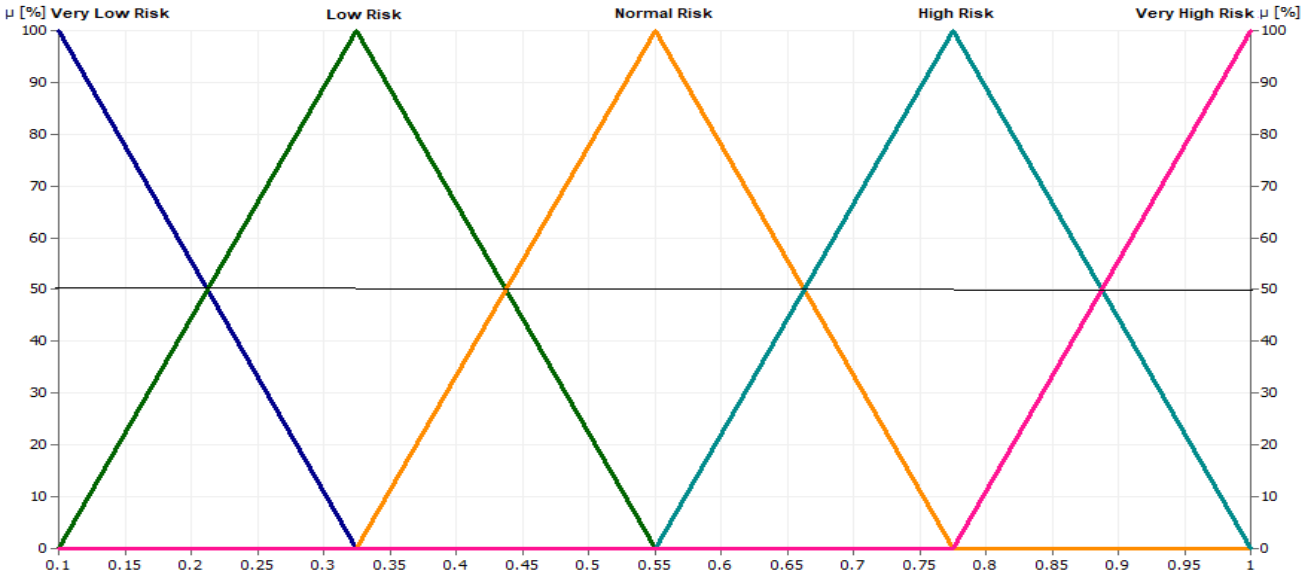

Figure 4.14 – Chance, Degree of Impact and Risk Score

Source: developed by the author

4.4.2 The Five Golden Rule of Estimating Business-project Risk

From the above reformatted risk-based grid and estimated of twenty-five (25) fuzzy rules can be formulated, however, this study is guided by the following five (5) key fuzzy rules:

i. **Rule 1:** if the business-project was developed by a person/team with sound psychological, cognitive and high emotional intelligence

Or

All economic, finance, cultural, social and environmental factors are considered at every decisions stage, then **risk is Very Low**.

ii. **Rule 2:** if the business-project was developed by a person/team with sound psychological, cognitive and high emotional intelligence

Or

All economic and finance factors are considered then **Risk is Low**

iii. **Rule 3:** if the business-project was developed and is being managed by highly educated, experienced and well-informed person / team

Or

Incorporates modern technology in its operation, then **Risk is Average**

iv. **Rule 4:** if the business-project was developed by a person/team with poor psychological, cognitive and high emotional intelligence

Or

Ignores most economic / finance factors in decision making, then **Risk is High**

v. Rule 5: if business-project was developed by a person / team with little or no finance and economics knowledge

Or

Being managed by low or uneducated, inexperience and ill-informed person / team, and does incorporate modern technology in its operation**,** then **Risk is Very high.**

Basing on the above five-point rules, the inter-connections among the risks are shown in figure 4.15 blow to their fast center area of risk categories. The figure 4.16 below reveals very important connections among the various categories of risks. The figure shows that any of the three risk indicator with a score from 0.83 and above is in very high risk category and will require management to set-up control measures and operation efficiency by 80% or more to be able to reduce its impact to a high risk, then afterwards a further 67% step-p control measures would bring it to normal risk. Also, any score from 0.65 is in a high risk category. Also, a risk score of 0.55 is an indication of a normal risk, while a score of 0.40 and 0.275 indicates low and very low risks respectively. However, a 67% step-up in control measures and operation efficiency is expected to reduce a normal risk to very low risk, while a 50% step-up will reduce a normal risk to low risk.

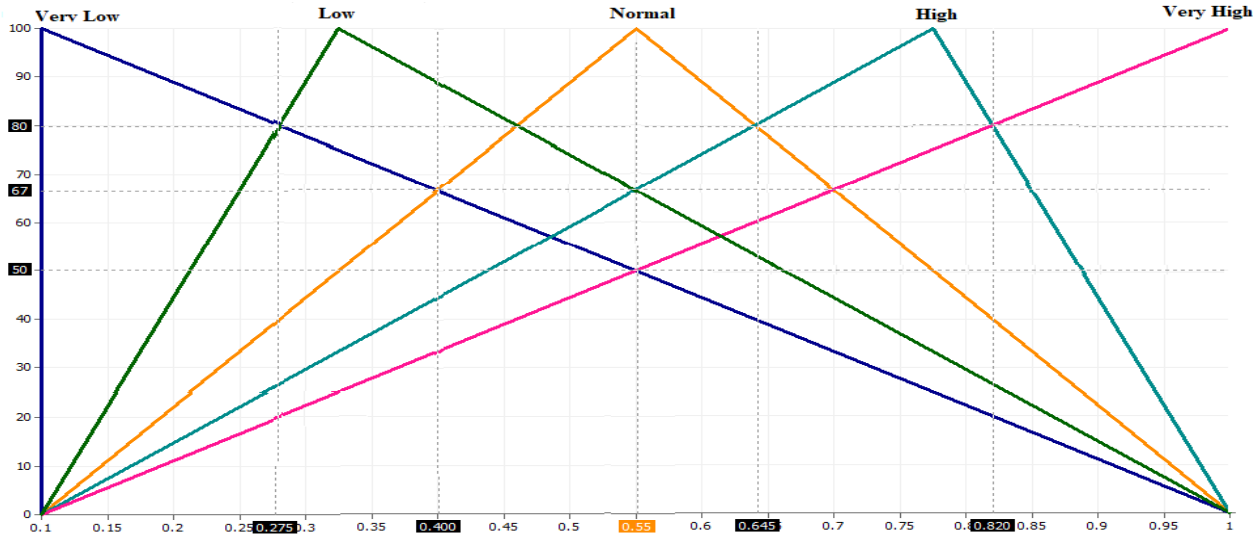

Figure 4.15 – Center Area of Risk Categories

Source: developed by the author

Also, the figure 4.16 below illustrates the holistic business-project financing curve based on the results of Fuzzy risk matrix.

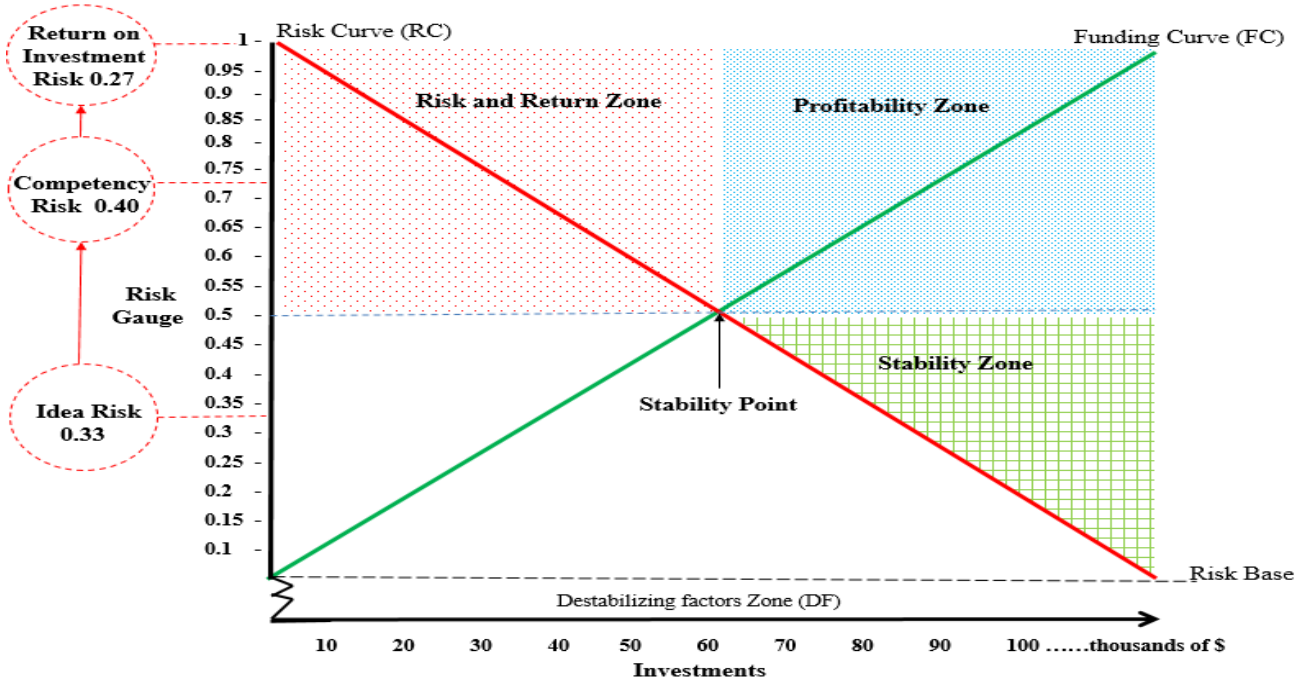

Figure 4.16 – Business Project Financing Curve

Source: developed by author

The curve in figure 4.16 above shows that the source of business-project financing risk starts from the business idea. This risk can have a score ranging from 0.1 to 0.33. A major activity at this point is decision making which requires strong psychological capabilities as indicated in the studies of behavioral economics. The fact is that many aspects of observed human decision-making differ from the 'rational' behavior assumed in economic models. Also, humans apply simplest of decisions and people generally do not attempt to find the optimal solution, but rather apply simple decision-making strategies. This cause people to settle for something that is good enough, rather than searching for the best, the more complex the decision, the less well equipped people are to deal with it. As a result, people often make decisions which do not appear to be in their best interests [404].

It is worth noting that one risk leads to another. Therefore, idea risk would lead to competency risk with a score ranging from 0.1 to 0.4. This score is cumulative therefore it is expected to increase the aggregate risk scores to 0.73 on the Fuzzy risk matrix. The stability point on the curve means that investors can make the right decision to minimize idea and competency risk from reaching point 0.73. That is, an aggregate score of the two risk that falls below 0.5 is considered a *Stability Zone*, while at point 0.5 which is also the inter-section point of the risk line and the funding line is known as the *Stability Point*. The stability point is an indication that the project has the potential of generating enough revenue to repay invested capital as well as profit, therefore more funds can be put in the project. Further, return on investment (ROI) risk with a score of 0.27 would increase the aggregate score of idea, competency and ROI risk to point 1 on the risk matrix. This is a fatal point score which would mean a complete failure of the entire business-project. It is important to note from the graph that *"the higher the risk the less funds that is invested in the project"*. Also, "*as more funds are put in the project and activities increases; new and more complex risks are likely to surface, causing risk to increase proportionately as funds and activities increases"*.

Every business-project is made up sets of systems which coordinates to achieve a sets goals to deliver value. Therefore, this study has developed business-project The financing risk system model as show in figure 4.17 below.

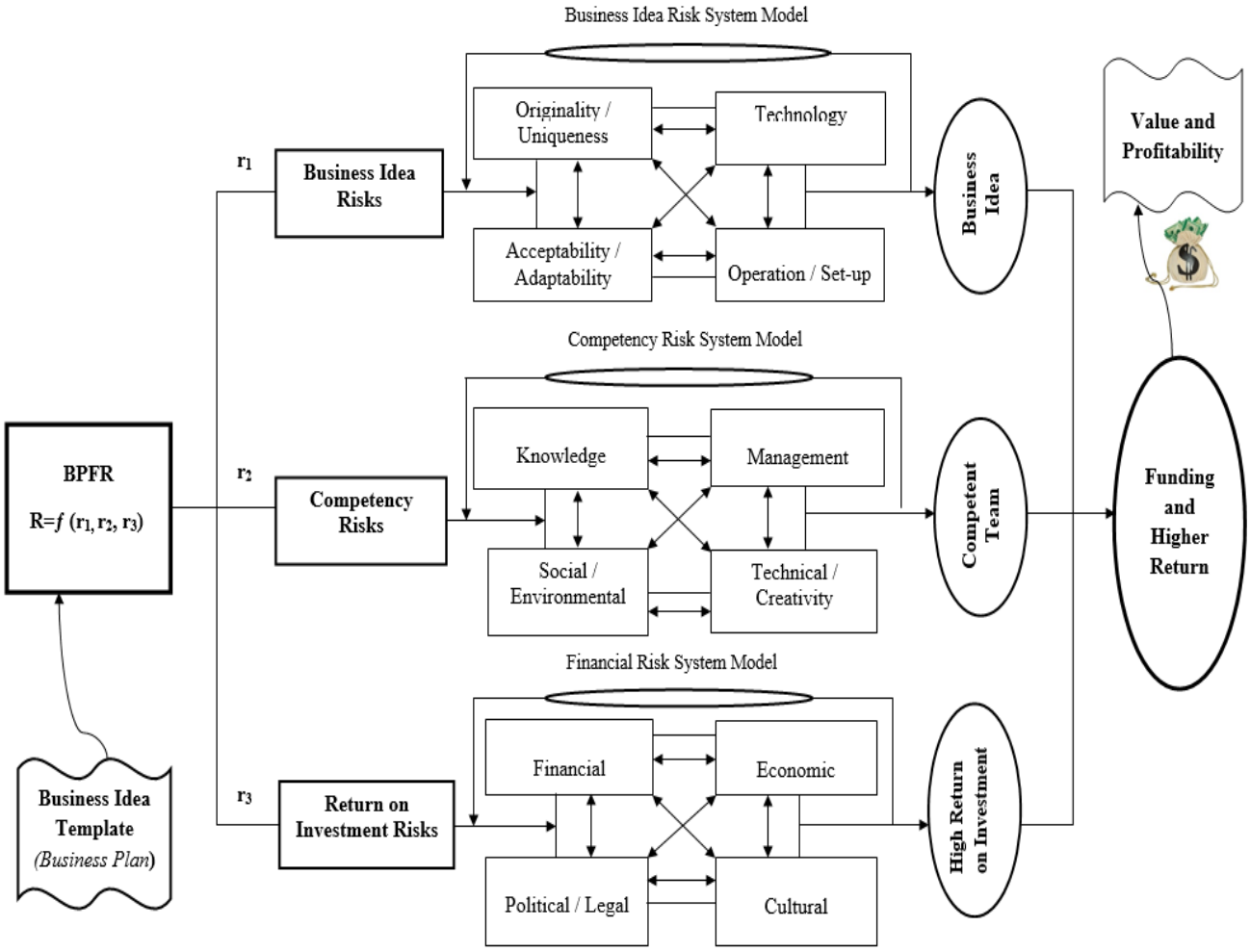

Figure 4.17 – Business Project Financing Risk System Model

Source: developed by the author

Developed system model would ensure that the aggregate scores of the three risks do not go beyond the stability point. Thus, to resist the soaring of risks scores and impacts on business-projects. Estimating risk is the stepping-stone to control all risks. It is the core of managing any business-project; it is an important responsibility for project managers

and investors to consider doing it with highly experienced risk analysts rather than just delegating to mere employees. The system model shows that managing risk is about making the tactical and strategic decisions to manage risk which is at the core of business-project financing. Such function is too important a responsibility for a firm to delegate.

Further, managing risk is about making the tactical and strategic decisions to control those risks that should be controlled and to exploit those opportunities that can be exploited through effective coordination and analysis of all risk factors and indicators in the system. The model above also shows that although the quantitative aspect of risk estimation is highly important, it also requires the application of tools and activities which generally involves in reality and risk management such as managing and analyzing people, processes, technology, social and environmental factors, knowledge etc. to know how these factors coordinates with the risk indicators to cause threats or opportunities are equally important.

It is highly important for this study to state the three primary functions of the above risk system model shown in figure 4.17. The functions are as follows:

i. It helps to discover known and unknown risks involved in business-projects – that is the above model would aid in identifying and understanding risks through careful study and analysis. These risks or similar risks have been experienced in the past in many business-projects and this justifies their inter-connectedness and degree of its occurrence.

ii. It also make the known risks stress-free to comprehend, realize, and associate with particular business-projects to facilitate quick decision making.

iii. It further boost efforts to understand and uncover the unknown or unanticipated risks – because it captures risks that most business-project managers and investors have not experienced before and offers control risk control measure

Testing the how these risks also apply to other earlier developed models, this study has further developed the business case life cycle – need for a project model. This is shown in fig. 4.18 below. The figure reveals that the first phase of every project is dominated by idea risk. The ability to reduce / control this risk is highly dependent on the competency

of all parties involved in the project financing, any lack will lead to high competency risk through from step 2 to step five. This will also affect return on investment, however, with high competent team both idea and ROI risk would be overcome.

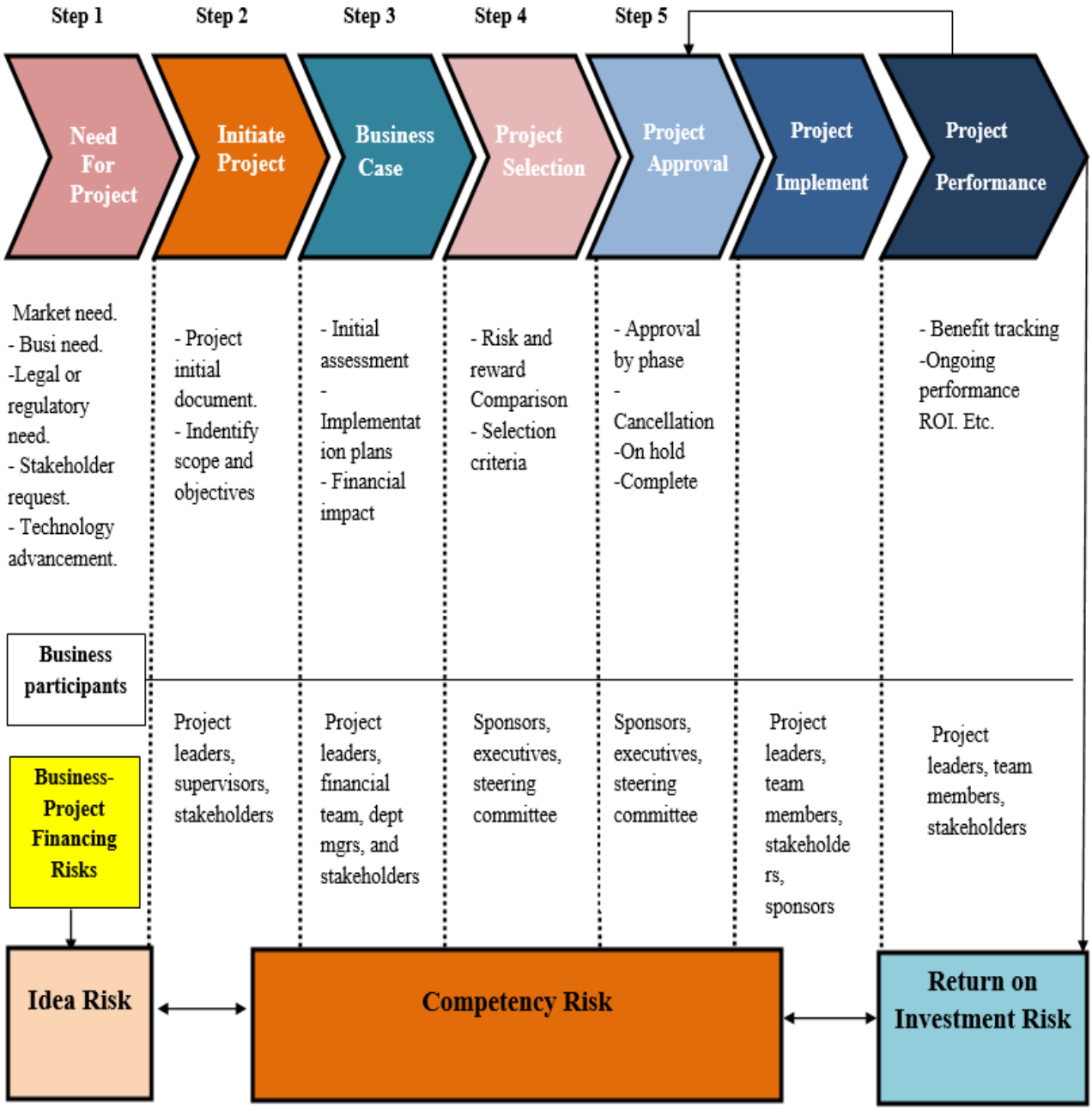

Figure 4.18 – New Business Case Life Cycle – Need for a Project Model

Source: further developed by the author based on [262]

Conclusions

Managing risk is about making the tactical and strategic decisions to control those risks that should be controlled and to exploit those opportunities that can be exploited through effective coordination and analysis of all risk factors and indicators in the system. The models developed in this study shows that although the quantitative aspect of risk estimation is highly important, it also requires the application of tools and activities which generally involves in reality and risk management such as managing and analyzing people, processes, technology, social and environmental factors, knowledge etc. to know how these factors coordinates with the risk indicators to cause threats or opportunities are equally important.

CHAPTER FIVE
FINDINGS AND RECOMMENDATIONS

5.1 Introduction

Small and Medium Enterprises need finance to meet their business-projects financing requirements in the current knowledge economy. Therefore, finance is seen as the lifeblood of business-project activities in every economy; particularly in developing economies which have very limited access to funding. Project finance is very good at funding specific investments in certain industries. Typically, majority of project finance is used for capital-intensive infrastructure investments that employ established technology and generate stable returns, preferably returns that are denominated in or can be easily converted to hard currencies. Empirical studies have shown that one comparative advantages of project finance is that it allows the allocation of specific project risks (that is completion and operating risk, revenue and price risk, and the risk of political interference or expropriation) to those parties who are able to manage them. Major business-projects such as oil and gas, infrastructure, manufacturing and information technology are in most cases being organized within small, medium and large individual organizations. Business-projects are unique undertakings which involve a high degree of uncertainty due to the constantly changing nature of the global business environment caused by advancement in technology. The high rate of uncertainty that characterizes business-projects causes the actual outcome of a particular business-projects event or activity to likely deviate from the estimate or forecast value. This makes decision making become more difficult as uncertainty grows. However, the availability of relevant information to aid risk estimation and increases the predictability all potential risks and reduces uncertainty. This means that business-project value delivery and profitability largely depend on successful estimation of all associated risks and effective control of all such known and unknown risks of financing the project.

5.2 The Main Result of the Research

This study through literature review, data collection and analysis have produced the following results:

i. Have identified the twelve (12) primary risks factors that could create threats or opportunities when estimating the risks of financing business-projects are: innovation / uniqueness risks; acceptability / adoptability risk; technology risks; set-up / operation risks; technical / creativity risks; management risks; comprehension risks; social / environment risk; financial risk; economic risk, political and legal risks; and culture / tradition risks.

ii. Base on the above identified twelve (12) risk factors, the study has developed the dodecagon model of business-project financing risks.

iii. Also, the study results also showed that the identified twelve (12) risk factors can be further grouped into three main risk indicators as: idea risk, competency risk and return on investment risk.

iv. The results also proved that the three risk indicators constitute what can be termed as business-project financing risk triangle.

v. Further, the study revealed that there is no zero risk (risk free) business-project / investment.

vi. Suing Fuzzy logic matrix scale from 0.1 to 1, idea risk had a score of 0.33; competency risk scored 0.4; while ROI risk also scored 0.27. This give an aggregate total risk score of 1 or 100%.

vii. The study also resulted in the developed of business-project financing risk graph. The graph also produces the following: the risk curve, financing curve, stability point, stability zone, and risk and return zone.

viii. The graph shows that high risk means less funds will be invested, but above the stability point some investors may invest more funds regardless of the risk score.

ix. This study results also proved that there is a strong connection among the three identified risks indicators.

x. Also, the study resulted in the development of a comprehensive system model that represent the three risk indicators. And a further development of the need for a project model

It is very important to also state that this study is mainly about the estimation of the risk of financing small and medium enterprises (SMEs) business-projects in terms of behavioral economics: using the integral estimation method and fuzzy rule; to determine the most influential (most essential) financing risks factors that developing economies, project sponsors and managers must know in other to achieve business-projects success in the current knowledge economy. One key driver of project financing in recent time this study also identified is the fastest pace in which the world's economy is growing. However, project financing has suffered a major decline in recent years due to the uncertainty (risks) surrounding macro-political events which have dominated news headlines throughout the world. The study observed that a business-project may be subject to a number of technical, environmental, economic and political risks, particularly in developing countries and emerging markets. This may cause financial institutions and project sponsors to conclude that the risks inherent in business-project development and operation are unacceptable.

Also, this study observed that developing countries face huge annual business-project financing gap in most sectors relevant to achieve sustainable development. However, an effective and accountable corporate-government engagement can help to pull resources, build the trust and strengthen the capacities that are required to fill this gap. Unfortunately, this study observed that the Ghana Youth Employment program lack the capacity to fill the financing gap the program face. Additionally, a critical observation about the program in Ghana revealed high political and legal risk. The program has seen a lot of financing and financial management threat which is similar to the famous Enron case. Frankly, projects failure rate in Ghana is on the high side, with no exception of Ghana government projects where several reported case of Ghana government projects failure have been recorded over the past years. At least one out of every three infrastructural development

projects in Ghana either fails or is not able to achieve one of the objectives. This can be attributed to inadequate or poor funding mechanism and poor management and administration practices as major factors that contribute to Ghana government projects failure. The study further observed that there appear to be a missing link between the estimations of the risks of financing business projects and business-project financing in developing economies. This has led to much difficulty in getting funds released from donor partners and agencies; while some investors have stated that developing economies lack project development capacity.

This study results also proves the need to emphasize that all investments in business-projects are associated with risk, ranging from very low to very high risk. Therefore, all investors should be prepared for a situation where an investment business project would result in a loss or higher profitability. Also, individual business-projects risk can be controlled up to 80-90 per cent. Such control measures will motivate investors to make larger investments and increases potential high returns. Further, the control will make known all risks related to the investment through proper estimation of all financing risks. Additionally, it must be noted that all business-projects involve in operating in a competitive environment together with a number of other complex players and actors. Therefore, the demand for or the pricing of any business-project value before completion is impossible. Further, there is always a chance that the new and complex risks may pop up before, during and after completion of the business-project. For example: new legislation or regulations may be proposed and passed which can impact the business project and may require that a substantial changes be made to the economic lifetime and earnings potential the project. More so, the success of most individual business-projects will often depend on the fund manager's in identifying sound investment ventures. However, changing key project team members may affect the business-project ability attract adequate funds or negatively impact the project’s ability to generate the expected earnings. Most importantly, this study discovered that one major risk of business-projects financing is that the project manager / team members may lack the competency require to

make the right decisions about the investments and realizations in the project that later turn out to be poor relative to the prediction, and which will affect investment yield negatively.

5.3 Main Findings

This study showed that the psychological state of the entrepreneur or the project team as well as their competency and the level of knowledge on economic factors is the foundation to building an effective risk estimation measures to ensure the sound financing of business-project. It also came to light that the three major risk confronting all business-projects in developing economies, particularly the Ghana youth employment program are idea risk, competency risk and return on investment risk. Also, there exist difference among the risk indicators in terms of their impacts when estimating the risk of financing SME business-project and these risks have substantial impact on SMEs business-project financing in developing economies. Additionally, the study measure reveals a positive significant correlation between the total scores of the risk indictors and this would aid the prediction of the relation between the indicators used to estimate the risk of financing SMEs business-projects. Also, the study finding showed that using the three indicators can help to estimate the risk of financing SMEs business-projects; irrespective of the volume funds provide and location of the project significantly. Further, the study also revealed that there is the presence of well-built positive relationship among the risk indicators of financing SMEs business-projects. This attests that the decision to finance or not to finance SMEs business-project can be estimated; after a careful analysis of the three key risk indicators with regard to information contain in the business-project plan.

The study further revealed that financing of business-projects in developing economies, particularly the Ghana youth employment program is prone to idea risk, competency risk and return on investment risk. The study also revealed that the degree of impact in the event of any of the three key risk indicators occurring could range from: insignificant, average, serious, extreme or catastrophic. This shows how important to

accurately estimate each of the three identified risks indicators before funding any business-project. Qualitatively, the study further discovered the following guiding rules of estimating the risk of financing business-projects.

vi. **Rule 1:** if the business-project was developed by a person/team with sound psychological, cognitive and high emotional intelligence

Or

All economic, finance, cultural, social and environmental factors are considered at every decisions stage, then **risk is Very Low**.

vii. **Rule 2:** if the business-project was developed by a person/team with sound psychological, cognitive and high emotional intelligence

Or

All economic and finance factors are considered then **Risk is Low**

viii. **Rule 3:** if the business-project was developed and is being managed by highly educated, experienced and well-informed person / team

Or

Incorporates modern technology in its operation, then **Risk is Average**

ix. **Rule 4:** if the business-project was developed by a person/team with poor psychological, cognitive and high emotional intelligence

Or

Ignores most economic / finance factors in decision making, then **Risk is High**

x. Rule 5: if business-project was developed by a person / team with little or no finance and economics knowledge

Or

Being managed by low or uneducated, inexperience and ill-informed person / team, and does incorporate modern technology in its operation**,** then **Risk is Very high.**

The study further discovered quantitatively that any of the three risk indicator with a score from 0.83 and above is in very high risk category and will require management to set-up control measures and operation efficiency by 80% or more to be able to reduce its

impact to a high risk, then afterwards a further 67% step-p control measures would bring it to normal risk. Also, any score from 0.65 is in a high risk category. Also, a risk score of 0.55 is an indication of a normal risk, while a score of 0.40 and 0.275 indicates low and very low risks respectively. However, a 67% step-up in control measures and operation efficiency is expected to reduce a normal risk to very low risk, while a further 50% step-up will reduce a normal risk to low risk. It is worth noting that one risk leads to another. Therefore, idea risk would lead to competency risk with a score ranging from 0.1 to 0.4. This score is cumulative, therefore it is expected to increase the aggregate risk scores to 0.73 on the Fuzzy risk matrix. The stability point on the curve means that investors can make the right decision to minimize idea and competency risk from reaching point 0.73. That is, an aggregate score of the two risk that falls below 0.5 is considered a Stability Zone, while at point 0.5 which is also the inter-section point of the risk line and the funding line is known as the Stability Point.

5.4 The Novelty of the Findings and its Advantages in Helping to Solve Current Problems

The current situation surrounding business-financing is unfavorable as economic, social and technology advancement continues to place more pressure on profit margins and the industry's competitive forces continue to intensify. Therefore, financing business-project in developing economies, particularly the Ghana youth employment program will requires effective tools to carefully estimate the risk of financing such project to guarantee and attract sufficient funding and ensure a continuous future inflow of funds, delivery of high quality value and profitability. In view of this the study can conclude that effective estimation of the risk of financing business-project would play a major role in attracting funding as well as guaranteeing higher return on investment in business-projects. Further, the study have developed four scientifically-based models, these are: Dodecagon of business-project financing risk; Business-project financing risk triangle; Business-project risk block; Business-project financing curve, and the Business-project financing risk

system model. After systematic applications of all the developed models to estimate the risk of financing business-project, this study can conclude that these models are the most effective instrument that can effectively estimate the risk of financing business-projects. Further, these models are applicable in all business-project financing risk estimation and should be adapted by all individuals, organizations/entities, project developer/investors as well as all stakeholders who are involved in business-project financing and management.

5.5 Recommendations

Based on the research findings and data analyzed the following recommendations are made to ensure the effective estimation of the risk of financing business-project, particularly the Ghana youth employment program.

i. All stakeholders involved in financing business-project should pay critical attention to the twelve (12) identified risk factors and the three identified risk indicators to ensure sound business-project investment decision making.

ii. The Ghana Youth Employment Agency and all business-project actors should follow the systematic approach applied in this study to estimate the risk of financing all business-project. This will help to identify new and more complex risks that may pop up in the course of the project implementation.

iii. Also, all business-project financing should incorporate fully all the developed models at every stage of estimating risks.

iv. Further, critical attention must be paid to the psychological and cognitive state of all persons seeking funding to execute business-projects and those who will manage the funds, thus the project team.

v. Additionally, the competency of the entrepreneur/ project team members must to thoroughly analyze before committing any funds into the project.

vi. Also, governments must ensure sound economic policies and serene business environment to guarantee the security and safety all business-project undertaken, all persons involved as well as higher return.

vii. More so, Business-project investors must know their risk tolerance level so as to avoid fatalities.

viii. Furthermore, all parties involved in the implementation of business-project must assume financing risk responsibilities in proportion to the value or benefit they will enjoy.

ix. Additionally, investors must consider investing in multiple business-project portfolios to help spread financing risk.

x. In furtherance, continuous risk assessment must be carried out throughout the entire business-project life cycle.

xi. Also, effective risk control systems must also be put in place to facilitate the early detection of all potential risks.

xii. Further, entrepreneurs seeking funding for business-projects must ensure they apply for the right funding type, and should not settle for unfavorable lending terms.

In supposition, this study recommend that all business-project financing actors undertaking systematic estimation of business-projects business-project financing risks by applying the appropriate model(s) developed by this study before putting funds in any such venture. It is therefore, a sound decision to invest in business-projects after thorough financing risk estimation because business-projects implementation constitutes the backbone of every strong economy, and has the potential to generate higher profitability, particularly in developing economies.

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APPENDIXES

APPENDIX A
SMEs Business–Project Template

[*INSERT YOUR BUSINESS LOGO*] if any

[*Your Name and Title*]
[*Business Name*]
[*Business Address*]

Business Plan

[Prepared: .....]
[*Date .....]*

Contents

- Key financing and financial indicators analysis
- Assumptions (personal)
- Cost of Business project
- Cash flow projection
- Profit or loss analysis
- Investment recovery plan (repayment of external / internal financing when fall due)

V.Supporting documentation:

Part I

Business Plan Summary

[The business summary should be no longer than one page and should focus on how the business is going to be successful. The answers should briefly summarise in more detail throughout the plan.]

Part II

1.The Business

Code	No.	
R1A1, R1B1, R1D1, R2D2, R2C1, R2D1, R3C1, R3D1	**1.1**	**Business name:** *[Enter the business name as registered. If not registered , add the proposed business name.]*
R1A2, R1B2, R1C1, R1D2, R1A1, R2B2, R2C2, R2D2, R3A1, R3B1, R3C2, R3D2	**1.2**	**Business type:** *[Sole trader, partnership, company.]*
R1D3, R2B3, R2D3, R3A2, R3B2, R3A4, R3B3, R3C3, R3D3	**1.3**	**Business location**: *[Main business location]*.
R1B3, R2A3, R2B4, R2C3, R3A3,	**1.4**	**Date established**: *[The date tarted or intended to trading.]*
R1D1, R2B1, R2C4, R2D4, R3C4, R2A2, R2C4, R2D4	**1.5**	**Management structure:** *[show how the business would be managed]*
R1D1, R1A1, R2B1, R2C1, R2D1, R3A3, R3C1,	**1.6**	**Ownership:** *[List all of the business owners.]*
R1A1, R1D2, R2B2, R2C2, R2D2, R2A4, R3A2, R3C2, R3D1, R3B4	**1.7**	**Background of key persons:** *[Briefly outline the experience and/or years in the industry and any major achievements/]*
R1A2, R1B1, R1C3, R1D3, R2A1, R3D2, R2B3,R2C3, R2D3, R3B1, R3A3, R3C3	**1.8**	**Nature of business:** *[What products/services will be produce or provide ?]*
R1B2, R1A3, R1C4,R1D4, R2A2, R2B4, R2C4, R2D4, R3B2, R3A4, R3C4, R3D3	**1.9**	**Innovation***: [what is unique about the product or service and kind of technology applied]*
R1C1, R1A4, R1B3, R2B1, R2C1, R2D1, R2A3, R3A1, R3C1, R3B3, R3D4	**1.1.1**	**Mode of operation**: *[how would activities be undertaken, centralized, decentralized, branches etc.]*
R1A1, R1C2, R1D2, R1B4, R2B2, R2C2, R2A4, R3A2, R3C2, R3D1, R3B4,	**1.1.2**	**Identified risk and contingency palns:** *[talk about key idea, competency and financing risks identified or anticipated and how those risks would be dealt with]*

R1A2, R1B1, R1C3, R2B3, R2C3, R2D3, R3B1, R3D2, R3A3, R3C3,	**1.1.3**	**Legalities:** *[talk about all legal requirements that have been met and the difficult ones that await the future?]*
R1B2, R1A3, R1C4, R1D4,R2A2, R2B4, R2C4, R2D4, R3B2, R3D3	**1.1.4**	**Financial stability plans**: *[talk about all fianacial plans and measures put in plance to ensure activitity continuity]*

2.Market

Code	**No.**	**Target customers**: *[Who are the potential buyers? Why would they buy the products/services over others?]*
R1C1, R1A4, R1B3, R2B1, R2C1R2D1, R2A3, R3A1, R3C1, R3B3	**2.1**	
R1A1, R1C2, R1D2, R1B4, R2A1, R2B2, R2C2, R2D2, R2A4, R3B1, R3D1, R3D4	**2.2**	**Market risks and Marketing strategy**: *[planned strategy to enter the market and attract customers? How and why will this work? What are the identitied risks and how will those risks be overcome]*
R1A2, R1B1, R1D3, R2B3, R2C3, R3B1, R3D1, R3A3, R3C3	**2.3**	**Evironmental / industry risk**: *[state clearly the kind of impact the business would have on the environment? What risks exist in the environment? Strategies to deal with these issues]*.
R1B2, R1A3, R1C3, R1D4, R2A2, R2B4, R2C4, R2D3, R3B2, R3D2, R3A4, R3C4,	**2.4**	**S.W.O.T**: *[Provide detailed and systemtic S.W.O.T analysis]*

3.The Way forward

Code	**No.**	**Vision statement:** [*The vision statement should briefly outline future plan for the business. It should state clearly what the overall goals for the business are.]*
R1A1, R1B3, R1C4, R2B1, R2C1, R3A4,	**3.1**	
R1A2, R1C1, R1D2, R1B3, R2B2, R2A4, R3A2, R3C1, R3B4, R3B3, R3D4	**3.2**	**Goals/objectives**: *[This should also state clearly what the short & long term goalsare ? What activities will be undertake to meet them and ensure activity contituet?]*

4.The Finances

Code	**No**	**Financing** : [*Briefly outline all key financing and financial indicators that can impact the business. What financial assumptions to behold for the business? Details constituent of the total cost. Cash flow projections, how much profit you intend on making in a particular timeframe. How much money will be need up-front? Where will any additional funds come from? How much of the fund will come from own sourcess? How much funds will come from other members if any?]*
R1A3, R1B4, R1C2, R2A1, R2C3, R2D4, R2D3, R3A1, R3A3, R3B4,	**4.1**	

5.Supporting documents

Code	No.	**Legal / other documents:** *[Attach any other relevant comment that shows your ability to commence a successful entrepreneurship. Eg. Business registration documents, permits, proof of bank account, workshops attended, business clinic courses, personal CV etc.]*
R1B1, R1A4, R1C3, R1D4, R2A2, R2A3,	**5.1**	

Part III

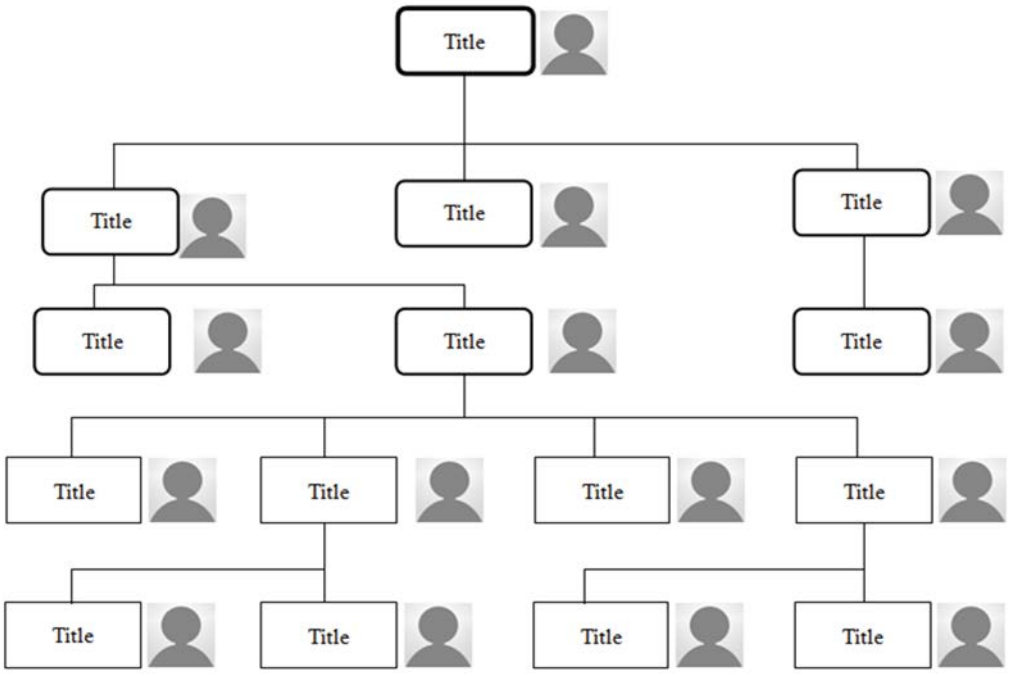
6.Organisation Chart

Code	No.	**Organizational Chart:** *[Outline the management structure of the business in a char form.]*
R1B2, R3A1,	**6.1**	

SMEs Business Project Hierarchical Organizational Chart with Pictures

COMPANY	COMPILED BY	DATE COMPLETED

7.Details of owners and team members



Code	No.	Names of owners: *[List all of the business owners.]*
R1A2, R2B3,	**7.1**	
R1C1, R1D2, R1A3, R1B3, R2A3, R2C4,	**7.2**	**Details of management**: *[As the owner(s), will you be running the business or it someone be running the business on your behalf? What will be your involvement? If it is a partnership briefly outline % share, role in the business, the strengths of each partner and whether you have a partnership agreement/contract in place?]*
R1A4, R1B4, R2C1, R3A3,	**7.3**	**Experience:** *[What experience do the business owner(s) have? How many years have you owned or run a business? List any previous businesses owned/managed. List any major achievements/awards. What other relevant experience do you have? Don't forget to attach your resume(s) to the back of your plan.]*

8.Key personnel:

Code	No.	Current staff: *[List all current staff in the table below.]*
R2A1, R2B1	**8.1**	

Job Title		Name	Expected staff turnover	Skills or strengths
No.				
1	**[e.g. Manager]**	**[Dr Asare Joseph]**	**[8-20 months]**	**[Relevant qualifications in eg. Sales/Marketing. At least 5 years experience in the industry. Award in marketing excellence.]**
2				
3				
4				

Code	No.	Required staff: [*List all required staff in needed to run a successful business in the table below.]*
R1B1, R2B2, R3A4	**8.2**	

Job Title		Number	Expected staff turnover	Skills necessary	Date required
No.					
1	**[eg. Risk manager]**			**[Relevant qualifications in risk analysis and aanagement. At least 24years experience.]**	**[Month/Year]**
2					
3					
4					

Code	No.	**Recruitment options**:*[How do you intend on obtaining your required staff? Advertising in the local paper, online advertising, and/or training current staff members?]*
R1A1, R1B1, R1D3, R2A1, R2C2, R1D3	**8.3**	
R1A2, R1B2, R1D4, R2A2, R2C2, R3A3, R3D3	**8.4**	**Skill retention strategies**:*[What procedural documentation will you provide to ensure the skills of staff are maintained? Do you have an appropriate allocation of responsibilities? How are responsibilities documented and communicated to staff? What internal processes will you implement to regularly check that the current skills of staff members are still appropriate for the business?]*

9.Products/services

Code	No.	**Product and Services**: *[List all product and services in the table below.*
R1A1, R1C1, R1D1, R2A2, R2D2, R3A4, R3B3, R3B3	**9.1**	

Product/Service No.		Description	Quantity	Price per unit
1	**[Product/service name]**	**[Brief description of the product/service]**		**[Price GHs]**
2				
3				
4				

Code	No.	**Market position:** *[Where do your products/services fit in the market? Are they high-end, competitive or budget? How does this compare to your competitors?]*
R1D1, R1B1, R2C2, R2D1, R2A3, R2C4, R3A2, R3B2 , R3D2	**9.2**	
R1D3, R1A4, R1B3, R2C1, R2D2, R3B2, R3A3,	**9.3**	**Unique selling position:** *[How will your products/services succeed in the market where others may have failed? What gives your products/services the edge?]*
R1A1, R1D3, R2A2, R2B3, R2D3, R3A4, R3B3	**9.4**	**Anticipated demand**: *[What is the anticipated quantity of products/services your customers are likely to purchase? For example, how much will an individual customer buy in 6 months or 12 months?]*
R1A2, R1D4, R2B4, R2C3, R2D4, R3A1, R3B4	**9.5**	**Pricing strategy**: *[Do you have a particular pricing strategy? Why have you chosen this strategy?]*
R1C2, R2D6, R2A3, R2C4, R3A2,	**9.6**	**Value to customer**: *[How do your customers view your products/services? Are they a necessity, luxury or something in between?]*
R1A4, R2C1, R2A4,	**9.7**	**Growth potential**: *[What is the anticipated percentage growth of the product in the future? What will drive this growth?*

10.Innovation

Code	No.	
R1A1, R1D1, R2A1, R2D2, R2B3, R3D1, R3A4, R3D4	**10.1**	**Research & development (R&D) / innovation activities***: [What R&D activities will you implement to encourage innovation in your business? What financial and/or staff resources will you allocate?] Intellectual property strategy: [How do you plan to protect your innovations? List any current trade marks, patents, designs you have registered. Do you have confidentiality agreements in place?]*

11.Risk Management and Insurance

Code	No.	
R1A2, R1B2, R2D2, R1C3, R1D3, R2A2, R2C2, R2B4, R2C3, R3D1,R3C3,	**11.1**	**Risk management:** *[List the potential risks (in order of likelihood) that could impact the business in the table below.]*
R1C4, R2A3, R2C4, R2D3	**11.2**	**Insureance for Business assets and staff:** *[Provide details if you have insurance for staff and busisness assets in the event of a fire, burglary, or damage?]*

12.Legal considerations and Operation

Risk				Likelihood	Impact	Strategy
Idea Risk		**Conpetency Risk**	**Return of Investm. Risk**			
1	**[List /describe all idea risks and the potential impact to your business.]**	**[List /describe all idea risks and the potential impact to your business.]**	**[List /describe all idea risks and the potential impact to your business.]**	[Highly Unlikely, Unlikely, Likely, Highly Likely]	[High, Medium, Low]	[What actions will you take to minimise / mitigate the potential risk to your business?]
2						
3						
4						

Code	No.	
R3A2, R3D2,	**12.1**	**Legal**: *[List the legislation which will have some impact on the running of your business*
R2A3, R2C2	**12.2**	**Production process / operation:** *[What is the process involved in producing the products or services.. Is there a manufacturing process? Who is involved in the process? Are there any third parties involved? What is involved in delivering the service to your customers?]*
R2D3, R2C2	**12.3**	**Suppliers / inventory:** [*Who are your main suppliers? What do they supply to the business? How will you maintain a good relationship with them?]*
R2A3,	**12.4**	**Plant & equipment available**: [*List all current equipment avaliable in the table below]*

Production process / operation *[List all production cost in the table below],*

No.	Equipment	Purchase date	Purchase price	Running cost
1	**[e.g Fax Maxhine]**	**[eg. 11/06/2018]**	**[e.g GHs1000]**	**[e.g GHs20 a month]**
2				
3				
4				

Plant & equipment required*: [List all equipment needed to be purchase in the table below]*

No.	Equipment	Purchase date	Purchase price	Running cost
1	**[e.g Fax Maxhine]**	**[eg. 11/06/2018]**	**[e.g GHs1000]**	**[e.g GHs20 a month]**
2				
3				
4				

Inventory*: [List current inventory items in the table below. If you have a substantial inventory, you may prefer to attach a full inventory list to the back of this business plan.]*

No.	Inventory item	Unit price	Quantity in stock	Total cost
1	**[Eg. Rice]**	**[e.g GHs15 / kg]**	**[e.g 100k ilograms]**	**[e.g 100kg x GHs15 = GHs 1500]**
2				
3				

Inventory: *[List inventory items to be purchase in the table below. If you have to purchase substantial inventory, you may prefer to attach a full inventory list to the back of this business plan.]*

No.	Inventory item	Unit price	Quantity in stock	Total cost
1	**[Eg. Rice]**	**[e.g GHs15 / kg]**	**[e.g 100k ilograms]**	**[e.g 100kg x GHs15 = GHs 1500]**
2				
3				
4				

13.Technology

Code	No.	**Technology:** [*List all technology applied or to be appliy in the business]*
R1D1, R1A4, R2C1, R1A4, R2D4	**13.1**	

14.Sustainability Plan

Code	No.	
R1A1, R1D2, R1B3, R2A1, R2B1, R2C2, R3A1,	**14.1**	**Technology (Software):** *[What technology do you require? For example: website, point of sale software or accounting package? What will be the main purpose for each? What is the estimated cost of each technology solution?]*
R1A2, R1D3, R2B2, R2C2, R2D1, R2A4, R3C2	**14.2**	**Communication channels: [***How can your customers get in contact with you? These channels can include: telephone (landline/mobile), post box, shopfront, email, fax, internet blog or social media channel.]*
R2A2, R3B3, R2D1, R2B3, R2C4, R3A1, R3B1, R3C4	**14.3**	**Payment types accepted:** *[What payment types will you accept. cash, credit, cheque, etc]*
R1C1, R1B4, R1D4 , R2B4, R3A2, R3B2, R3D3	**14.4**	**Credit policy:** *[What is your credit policy for customers/suppliers? How long is the credit period? What are your collection strategies/procedures? What credit does your business receive? What are the terms?]*
R1B1, R1D1, R2B1, R2D2, R2A3, R2C3, R3A3,	**14.5**	**Quality control:** *[Describe your quality control process. What checks or balances do you have in place to ensure the product or service you offer is produced to the same standard of quality? What steps do you take to meet product safety standards?]*
R1D2, R2A4, R2D3, R3C1, R3A4, R3B3	**14.6**	**Memberships & affiliations:** *[Is your business a member of any particular industry association or club? Do you have any affiliations with any other organisation?]*
R1B2, R1A4, R1D3, R2B2, R2D4, R3A1, R3D1, R3B4,	**14.7**	**Environmental/resource impacts:** *[Describe the impact your business could potentially have on the environment. E.g. a particular manufacturing process may contribute negatively on the local water supply.]*
R1C3, R1D4, R2A1, R2B3, R3D2	**14.8**	**Community impact & engagement:** *[How does your environmental impact affect the local community? How can you engage the community in minimising your impact?]*
R1A1, R1D1, R1C4, R1D3, R2A2, R2D1, R2B4, R3B1, R3A3, R3C4, R3D3	**14.9**	**Risks/constraints:** *[List any risks/constraints to your business resulting from this environmental impact?]*
R1A2, R1C1, R1D2, R2A3, R3A3,	**14.1.1**	**Strategies:** *[What strategies will you implement to minimise/mitigate your environmental impact and any risks to your business? Will you conduct an environmental audit?]*
R1C2	**14.1.2**	**Action plan:** *[List your key sustainability/environmental milestones in the table below?]*

No.	Sustainability milestone	Target	Target date
1	**[eg. Reduce waste generation]**	**[40% reduction]**	**[Month/Year]**
2			
3			
4			

15.S.W.O.T. Analysis

Code	No.	S.W.O.T analysis: *[List each of your businesses strengths, weaknesses, opportunities or threats in the table below and then outline how you plan to address each of the weaknesses/threats.]*
R1C1, R1B1, R1D4, R1A1, R2A1, R2B2, R2D2, R2C3, R3A1, R3B2, R3C3, R3D4	**15.1**	

Strengths	Weaknesses
[e.g Efficiencylocation]	**[e.g High electricity costs]**

Opportunities	Threats
[e.g customer loyalty]	**[e.g High labour turnover]**

16.Your competitors

Code	No.	Copetitors: *[How do you rate against your competitors? How can your business improve on what they offer?]* *Competitor details: [List at least 6 key competitors in the table below.]*
R1D1, R2A2, R2B3, R2D3, R3A2, R3B3	**16.1**	

Competitor		Established date	Size	Market share (%)	Value to customers	Strengths	Weaknesses
1	**[Competitor name]**	**[When were they established?]**	**[Number of staff and/or turnover]**	**[Estimated % of market share]**	**[Unique value to customers. E.g. quality, price or service?]**	**[Competitor's main strengths?]**	**[Competitor's main weaknesses?]**
2							
3							
4							
5							
6							

17.Sales

Code	No.	**Promotional strateg:** *[What strategies do you have for promoting and advertising your products/services in the next 12 months?]*
R1D2, R3A3	**17.1**	

Planned promotion type	**Expected business improvement**	**Cost (GHs)**	**Target date**
[eg. Print media advertising, online advertising, social media campaign or event. Etc.]	**[How do you expect it will improve your business success?]**	**[GHs00]**	**[Month/ Year]**

Code	No.	**Sales & marketing objectives:** *[Who makes up your sales team? What sales techniques will they use? What tools/material will they use to help sell your products/services? What sales goals/targets will they meet?]*
R1A4, R1B3, R1C4, R2C4, R2D4, R3B1, R3A4	**17.2**	
R1A1, R1D4, R2B1, R2C1, R2A4, R3A1, R3B2	**17.3**	**Unique selling position:** *[Why do you have an advantage over your competitors? How will your products/services succeed in the market where others may have failed?]*
R1D1, R2A1, R2C2, R2D1, R3B3,	**17.4**	**Salling & distribution channels**: *[e.g. Shopfront, internet, direct mail, export or wholesale]*

Channel type	**Products/services**	**Percentage of sales (%)**	**Advantages**	**Disadvantages**
[e.g. Shopfront, internet, direct mail, export or wholesale]	**[List all the products/services sold via this channel]**	**[What percentage of overall sales do you expect to sell via this channel?]**	**[What advantages are there of using this channel for these products?]**	**[What challenges do you expect to face using this channel? How will you overcome them?]**

18.The Future

Code	No.	
R1D2, R2A2, R2B4R2C3, R3C1, R3A3, R3B4, R3D4	**18.1**	**Vision statement**: [*What is your business' vision statement? It should briefly outline your future plan for the business and include your overall goals.]*
R1A2, R1D3, R2A4, R2A3, R2C4, R2D3, R3D1, R3A4	**18.2**	**Mission statement**: *[What is your business' mission statement? I.e. how will you achieve your vision?]*
R1B4, R1D4, R2B2, R2C1, R3A1, R3B2, R3D1,	**18.3**	**Goals/objectives:** *[What are your short & long term goals? What activities will you undertake to meet them?]*
R1D1, R2A1, R2C2, R2D2, R3A2, R3B3	**18.4**	**Action plan:** *[write the action plan in the table below]*

Milestone	**Date of expected completion**	**Person responsible**
[What are the business milestones that you need to complete starting from today?]	**[When do you expect to complete them?]**	**[Who is responsible for delivering this milestone?]**

19.The Finances

Code	No.	
R1B4, R2B4, R2C4, R2D3	**19.1**	**Required staff:** *[List all required staff in needed to run a successful business in the table below.]*

20.Supporting documentation

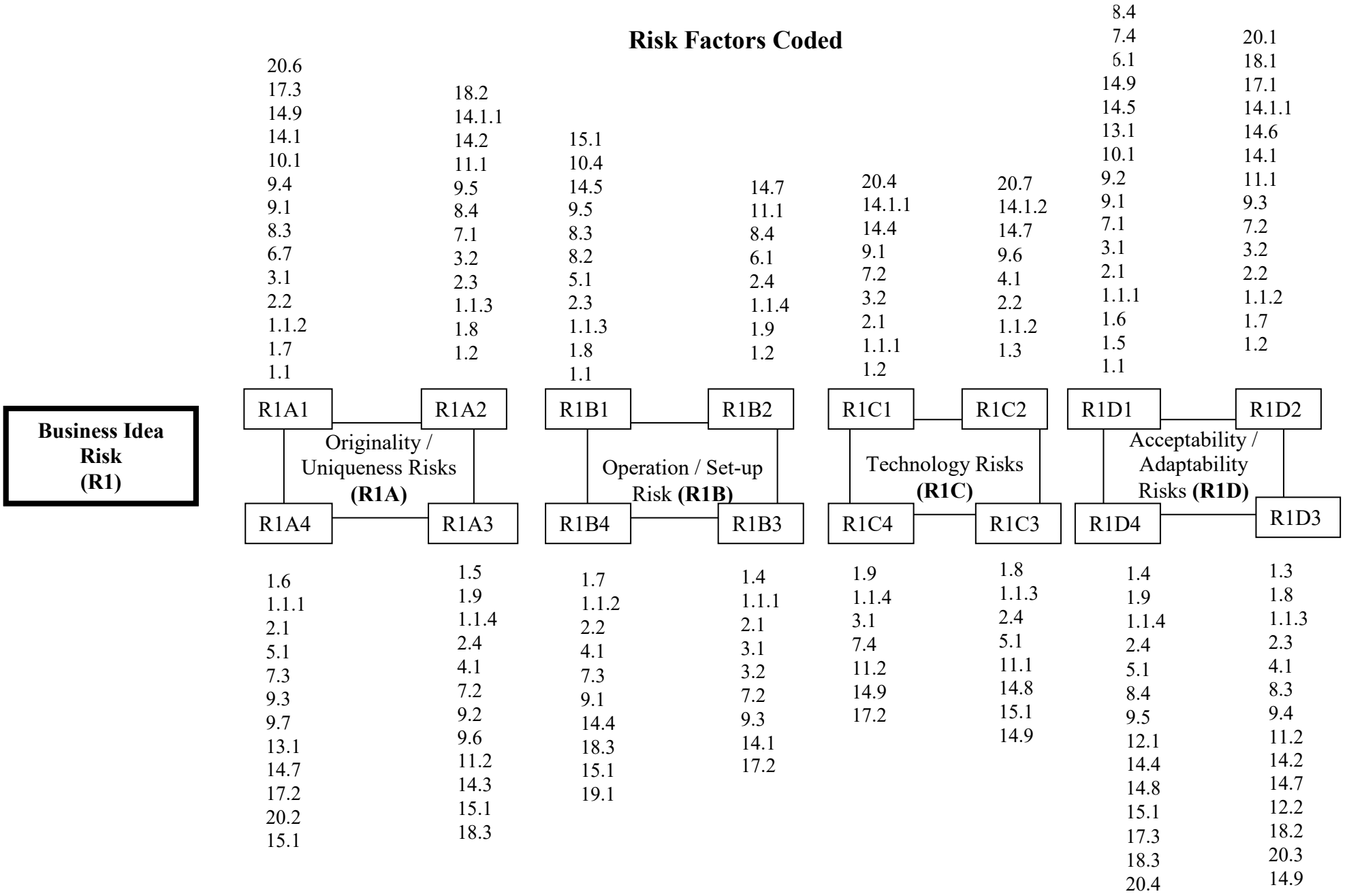
Code	No.	
R1D2, R2D1, R2B3, R3A3,	**20.1**	**Financial objectives:** *[List your key financial objectives. These can be in the form of sales or profit targets. You could also list your main financial management goals such as cost reduction targets.]*
R1A4, R2A2, R3A4	**20.2**	**Finance required**: *[How much money up-front do you need? Where will you obtain the funds? What portion will you be seeking from loans, investors, business partners, friends or relatives, venture capital or government funding? How much of your own money are you contributing towards the business?]*
R2B4	**20.3**	**Assumptions**: *[List your financial assumptions. These can include seasonal adjustments, drought or interest rates etc.]*
R1C1, R1D4, R3A1	**20.4**	**Start-up costs for the 1st year**: *[attach your own start up costing sheet at the back of this business plan.]*

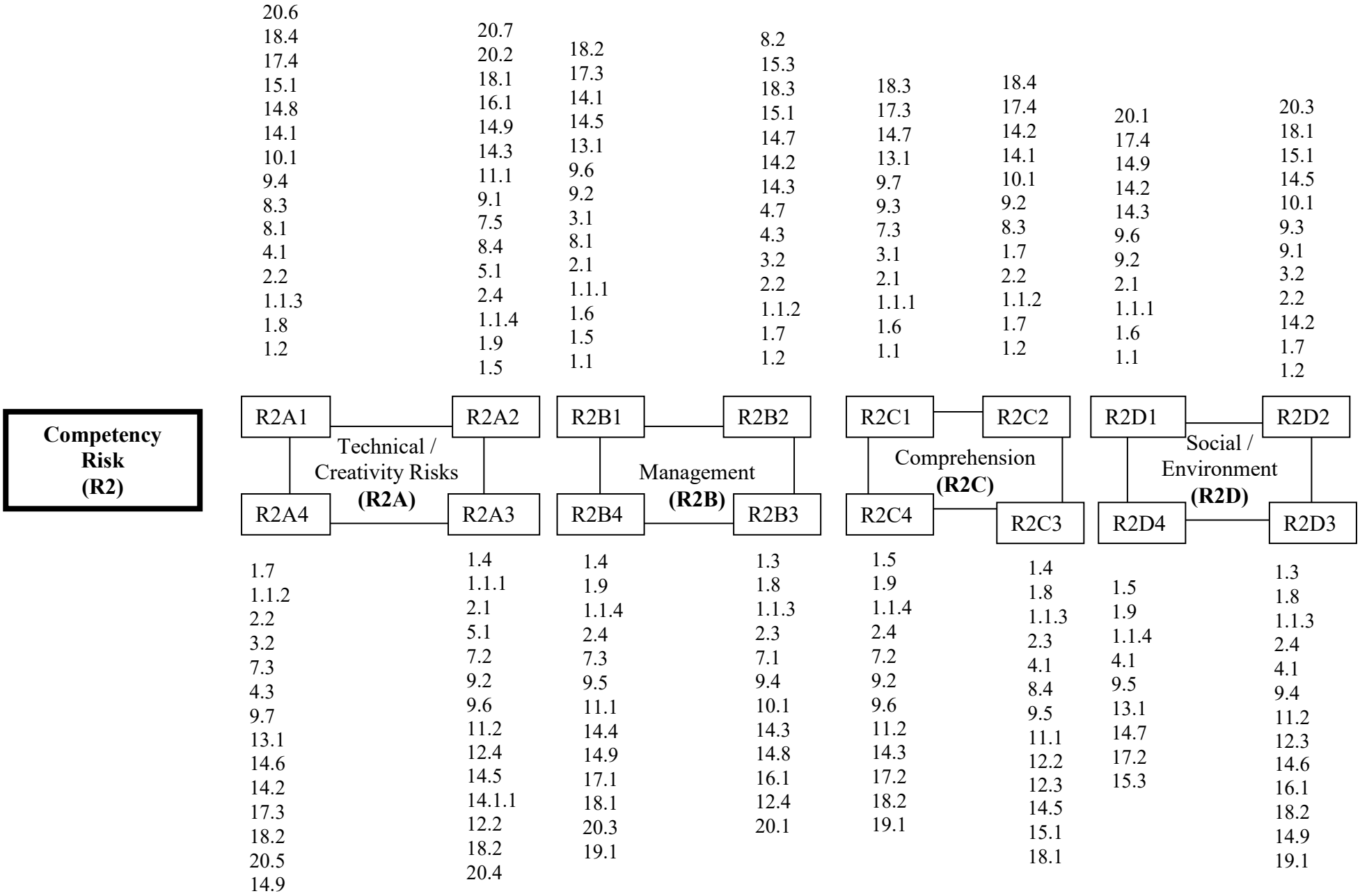
R2A4, R3A2	**20.5**	**Profit and loss forecast**: *[Attach your own profit or loss sheet at the back of this business plan]*
R1A1, R2A1, R3A3, R3B4,	**\20.6**	**Expected cash flow**: *[Attach your own cash flow projections sheet at the back of this business plan]*
R1C2, R3D2, R3A4	**20.7**	**Any other Supporting Documents: Attached is my supporting documentation in relation to this business plan. The attached documents include:** *[List all of your attachments here. These may include resumes, inventory list, survey/questionnaire and/or financial documents.]*.

Reference: *Austrilai governement business plan guide*

APPENDIX B

Risk Factors Coded




Competency Risk (R2)
R2A1
R2A2
R2A3
R2A4
Technical / Creativity Risks (R2A)
R2B1
R2B2
R2B3
R2B4
Management (R2B)
R2C1
R2C2
R2C3
R2C4
Comprehension (R2C)
R2D1
R2D2
R2D3
R2D4
Social / Environment (R2D)
20.6 18.4 17.4 15.1 14.8 14.1 10.1 9.4 8.3 8.1 4.1 2.2 1.1.3 1.8 1.2
20.7 20.2 18.1 16.1 14.9 14.3 11.1 9.1 7.5 8.4 5.1 2.4 1.1.4 1.9 1.5
18.2 17.3 14.1 14.5 13.1 9.6 9.2 3.1 8.1 2.1 1.1.1 1.6 1.5 1.1
8.2 15.3 18.3 15.1 14.7 14.2 14.3 4.7 4.3 3.2 2.2 1.1.2 1.7 1.2
18.3 17.3 14.7 13.1 9.7 9.3 7.3 3.1 2.1 1.1.1 1.6 1.1
18.4 17.4 14.2 14.1 10.1 9.2 8.3 1.7 2.2 1.1.2 1.7 1.2
20.1 17.4 14.9 14.2 14.3 9.6 9.2 2.1 1.1.1 1.6 1.1
20.3 18.1 15.1 14.5 10.1 9.3 9.1 3.2 2.2 14.2 1.7 1.2
1.7 1.1.2 2.2 3.2 7.3 4.3 9.7 13.1 14.6 14.2 17.3 18.2 20.5 14.9
1.4 1.1.1 2.1 5.1 7.2 9.2 9.6 11.2 12.4 14.5 14.1.1 12.2 18.2 20.4
1.4 1.9 1.1.4 2.4 7.3 9.5 11.1 14.4 14.9 17.1 18.1 20.3 19.1
1.3 1.8 1.1.3 2.3 7.1 9.4 10.1 14.3 14.8 16.1 12.4 20.1
1.5 1.9 1.1.4 2.4 7.2 9.2 9.6 11.2 14.3 17.2 18.2 19.1
1.4 1.8 1.1.3 2.3 4.1 8.4 9.5 11.1 12.2 12.3 14.5 15.1 18.1
1.5 1.9 1.1.4 4.1 9.5 13.1 14.7 17.2 15.3
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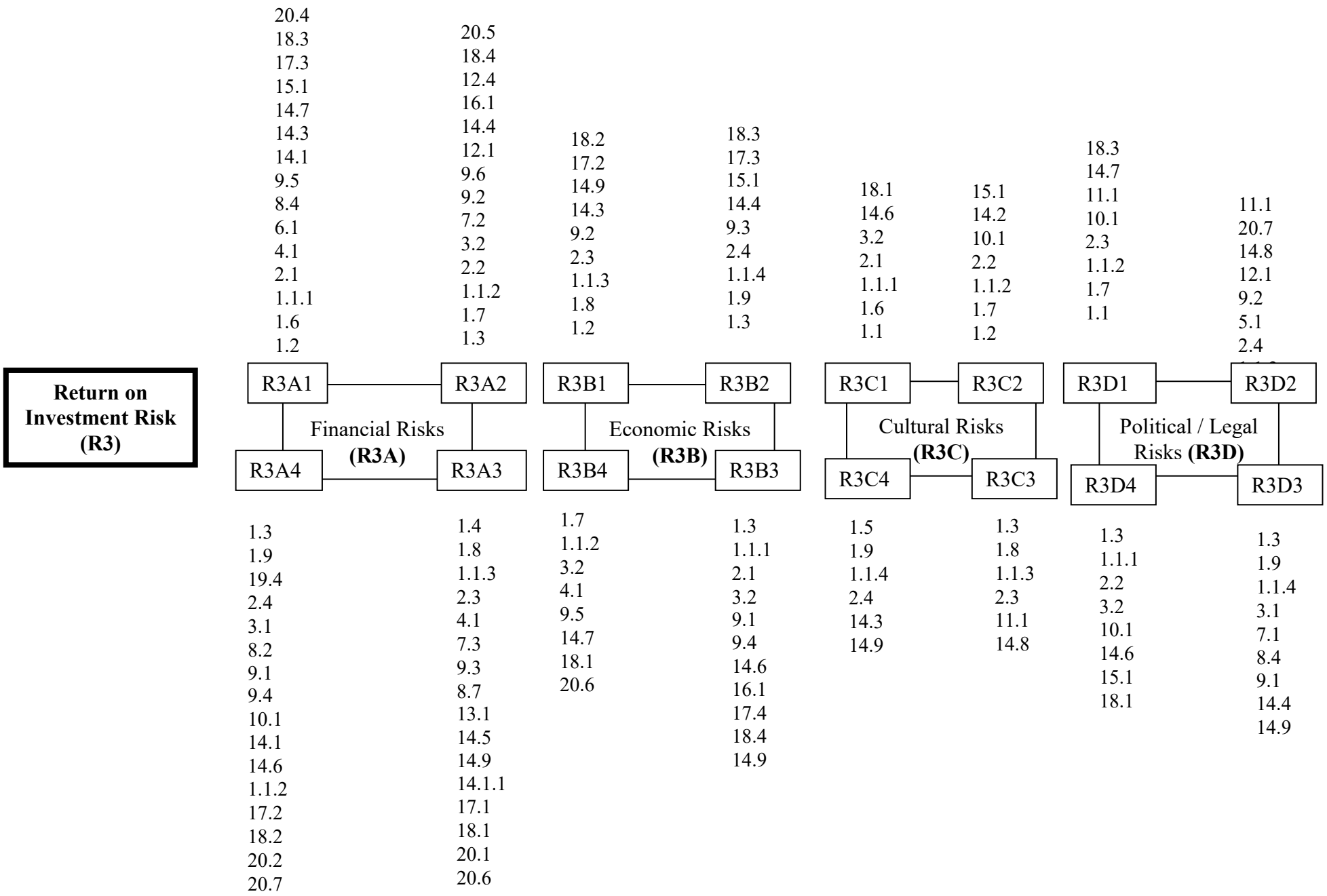
Return on Investment Risk (R3)
R3A1
R3A2
R3A3
R3A4
Financial Risks (R3A)
R3B1
R3B2
R3B3
R3B4
Economic Risks (R3B)
R3C1
R3C2
R3C3
R3C4
Cultural Risks (R3C)
R3D1
R3D2
R3D3
R3D4
Political / Legal Risks (R3D)
20.4 18.3 17.3 15.1 14.7 14.3 14.1 9.5 8.4 6.1 4.1 2.1 1.1.1 1.6 1.2
20.5 18.4 12.4 16.1 14.4 12.1 9.6 9.2 7.2 3.2 2.2 1.1.2 1.7 1.3
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1.4 1.8 1.1.3 2.3 4.1 7.3 9.3 8.7 13.1 14.5 14.9 14.1.1 17.1 18.1 20.1 20.6
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1.3 1.8 1.1.3 2.3 11.1 14.8
1.3 1.1.1 2.2 3.2 10.1 14.6 15.1 18.1
1.3 1.9 1.1.4 3.1 7.1 8.4 9.1 14.4 14.9

PART II

Summary of Risk Factors Codes

CODES OF BUSINESS IDEA RISK (R1) FACTORS															
Originality / Uniqueness Risk (R1A)				**Technology Risks (R1B)**				**Operation / Set-Up Risk (R1C)**				**Acceptability / Adaptability R1D**			
R1A1	**R1A2**	**R1A3**	**R1A4**	**R1B1**	**R1B2**	**R1B3**	**R1B4**	**R1C1**	**R1C2**	**R1C3**	**R1C4**	**R1D1**	**R1D2**	**R1D3**	**R1D4**
20.6	18.2	1.5	1.6	0.4	14.7	1.4	1.7	20.4	20.7	1.8	1.9	18.4	20.1	1.3	1.4
17.3	14.1.1	1.9	1.1.1	14.5	11.1	1.1.1	1.1.2	14.1.1	14.1.2	1.1.3	1.1.4	17.4	18.1	1.8	1.9
14.9	14.2	1.1.4	2.1	9.5	8.4	2.1	2.2	14.4	14.7	2.4	3.1	16.1	17.1	1.1.3	1.1.4
14.1	11.1	2.4	5.1	8.3	6.1	3.1	4.1	7.2	9.6	5.1	7.4	14.9	14.1.1	2.3	2.4
10.1	9.5	4.1	7.3	5.1	2.4	3.2	7.3	3.2	4.1	11.1	11.2	14.5	14.6	4.1	5.1
9.4	8.4	7.2	9.3	2.3	1.1.4	7.2	9.1	2.1	2.2	14.8	14.9	13.1	14.1	8.3	8.4
8.3	7.1	9.2	9.7	1.1.3	1.9	9.3	14.4	1.1.1	1.1.2	15.1	17.2	10.1	11.1	9.4	9.5
6.7	3.2	9.6	13.1	1.8	1.2	14.1	18.3	1.2	1.3			9.2	9.3	11.2	12.1
3.1	2.3	11.2	14.7	1.1		17.2						7.1	7.2	14.2	14.4
2.2	1.1.3	14.3	17.2									3.1	3.2	14.7	14.8
1.1.2	1.8	15.1	20.2									2.1	2.2	12.2	15.1
1.7	1.2	18.3										1.1.1	1.1.2	18.2	17.3
1.1												1.6	1.7	20.3	18.3
												1.5	1.2		20.4
												1.1			

CODES OF COMPETENCY RISK (R2) FACTORS															
Technical and Creativity (R2A)				Management (R2B)				Comprehension (R2C)				Social / Evironment			
R2A1	**R2A2**	**R3A3**	**R2A4**	**R2B1**	**R2B2**	**R2B3**	**R2B4**	**R2C1**	**R2C2**	**R2C3**	**R2C4**	**R2D1**	**R2D2**	**R2D3**	**R2D4**
20.6	20.7	1.4	1.7	18.2	15.3	1.3	1.4	18.3	18.4	1.4	1.5	20.1	20.3	1.3	1.5
18.4	20.2	1.1.1	1.1.2	17.3	18.3	1.8	1.9	17.3	17.4	1.8	1.9	17.4	18.1	1.8	1.9
17.4	18.1	2.1	2.2	14.1	15.1	1.1.3	1.1.4	14.7	14.2	1.1.3	1.1.4	14.9	15.1	1.1.3	1.1.4
15.1	16.1	5.1	3.2	14.5	14.7	2.3	2.4	13.1	14.1	2.3	2.4	14.2	14.5	2.4	4.1
14.8	14.9	7.2	7.3	13.1	14.2	7.1	7.3	9.7	10.1	4.1	7.2	14.3	10.1	4.1	9.5
14.1	14.3	9.2	4.3	9.6	14.3	9.4	9.5	9.3	9.2	8.4	9.2	9.6	9.3	9.4	13.1
10.1	11.1	9.6	9.7	9.2	4.7	10.1	11.1	7.3	8.3	9.5	9.6	9.2	3.2	11.2	14.7
9.4	7.5	11.2	13.1	3.1	4.3	14.3	14.4	3.1	1.7	11.1	11.2	2.1	2.2	14.6	17.2
8.3	8.4	14.5	14.6	2.1	3.2	14.8	14.9	2.1	2.2	14.5	14.3	1.1.1	14.2	16.1	15.3
4.1	5.1	14.1.1	14.2	1.1.1	2.2	16.1	17.1	1.1.1	1.1.2	15.1	17.2	1.6	1.7	18.2	
2.2	2.4	12.2	17.3	1.6	1.1.2	12.4	18.1	1.6	1.7	18.1	18.2	1.1	1.2		
14.3	1.1.4	18.2	18.2	1.5	1.7	20.1	20.3	1.1	1.2						
1.8	1.9	20.4	20.5	1.1	1.2										
1.2	1.5														

CODES OF RETUR ON INVESTMENT RISKS (R3) FACTORS															
Financial Risks				**Economic Risk**				**Cultural Risks**				**Political ad Legal Risks**			
R3A1	**R3A2**	**R3A3**	**R3A4**	**R3B1**	**R3B2**	**R3B3**	**R3B4**	**R3C1**	**R3C2**	**R3C3**	**R3C4**	**R3D1**	**R3D2**	**R3D3**	**R3D4**
20.4	20.5	1.4	1.3	18.2	18.3	1.3	1.7	18.1	14.2	1.3	1.5	18.3	20.7	1.3	1.3
18.3	18.4	1.8	1.9	17.2	17.3	1.1.1	1.1.2	14.6	10.1	1.8	1.9	14.7	14.8	1.9	1.1.1
17.3	12.4	1.1.3	19.4	14.9	15.1	2.1	3.2	3.2	2.2	1.1.3	1.1.4	11.1	12.1	1.1.4	2.2
15.1	16.1	2.3	2.4	14.3	14.4	3.2	4.1	2.1	1.1.2	2.3	2.4	1.7	9.2	3.1	3.2
14.7	14.7	4.1	3.1	9.2	9.3	9.4	9.5	1.1.1	1.7	11.1	14.3	2.3	5.1	7.1	10.1
14.3	14.4	7.3	8.2	2.3	2.4	14.6	14.7	1.6	1.2	14.8	14.9	1.1.2	2.4	8.4	14.6
11.1	12.1	9.3	9.4	1.1.3	1.1.4	16.1	18.1	1.1				1.7	1.1.3	14.4	15.1
9.5	9.6	8.7	10.1	1.8	1.9	17.4	20.6					1.1	1.8	14.9	18.1
8.4	9.2	13.1	14.1	1.2	1.3	18.4							1.2		
6.1	7.2	14.5	14.6												
4.1	3.2	14.1.1	1.1.2												
2.1	2.2	17.1	17.2												
1.1.1	1.1.2	18.1	18.2												
1.6	1.7	20.1	20.2												
1.2	1.3	20.6	20.7												

PART III

RISK FACTORS CODES AND FREQUENCIES

R1

R1A

R1A1		R1A2	
20.6	*1*	18.2	*2*
17.3	*2*	14.1.1	*3*
14.9	*3*	14.2	*2*
14.1	*3*	11.1	*4*
10.1	*2*	9.5	*3*
9.4	*2*	8.4	*3*
9.1	*4*	7.1	*2*
8.3	*3*	3.2	*4*
6.7	*1*	2.3	*3*
3.1	*3*	1.1.3	*4*
2.2	*4*	1.8	*4*
1.1.2	*4*	1.2	*4*
1.7	*3*		
1.1	*3*		

R1A4		R1A3	
1.6	*2*	1.5	*2*
1.1.1	*4*	1.9	*4*
2.1	*2*	2.4	*3*
5.1	*3*	4.1	*4*
7.3	*2*	7.2	*4*
9.3	*2*	9.2	*1*
9.7	*1*	9.6	*2*
13.1	*2*	11.2	*2*
14.7	*4*	14.3	*3*
17.2	*2*	15.1	*3*
20.2	*1*	18.3	*3*

R1B

R1B1		R1B2	
15.1	*3*	14.7	*4*
10.4	*1*	11.1	*4*
14.5	*2*	8.4	*3*
9.5	*3*	6.1	*1*
8.3	*3*	2.4	*3*
8.2	*1*	1.1.4	*4*
5.1	*3*	1.9	*4*
2.3	*3*	1.2	*4*
1.1.3	*4*		
1.8	*4*		

R1B4		R1B3	
1.7	*3*	1.4	*1*
1.1.2	*4*	1.1.1	*4*
2.2	*4*	2.1	*4*
4.1	*4*	3.1	*1*
7.3	*2*	3.2	*4*
9.1	*4*	7.2	*4*
14.4	*3*	9.3	*1*
18.3	*3*	14.1	*3*
15.1	*3*	17.2	*2*
19.1	*1*		

R1C

R1C1		R1C2	
20.4	*2*	20.7	*1*
14.1.1	*3*	14.1.2	*1*
14.4	*3*	14.7	*4*
9.1	*4*	9.6	*2*
7.2	*4*	4.1	*4*
3.2	*3*	2.2	*4*
2.1	*4*	1.1.2	*4*
1.1.1	*4*	1.3	*2*
1.2	*4*		

R1C4		R1C3	
1.9	*4*	1.8	*4*
1.1.4	*1*	1.1.3	*4*
3.1	*3*	2.4	*3*
7.4	*1*	5.1	*3*
11.2	*2*	11.1	*4*
14.9	*3*	14.8	*2*
17.2	*2*	15.1	*2*
		14.9	*1*

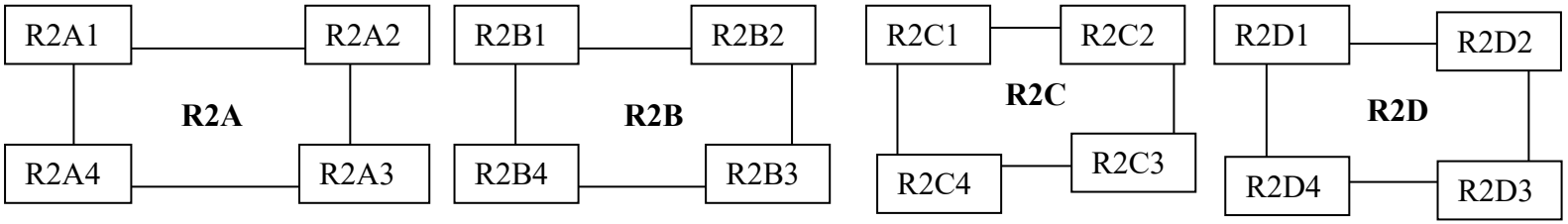
R1D

R1D1		R1D2	
18.4	*1*	20.1	*1*
17.4	*1*	18.1	*1*
16.1	*1*	17.1	*1*
14.9	*3*	14.1.1	*3*
14.5	*2*	14.6	*1*
13.1	*2*	14.1	*3*
10.1	*2*	11.1	*4*
9.2	*1*	9.3	*2*
9.1	*4*	7.2	*4*
7.1	*2*	3.2	*4*
3.1	*3*	2.2	*4*
2.1	*4*	1.1.2	*4*
1.1.1	*4*	1.7	*3*
1.6	*2*	1.2	*4*
1.5	*2*		
1.1	*3*		

R1D4		R1D3	
1.4	*1*	1.3	*2*
1.9	*4*	1.8	*4*
1.1.4	*4*	1.1.	*4*
2.4	*1*	2.3	*3*
5.1	*3*	4.1	*4*
8.4	*3*	8.3	*3*
9.5	*3*	9.4	*2*
12.1	*1*	11.2	*2*
14.4	*3*	14.2	*2*
14.8	*2*	14.7	*4*
15.1	*2*	12.2	*1*
17.3	*2*	18.2	*2*
18.3	*3*	20.3	
20.4	*2*		

RISK FACTORS CODES AND FREQUENCIES

R2



20.6	1
18.4	1
17.4	2
15.1	3
14.8	2
14.1	3
10.1	4
9.4	3
8.3	2
8.1	2
4.1	3
2.2	4
1.1.3	4
1.8	3
1.2	4

20.7	1
20.2	1
18.1	3
16.1	3
14.9	3
14.3	4
11.1	4
9.1	2
7.5	1
8.4	1
5.1	2
2.4	3
1.1.4	3
1.9	4
1.5	4

18.2	4
17.3	3
14.1	3
14.5	4
13.1	3
9.6	4
9.2	4
3.1	2
8.1	2
2.1	4
1.1.1	4
1.6	3
1.5	4
1.1	3

8.2	1
15.3	1
18.3	2
15.1	3
14.7	3
14.2	2
14.3	4
4.7	1
4.3	2
3.2	3
2.2	4
1.1.2	3
1.7	4
1.2	4

18.3	2
17.3	3
14.7	3
13.1	3
9.7	2
9.3	2
7.3	3
3.1	2
2.1	4
1.1.1	4
1.6	3
1.1	3

18.4	1
17.4	2
14.2	3
14.1	3
10.1	4
9.2	4
8.3	2
2.2	4
1.1.2	3
1.7	4
1.2	4

20.1	1
17.4	2
14.9	3
14.2	3
14.3	4
9.6	4
9.2	4
2.1	4
1.1.1	4
1.6	3
1.1	3

20.3	2
18.1	3
15.1	3
14.5	4
10.1	4
9.3	2
9.1	2
3.2	3
2.2	4
14.2	3
1.7	4
1.2	4

1.7	4
1.1.2	3
2.3	1
3.2	3
7.3	3
4.3	2
9.7	2
13.1	3
14.6	2
14.2	3
17.3	3
18.2	4
20.5	1

1.4	3
1.1.1	1
2.1	4
5.1	2
7.2	2
9.2	4
9.6	4
11.2	2
12.4	2
14.5	4
14.1.1	1
12.2	1
18.2	4
20.4	1

1.4	3
1.9	4
1.1.4	3
2.4	3
7.3	3
9.5	2
11.1	1
14.4	1
14.9	3
17.1	1
18.1	3
20.3	2
19.1	3

1.3	2
1.8	3
1.1.3	4
2.3	2
7.1	1
9.4	3
10.1	4
14.3	4
14.8	2
16.1	3
12.4	2
20.1	

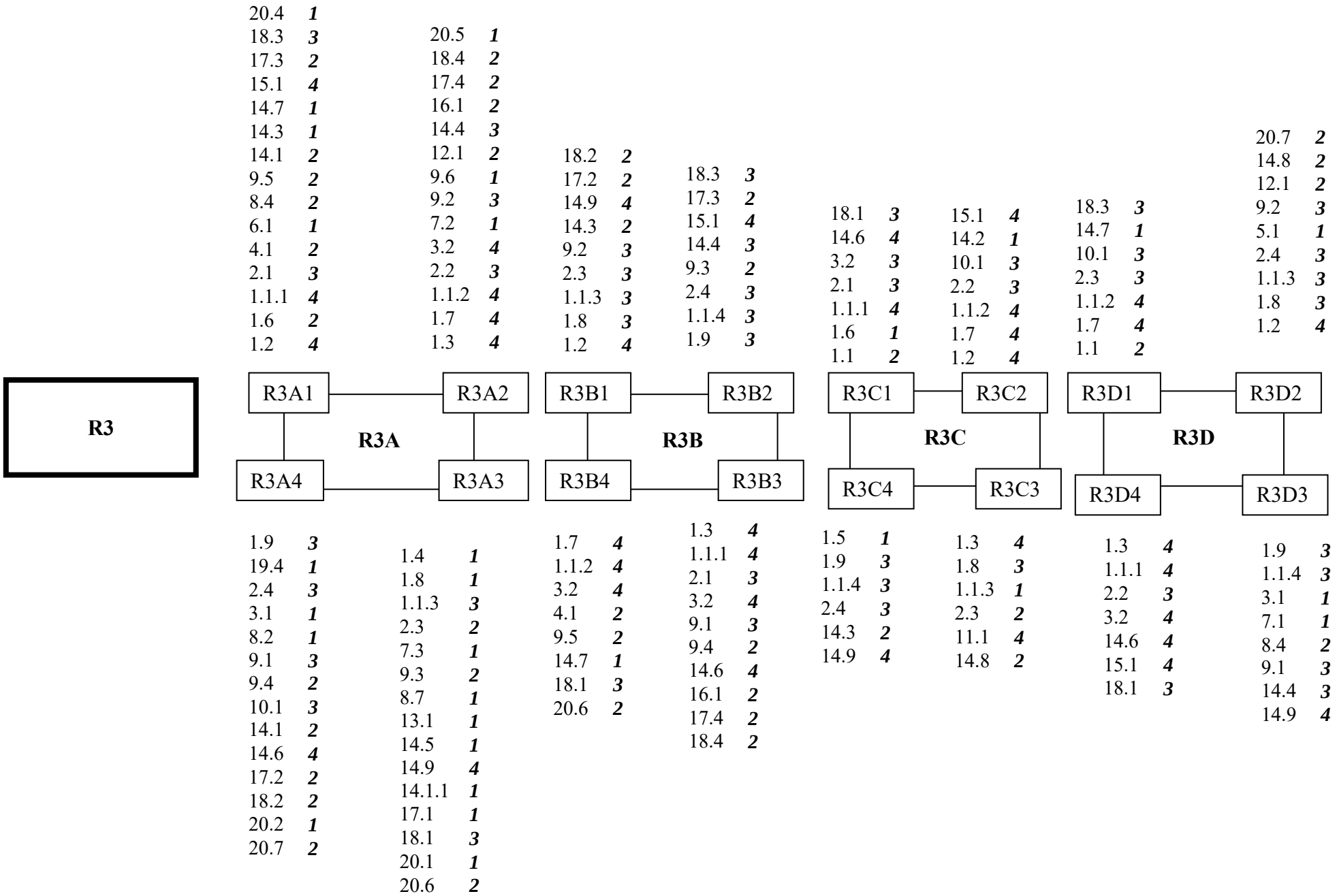
1.5	4
1.9	4
1.1.4	3
2.4	3
7.2	2
9.2	1
9.6	4
11.2	2
14.3	4
17.2	1
18.2	4
19.1	3

1.4	3
1.8	3
1.1.3	4
2.3	2
4.1	3
8.4	1
9.5	1
11.1	2
12.2	1
14.5	4
15.1	1
18.1	1

1.5	4
1.9	4
1.1.4	1
4.1	3
9.5	2
13.1	3
14.7	3
17.2	1
15.3	1

1.3	2
1.8	3
1.1.3	4
2.4	1
4.2	1
9.4	3
11.2	2
12.3	1
14.6	2
16.1	3
18.2	4
14.9	1
19.1	3

RISK FACTORS CODES AND FREQUENCIES



PART IV

SUMMARY OF RISK FACTORS FREQUENCIES

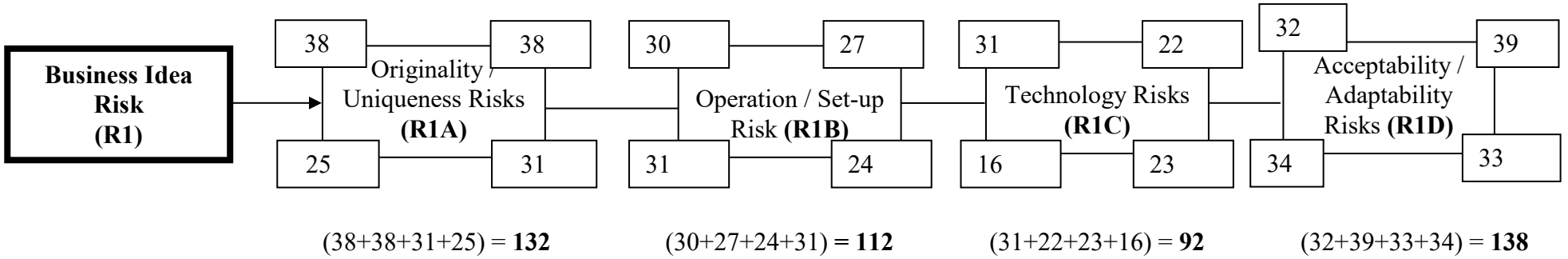
	FREQUENCIES OF BUSINESS IDEA RISK (R1) FACTORS CODES															
	Originality / Uniqueness Risk (R1A)				**Technology Risks (R1B)**				**Operation / Set-Up Risk (R1C)**				**Acceptability / Adaptability R1D**			
	R1A1	**R1A2**	**R1A3**	**R1A4**	**R1B1**	**R1B2**	**R1B3**	**R1B4**	**R1C1**	**R1C2**	**R1C3**	**R1C4**	**R1D1**	**R1D2**	**R1D3**	**R1D4**
	1	2	2	2	3	4	1	3	2	1	4	4	1	1	2	1
	2	3	4	4	1	4	4	4	3	1	4	1	1	1	4	4
	3	2	3	2	2	3	4	4	3	4	3	3	1	1	4	4
	3	4	4	3	3	1	1	4	4	2	3	1	3	3	3	1
	2	3	4	2	3	3	4	2	4	4	4	2	2	1	4	3
	2	3	1	2	1	4	4	4	3	4	2	3	2	3	3	3
	4	2	2	1	3	4	1	3	4	4	2	2	2	4	2	3
	3	4	2	2	3	4	3	3	4	2	1		1	2	2	1
	1	3	3	4	4		2	3	4				4	4	2	3
	3	4	3	2	4			1					2	4	4	2
	4	4	3	1	3								3	4	1	2
	4	4											4	4	2	2
	3												4	3		3
	3												2	4		2
													2			
													3			
Σfr	**38**	**38**	**31**	**25**	**30**	**27**	**24**	**31**	**31**	**22**	**23**	**16**	**32**	**39**	**33**	**34**

	FREQUENCIES OF OF COMPETENCY RISK (R2) FACTORS CODES															
	Technical and Creativity (R2A)				Management (R2B)				Comprehension (R2C)				Social / Evironment			
	R2A1	**R2A2**	**R3A3**	**R2A4**	**R2B1**	**R2B2**	**R2B3**	**R2B4**	**R2C1**	**R2C2**	**R2C3**	**R2C4**	**R2D1**	**R2D2**	**R2D3**	**R2D4**
	1	1	3	4	4	1	2	3	2	1	3	4	1	2	2	4
	1	1	1	3	3	1	3	4	3	2	3	4	2	3	3	4
	2	3	4	1	3	2	4	3	3	3	4	3	3	3	4	1
	3	3	2	3	4	3	2	3	3	3	2	3	3	4	1	3
	2	3	2	3	3	3	1	3	2	4	3	2	4	4	1	2
	3	4	4	2	4	2	3	2	2	4	1	1	4	2	3	3
	4	4	4	2	4	4	4	1	3	2	1	4	4	2	2	3
	3	2	2	3	2	1	4	1	2	4	2	2	4	3	1	1
	2	1	2	2	2	2	2	3	4	3	1	4	4	4	2	1
	2	1	4	3	4	3	3	1	4	4	4	1	3	3	3	
	3	2	1	3	4	4	2	3	3	4	1	4	3	4	4	
	4	3	1	4	3	3		2	3		1	3		4	1	
	4	3	4	1	4	4		3							3	
	3	4	1		3	4										
	4	4														
Σfr	**41**	**39**	**35**	**34**	**47**	**37**	**30**	**32**	**34**	**34**	**26**	**35**	**35**	**38**	**30**	**22**

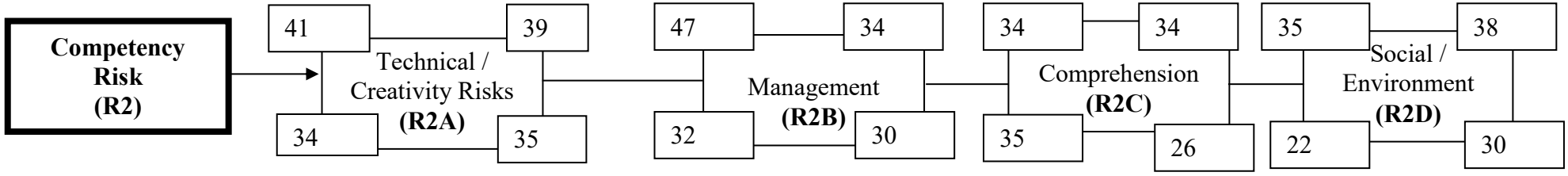
	FREQUENCIES OF RETUR ON INVESTMENT RISKS (R3) FACTORS CODES															
	Financial Risks				Economic Risk				Cultural Risks				Political ad Legal Risks			
	R3A1	**R3A2**	**R3A3**	**R3A4**	**R3B1**	**R3B2**	**R3B3**	**R3B4**	**R3C1**	**R3C2**	**R3C3**	**R3C4**	**R3D1**	**R3D2**	**R3D3**	**R3D4**
	1	1	1	3	2	3	4	4	3	4	4	1	3	2	3	4
	3	2	1	1	2	2	4	4	4	1	3	3	1	2	3	4
	2	2	3	3	4	4	3	4	3	3	1	3	3	2	1	3
	4	2	2	1	2	3	4	2	3	3	2	3	3	3	1	4
	1	3	1	1	3	2	3	2	4	4	4	2	4	1	2	4
	1	2	2	3	3	3	2	1	1	4	2	4	4	3	3	4
	2	1	1	2	3	3	4	3	2	4			2	3	3	3
	2	3	1	3	3	3	2	2						3	4	
	2	1	1	2	4		2							4		
	1	4	4	4			2									
	2	3	1	2												
	3	4	1	2												
	4	4	3	1												
	2	4	1	2												
	4		2													
Σfr	**34**	**36**	**25**	**30**	**26**	**23**	**30**	**22**	**20**	**23**	**16**	**16**	**20**	**23**	**20**	**26**

APPENDIX C

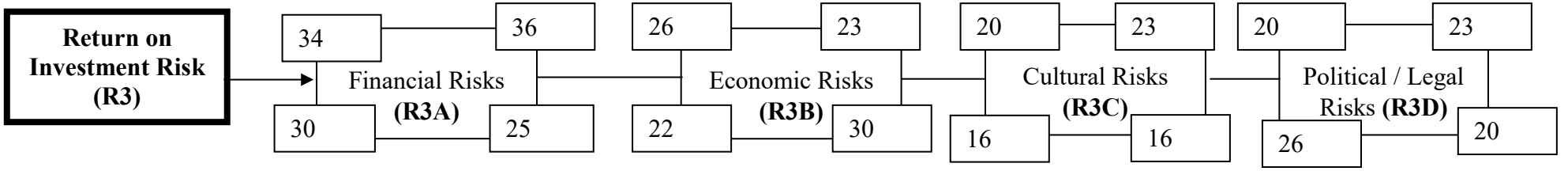
Sumaltion of Risk Factors Frequency Points



(38+38+31+25) = **132** (30+27+24+31) **= 112** (31+22+23+16) = **92** (32+39+33+34) = **138**



(41+39+35+34) = **149** (47+34+30+32) = **143** (34+34+35+30) = **133** (35+38+30+22) = **125**

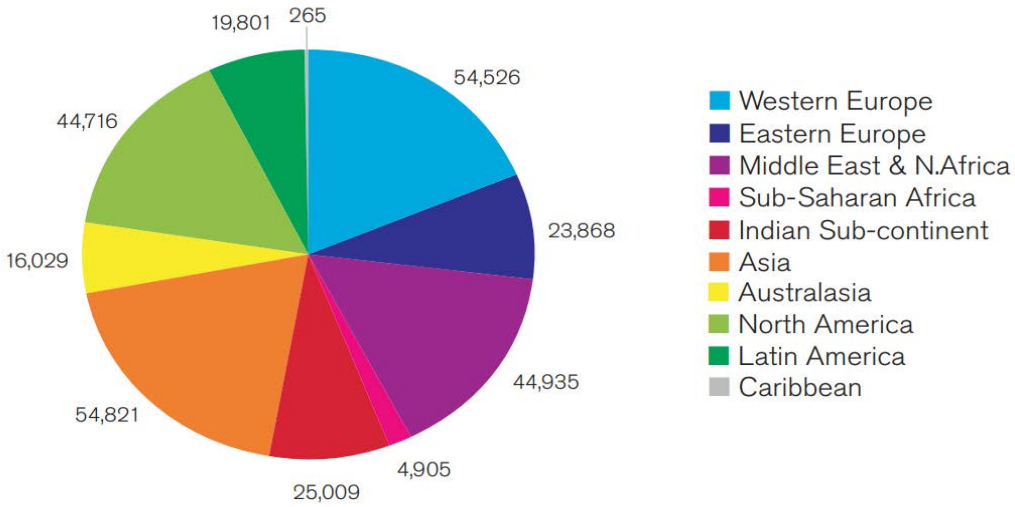


(34+36+25+30) = **125** (26+23+30+22) = **101** (20+23+16+16) = **75** (20+23+20+26) = **89**

APPENDIX D

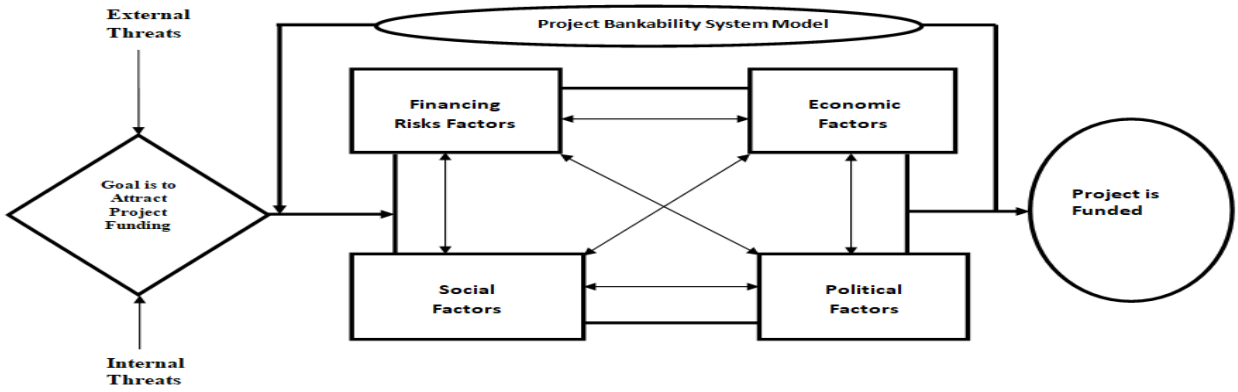
Figures

1. **Figure D.1:** Global Spending on Project Financing by Region in 2016



Sources: International Financial Review 2017

2. **Figure D.2:** A system model of key factors that currently determines project bankability in developing economies.

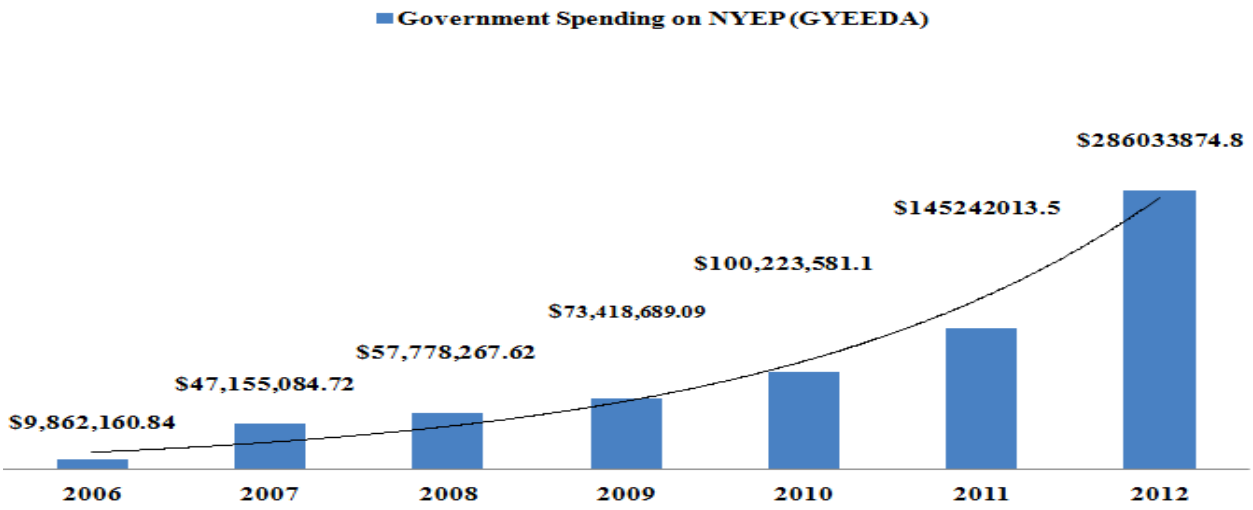


Source: This study

3. **Figure D.3:** Ghanaian Unemployed Youth Demonstrating Against the Government for Lack of Jobs

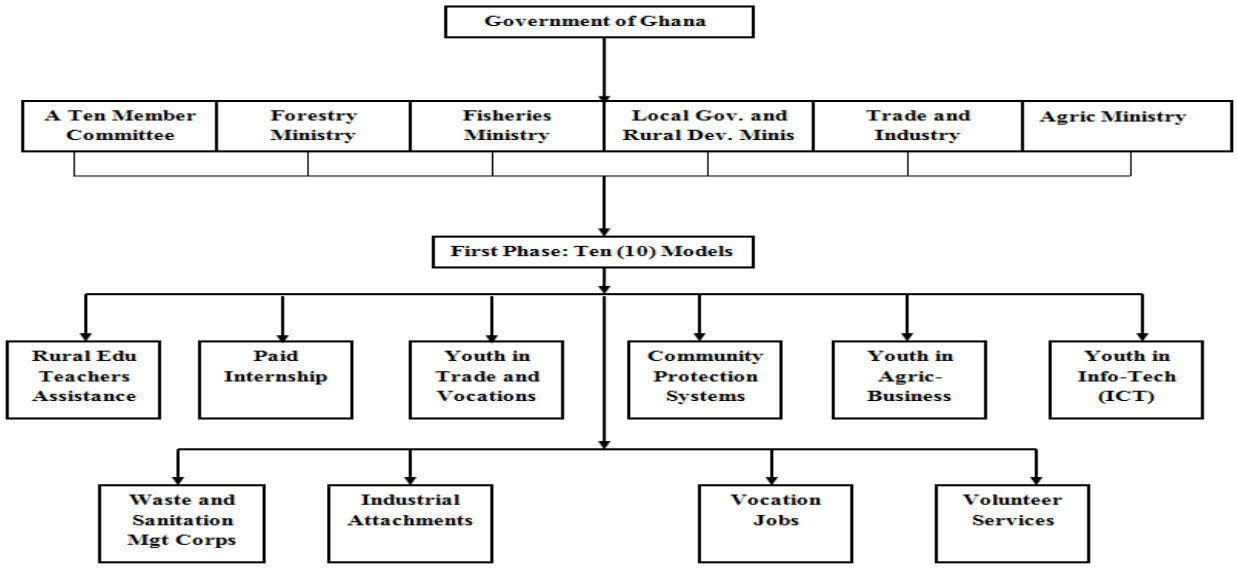
Source: National library

4. **Figure D.4**: The 2006 National Youth Employment Program models.



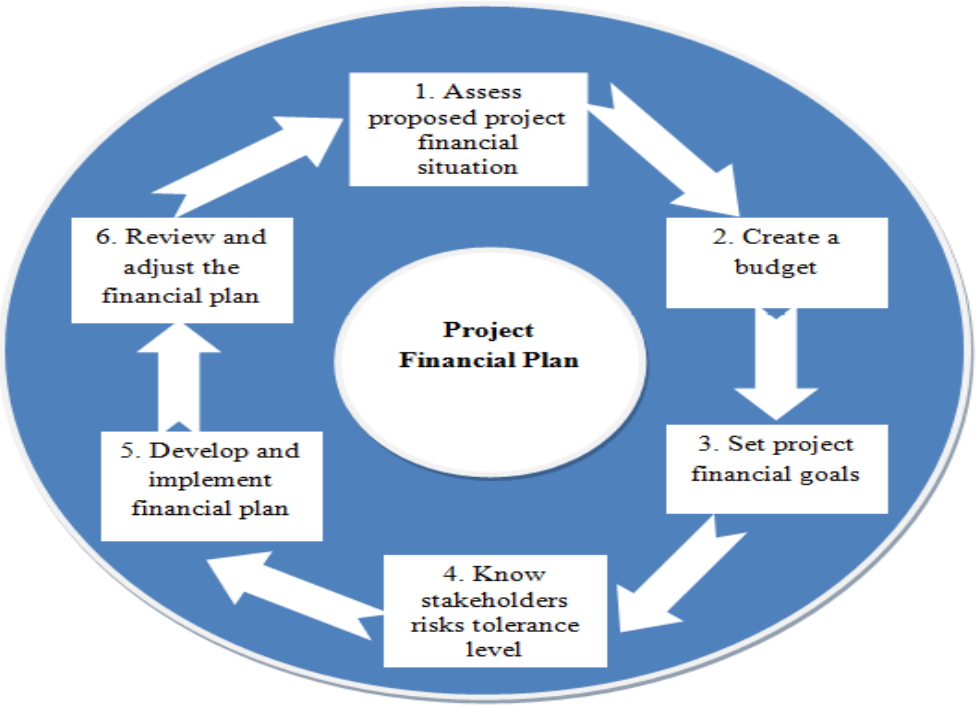
Sources: This Research

5. **Figure D.5: Government Spending on Ghana Youth Employability and Entrepreneurship Development Agency Programs**



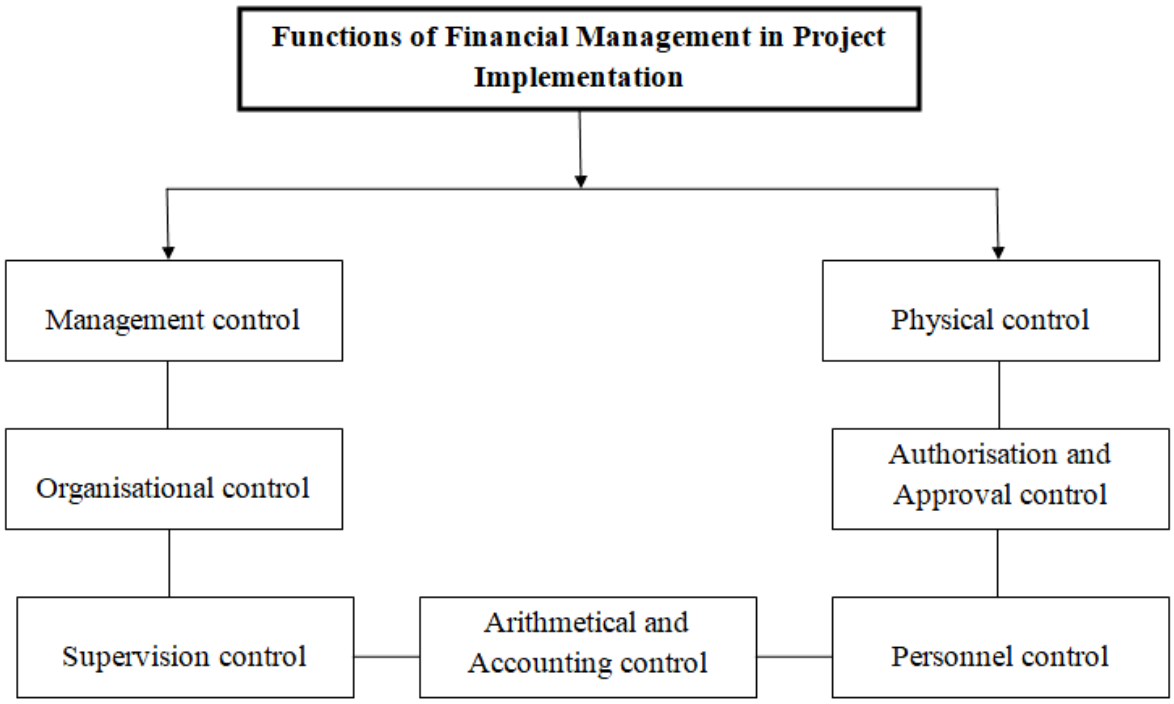
Source: The research data.

6. **Figure D.6 Project Financial Planning**



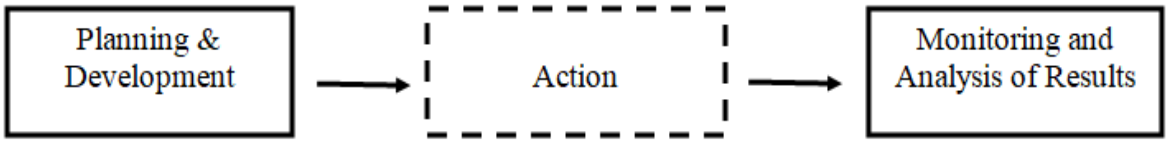
Source: This study

7. **Figure D.7: Functions of Financial Management in Project Development and Implementation**



Source: This study

8. **Figure D.8a: Simple Management Controls System.**

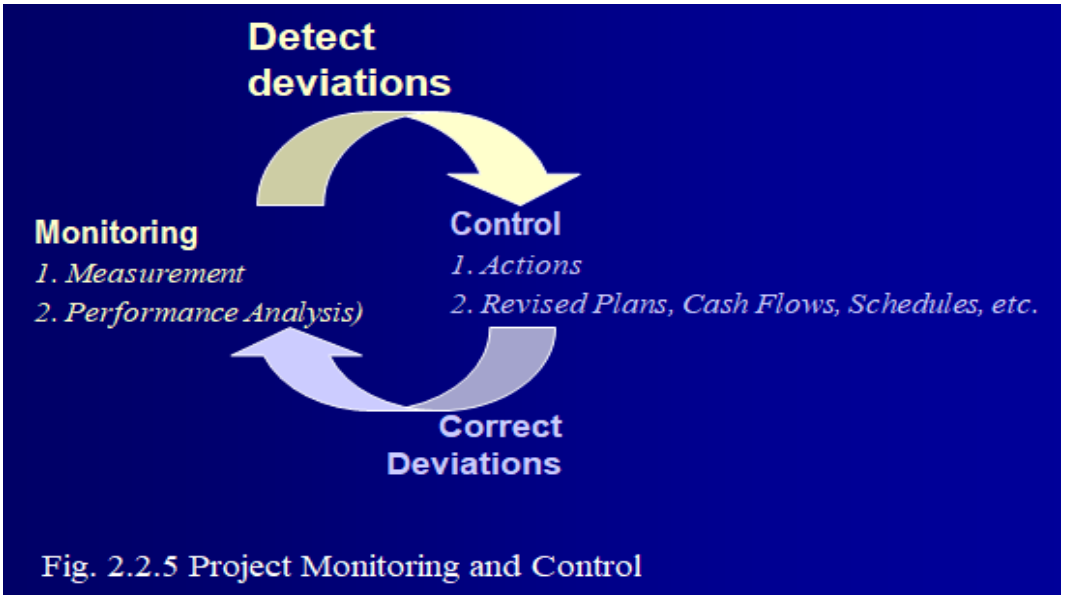


Adopted from: Fundamentals of Management Control – Françoise Giraud. Pearson Education France)

9. **Figure D.8b**: The Four Basic Steps Involved in Organizational Control

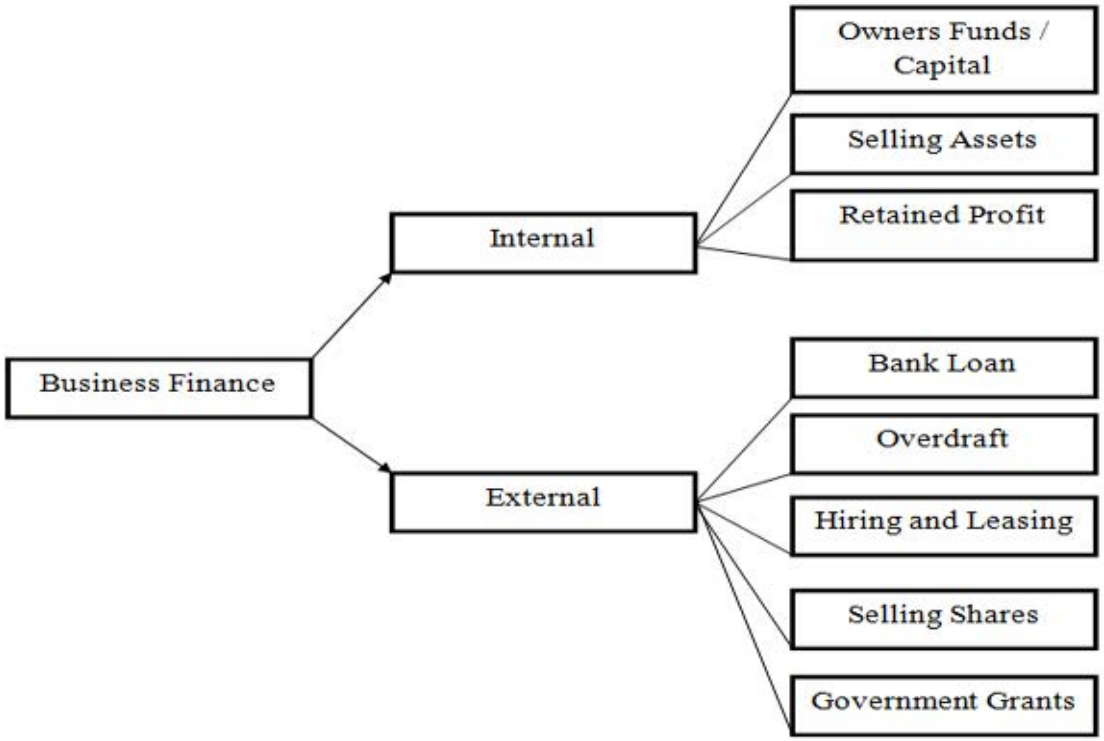
Source: Mason C., Talya B., and Berrin E., (2010)

10. **Figure D.8c:** Project Monitoring and Control Cycle

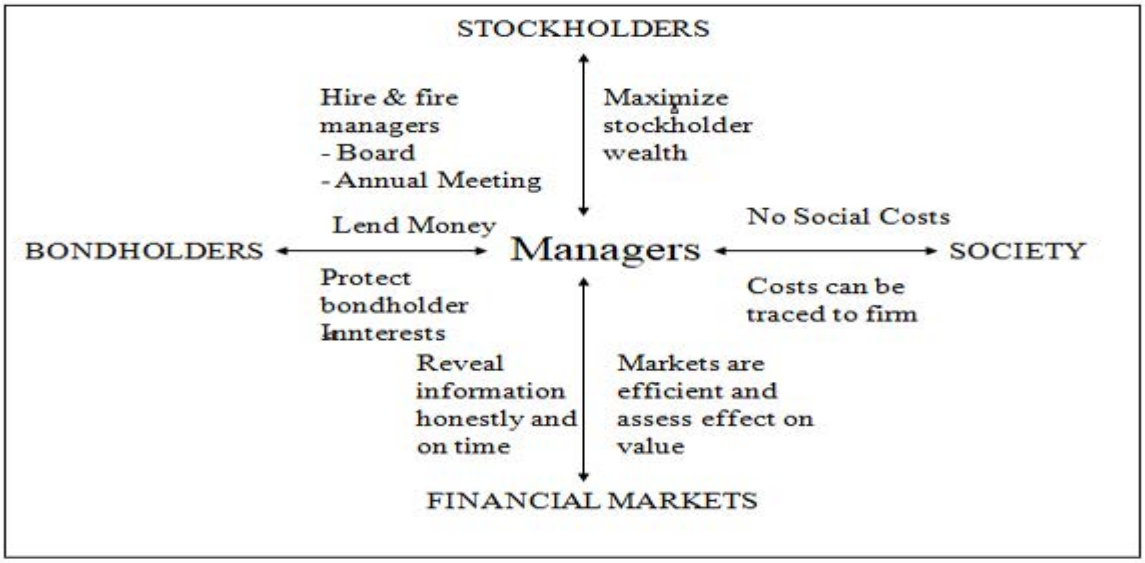


Sources: Samuel Labi and Fred Moavenzadeh, (2007).

11. Figure D.9: Model for Acquiring Sufficient and Suitable Funding for Business-projects

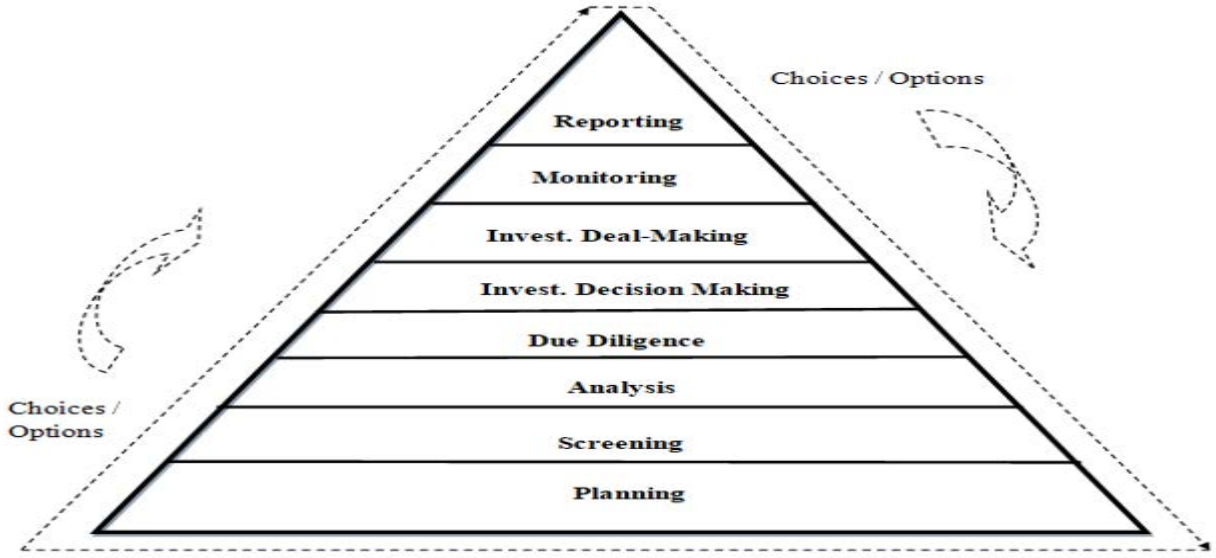


12. Figure D.10: Functional Objective that Maximizes Firms Value



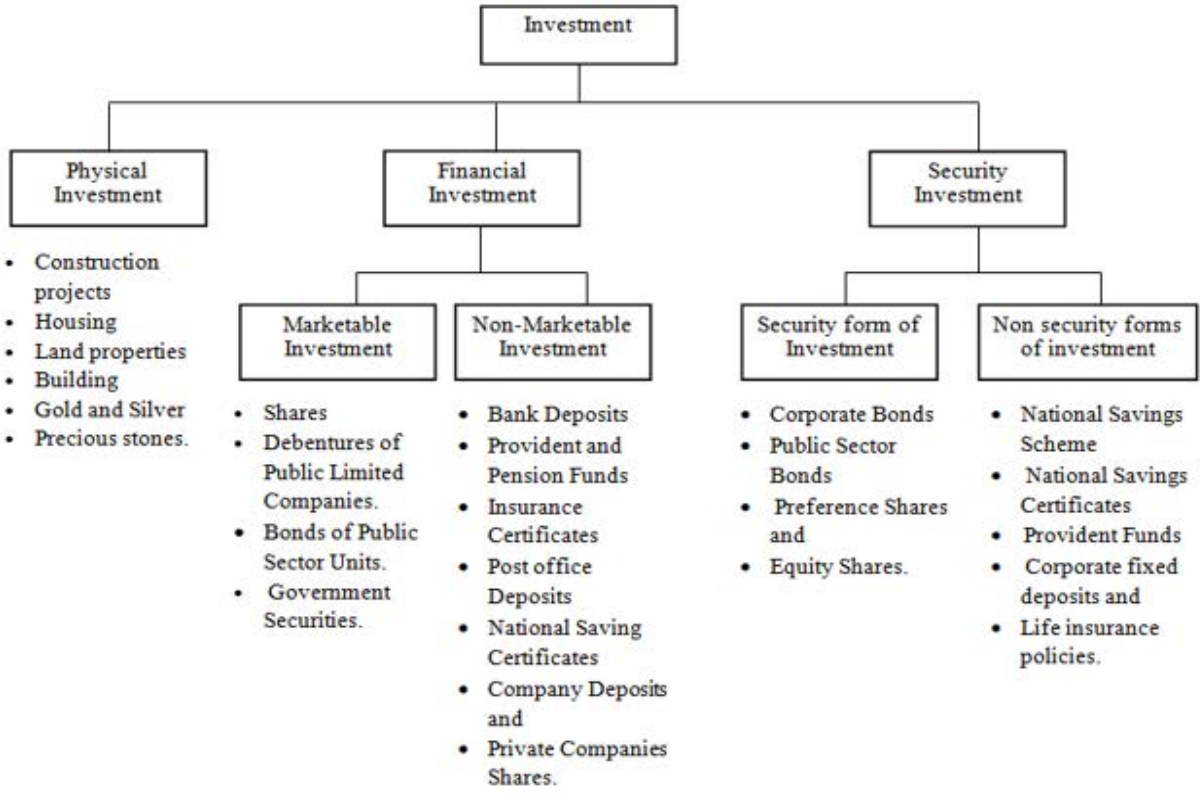
Sources: Adapted from (Aswath D. 2011. Classical Objective function

13. Figure D.11: The Pyramidal Model of Business-project Financing Decision Process

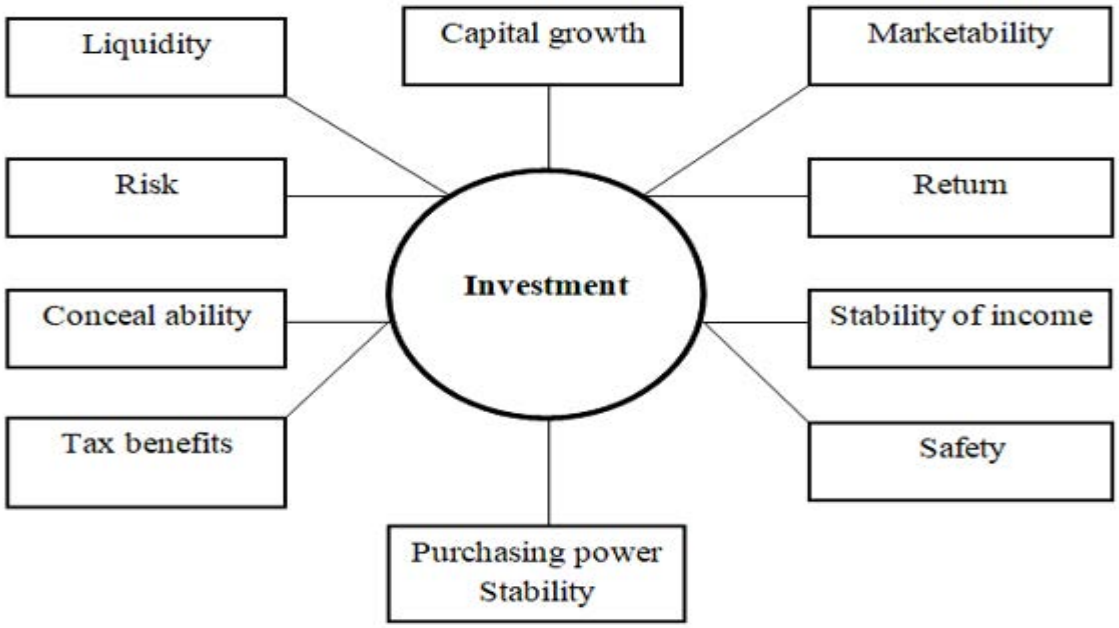


Sources: This study

14. **Figure D.12: The Three Forms of Business-project Investment which SMEs Entrepreneurs Can Venture**

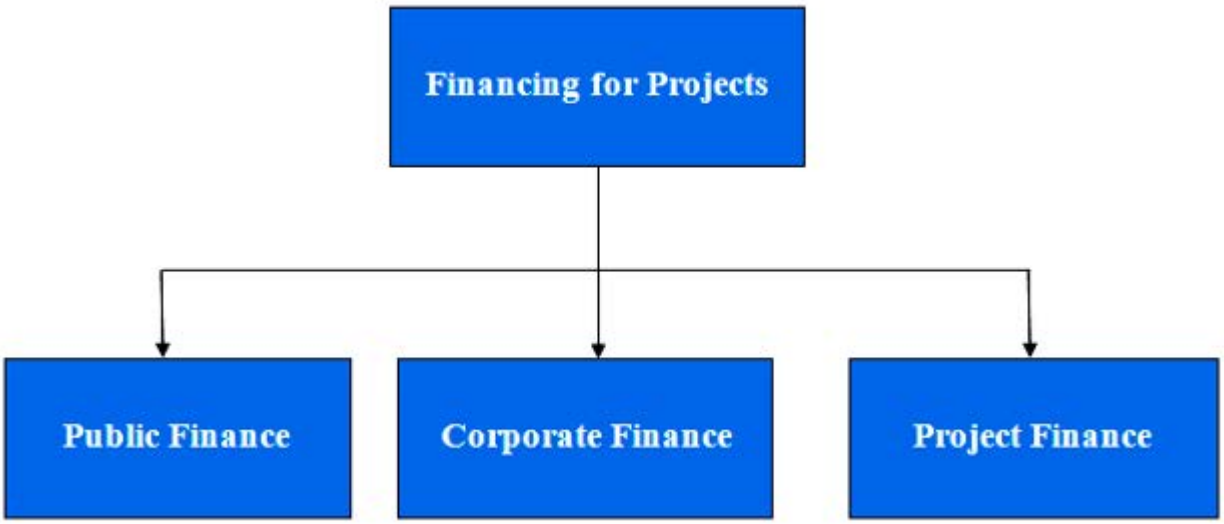


15. **Figure D.13: Investment characteristics which this study believes investors must pay critical attention to before they venture into any form of business project.**

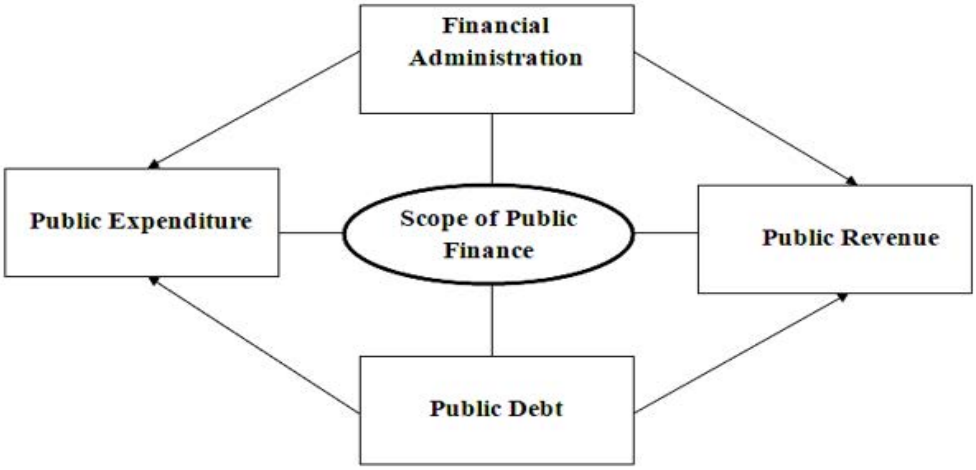


Sources: This study

16. **Figure D.14 Finance types available for projects implementation**

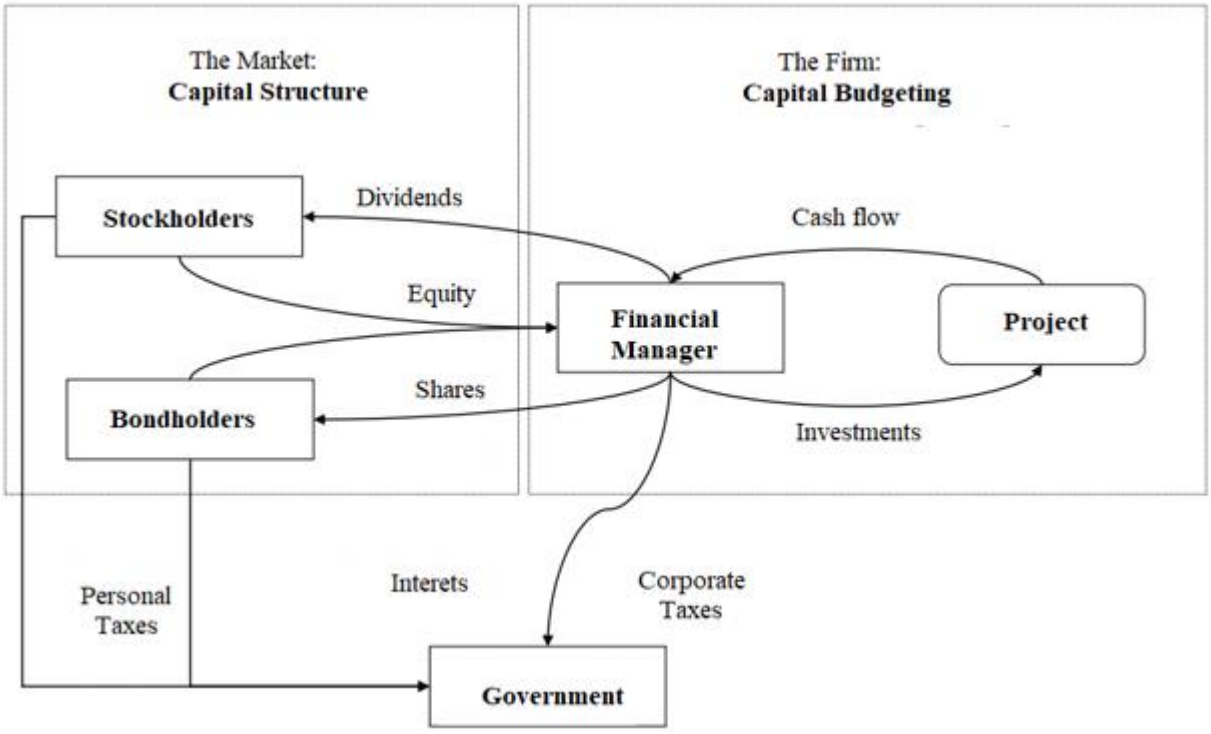


17. Figure D.15: The scope of public finance

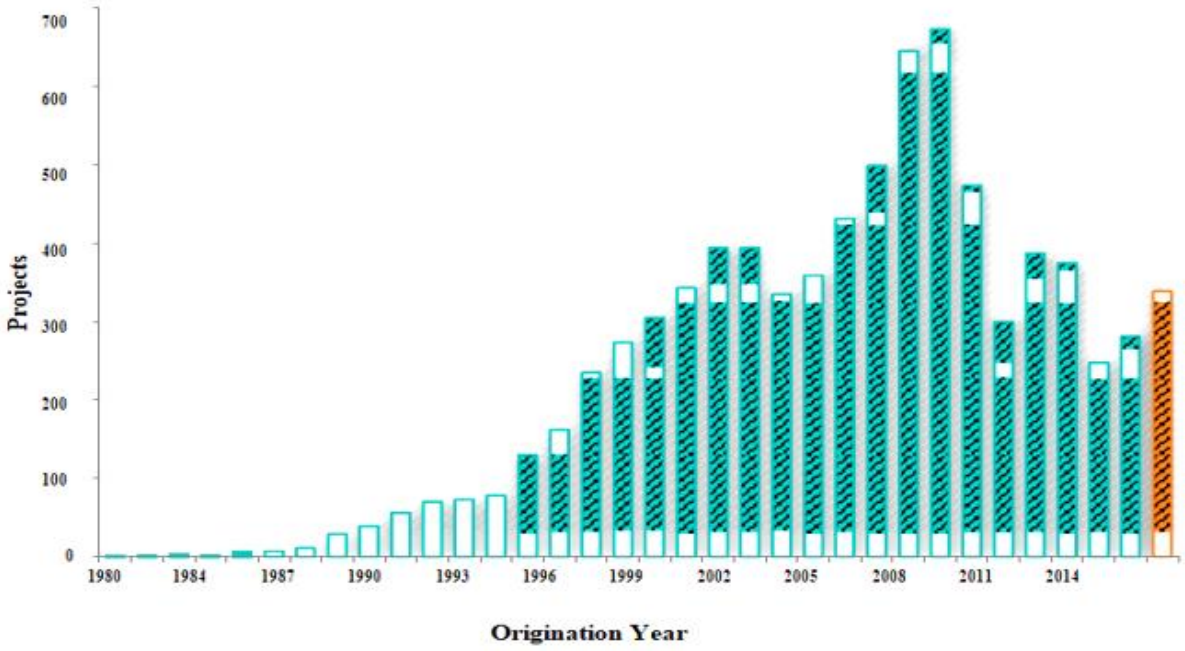


Source: this study

18. Figure D.16: Structure of Corporate Finance

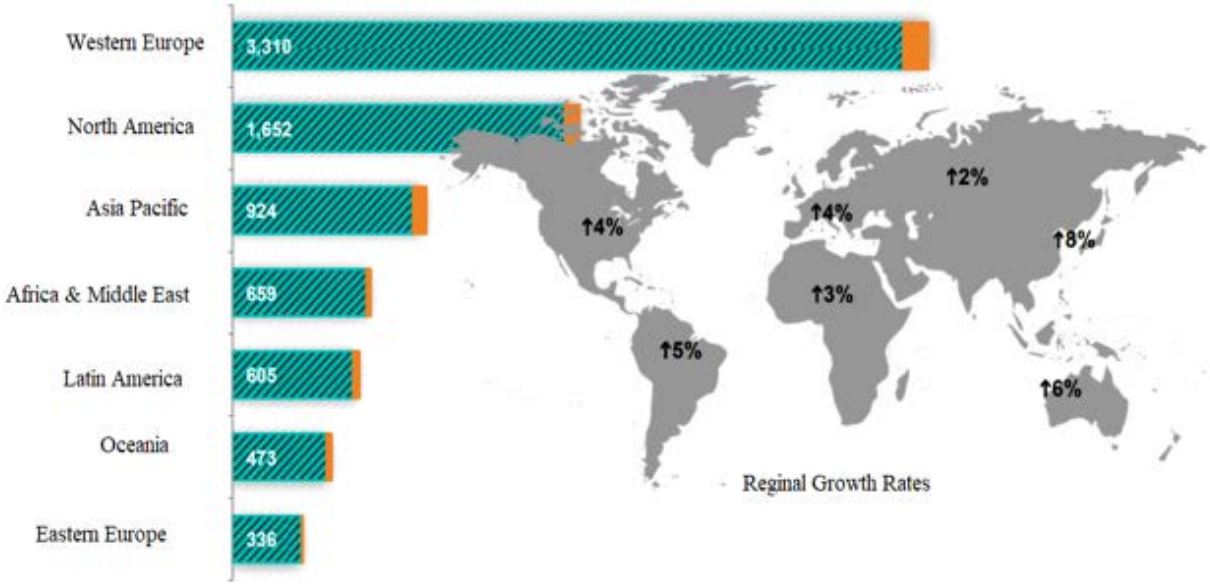


19. Figure D.17a Regional and Industry Cohort Projects Originated Globally From 1980 to 2014

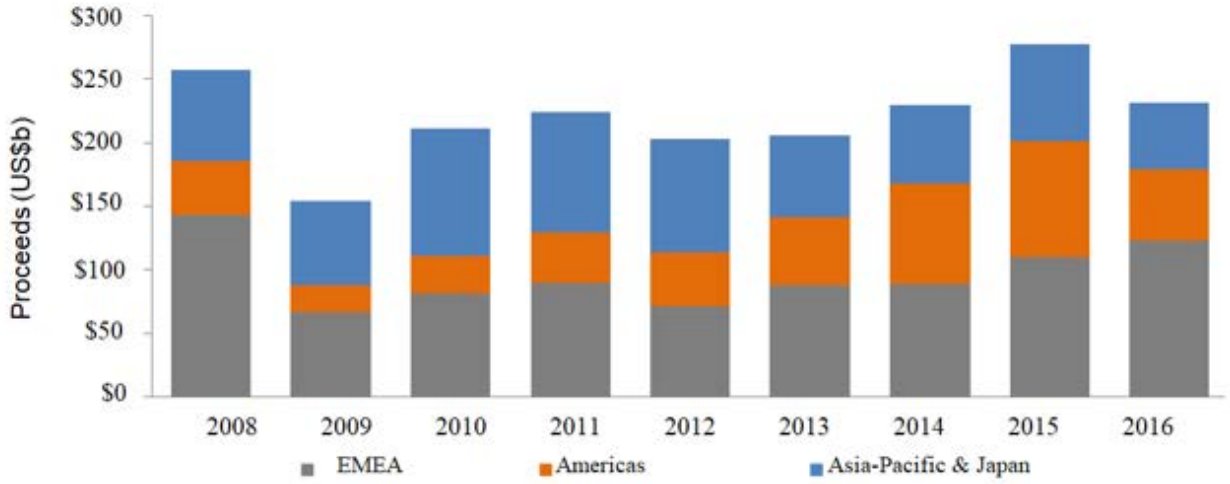


Sources: Annual Global Project Finance Default and Recovery Study, December 2015

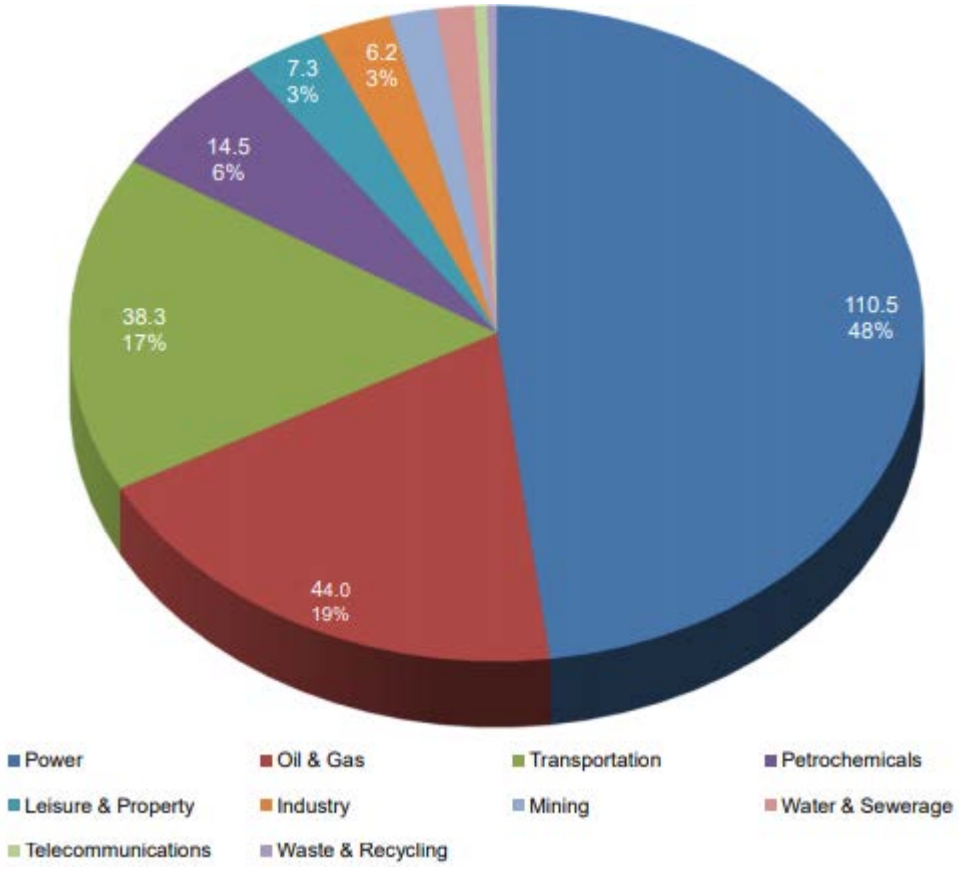
20. Figure D.17b: Project Finance Distribution by Region from 1980 – 2014



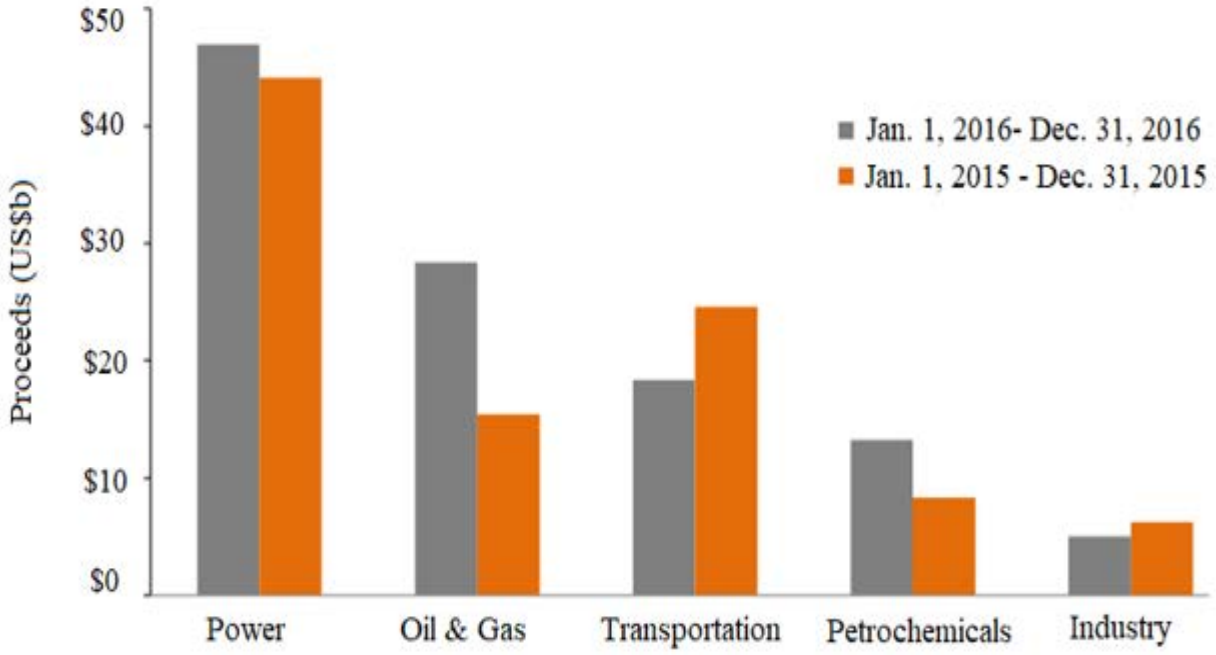
21. Figure D.18a Regional Project Finance Breakdown



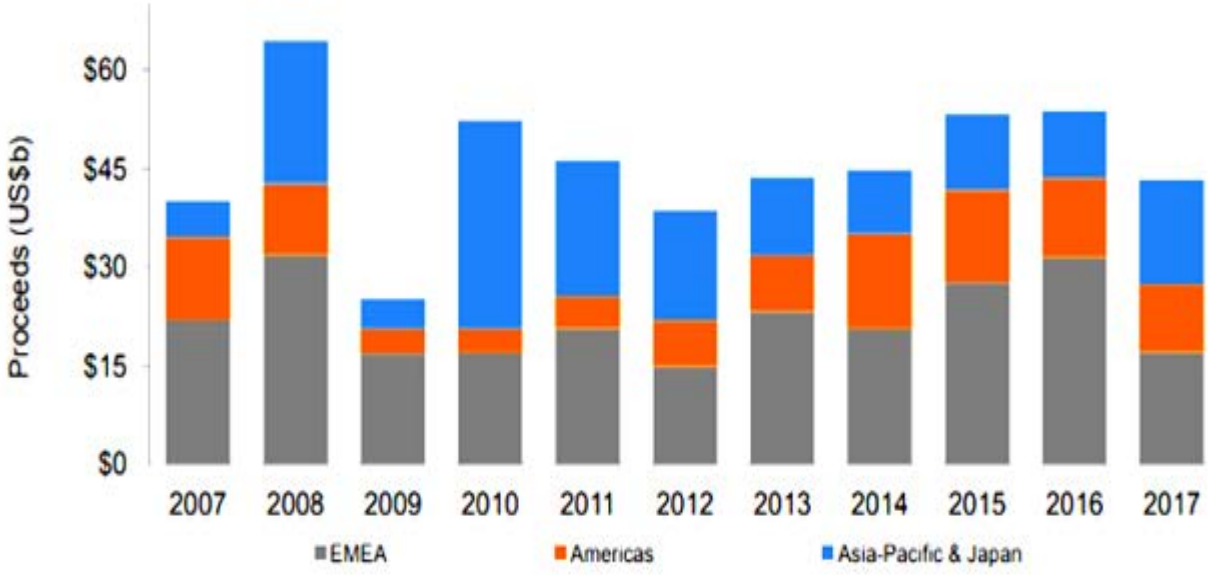
22. Figure D.18b regional project finance breakdown pie chart



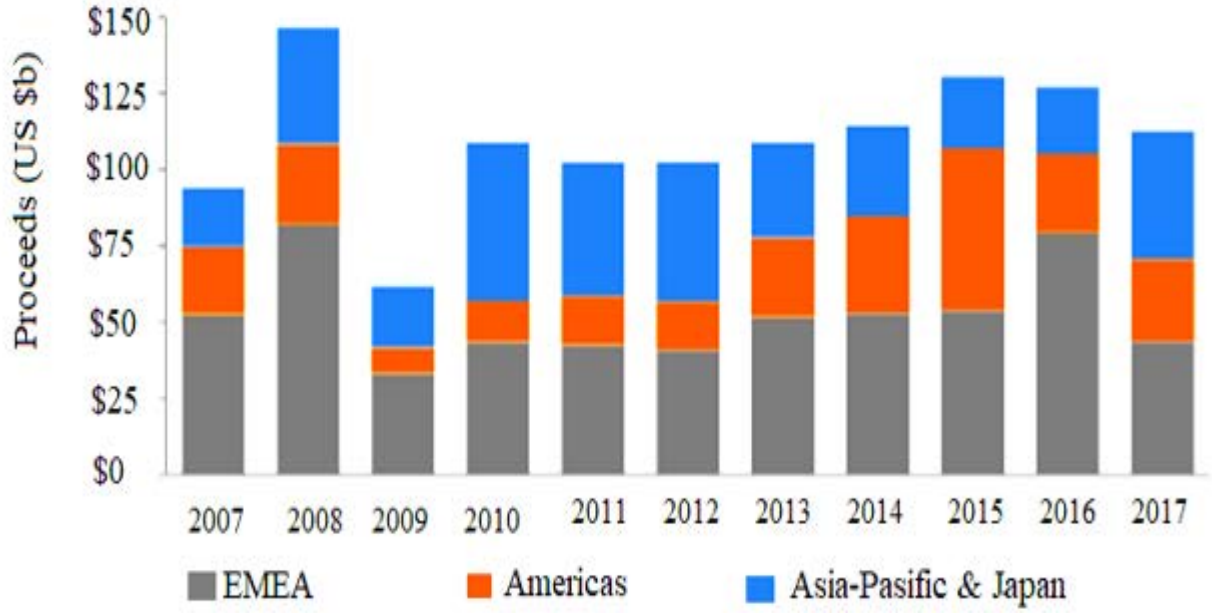
23. Figure D.19: EMEA top five deals in 2016



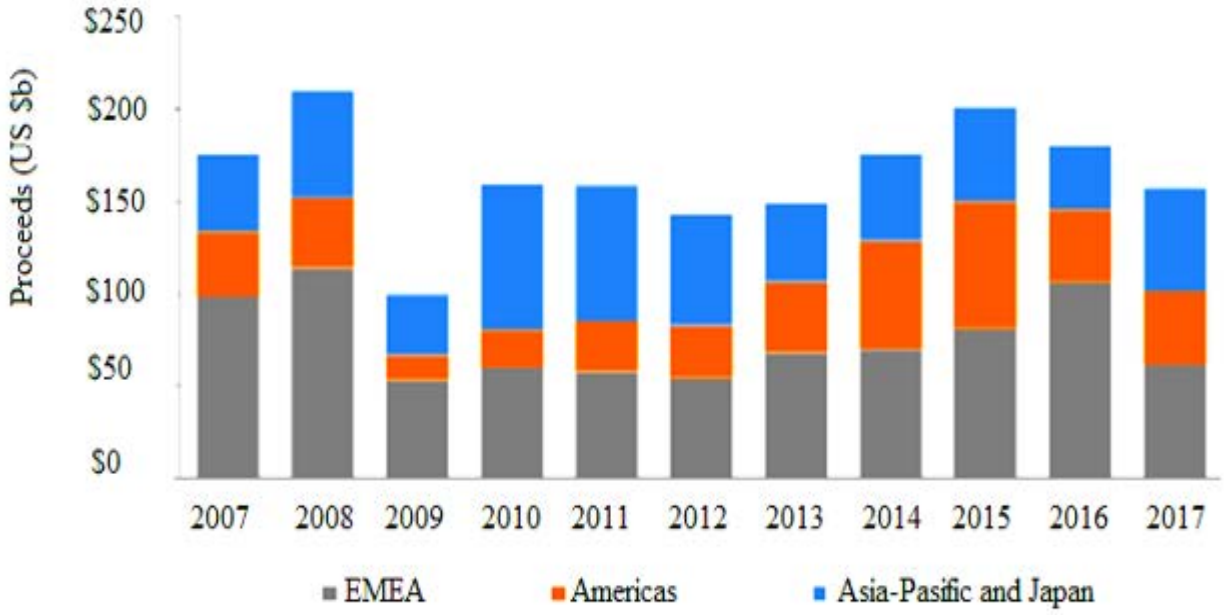
24. Figure D.20: Region project finance breakdown 1st quarter of 2017



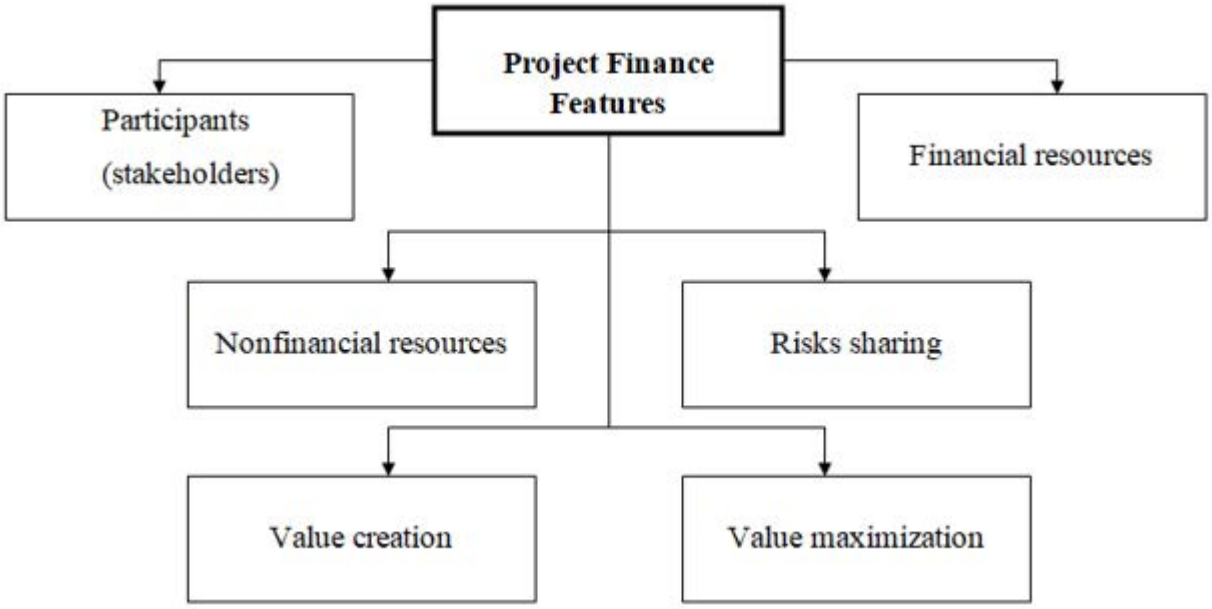
25. Figure D.21: Region project finance fist-half of 2017



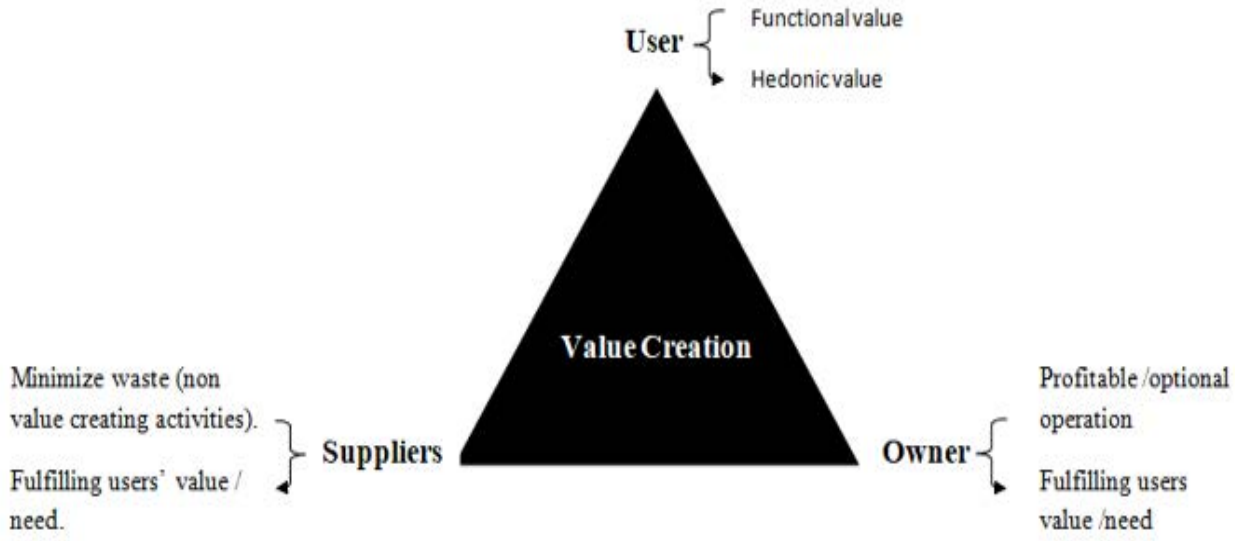
26. Figure D.22: region project finance for 1st nine month of 2017



27. Figure D.23: Features of project financing

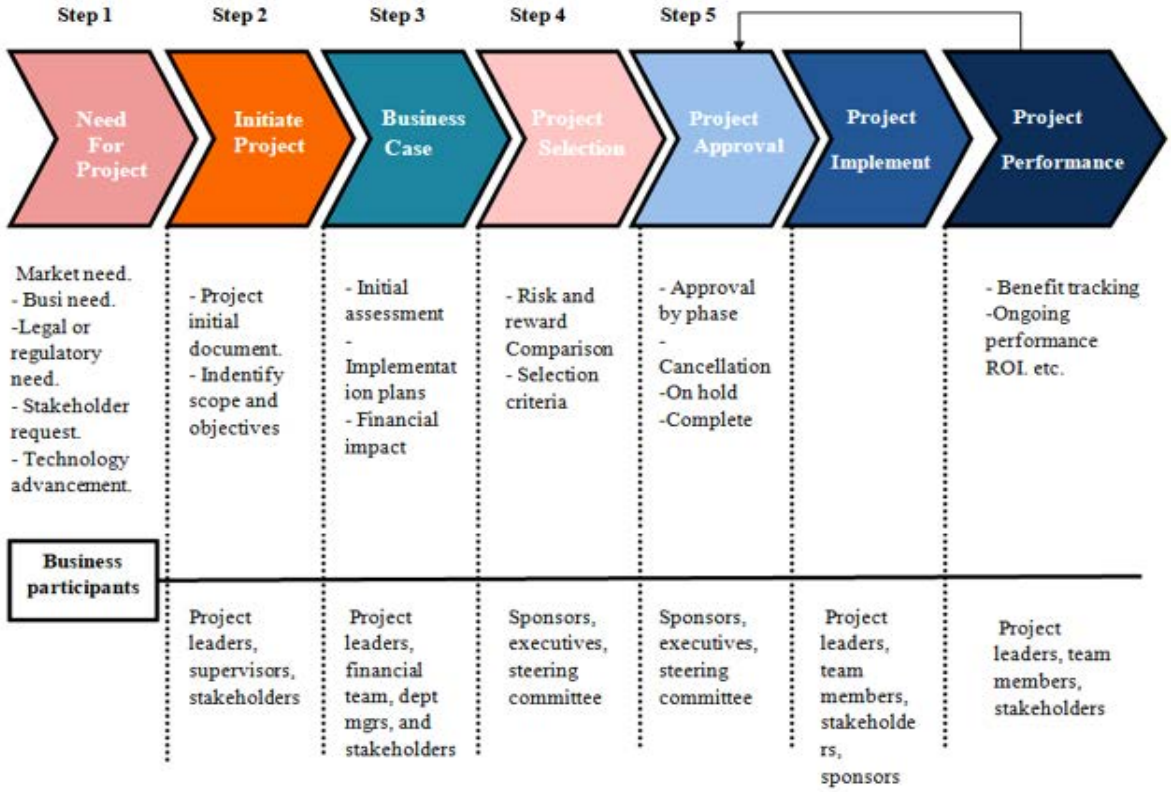


28. **Figure D.24: key stakeholders in value creation.**

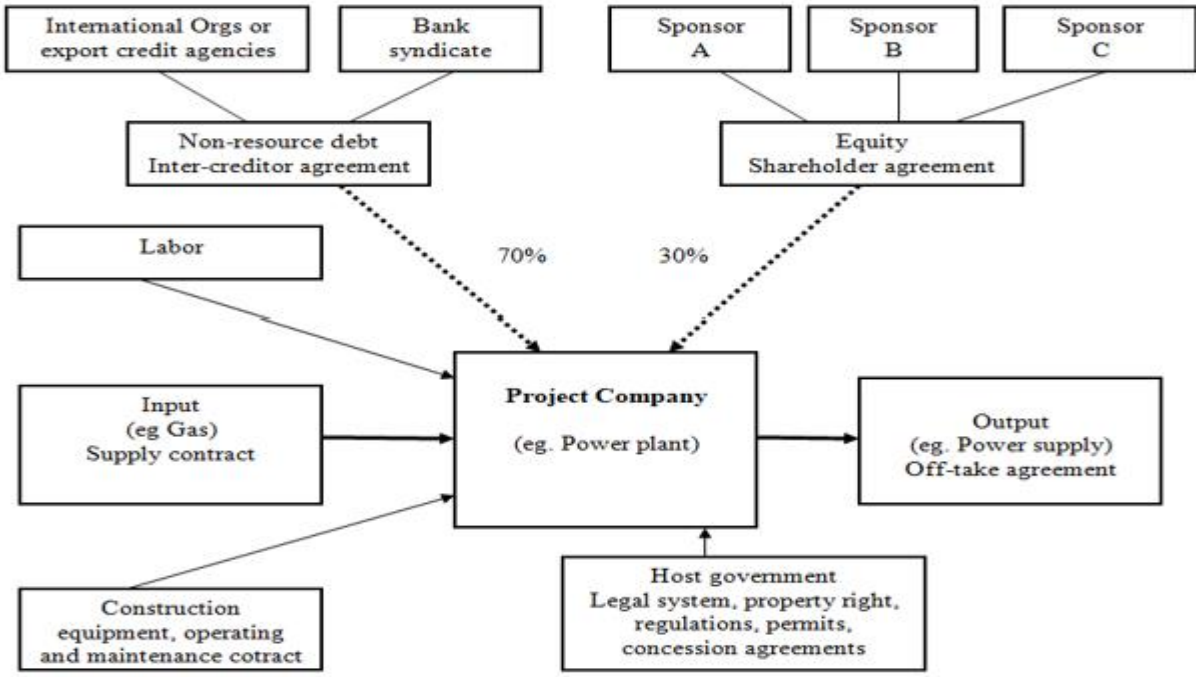


Source: Procedia - Social and Behavioral Sciences (2016)

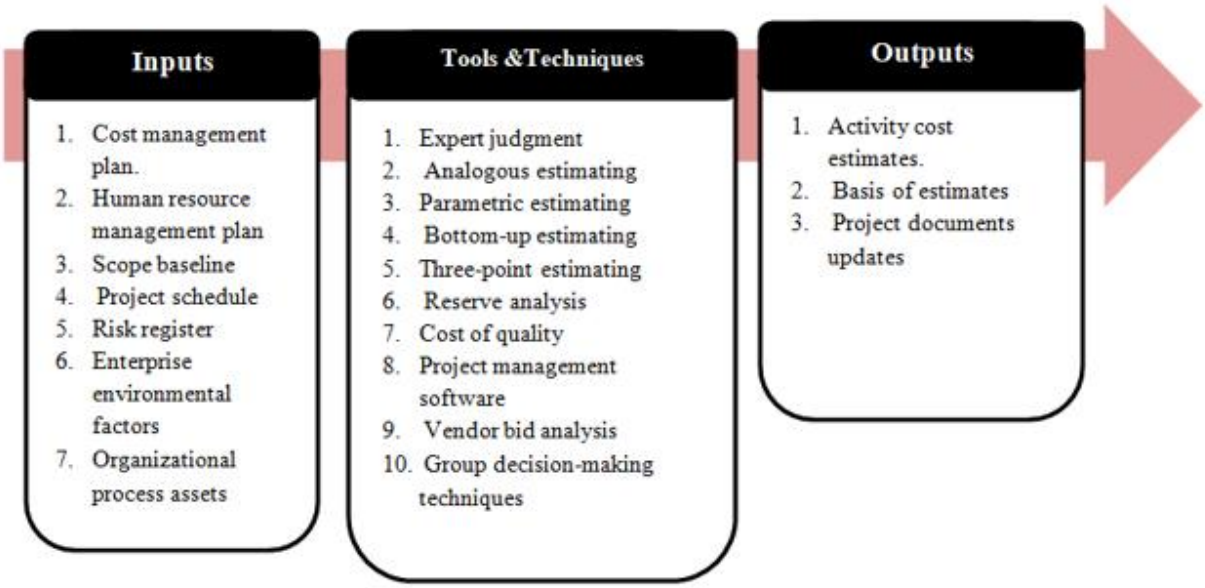
29. Figure D.25: Business case life cycle



30. Figure D.26: Project finance structure.

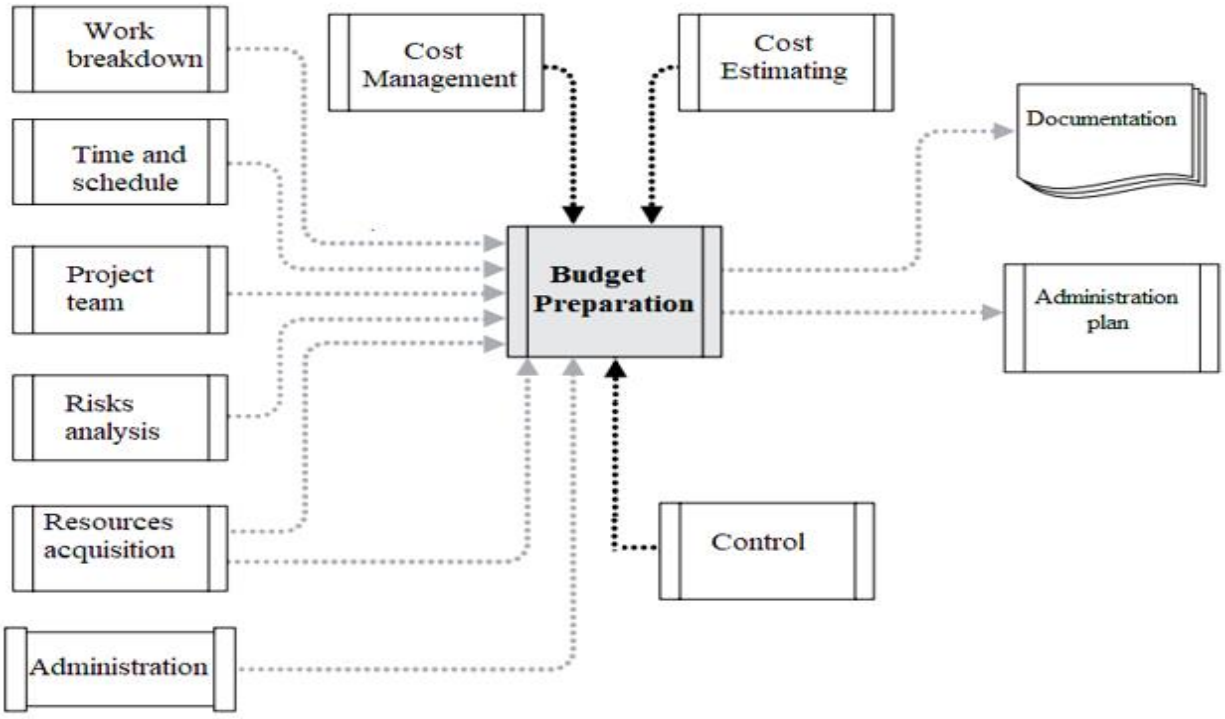


31. Figure D.27: Project Cost Estimate Inputs , Tools &Techniques and Outputs



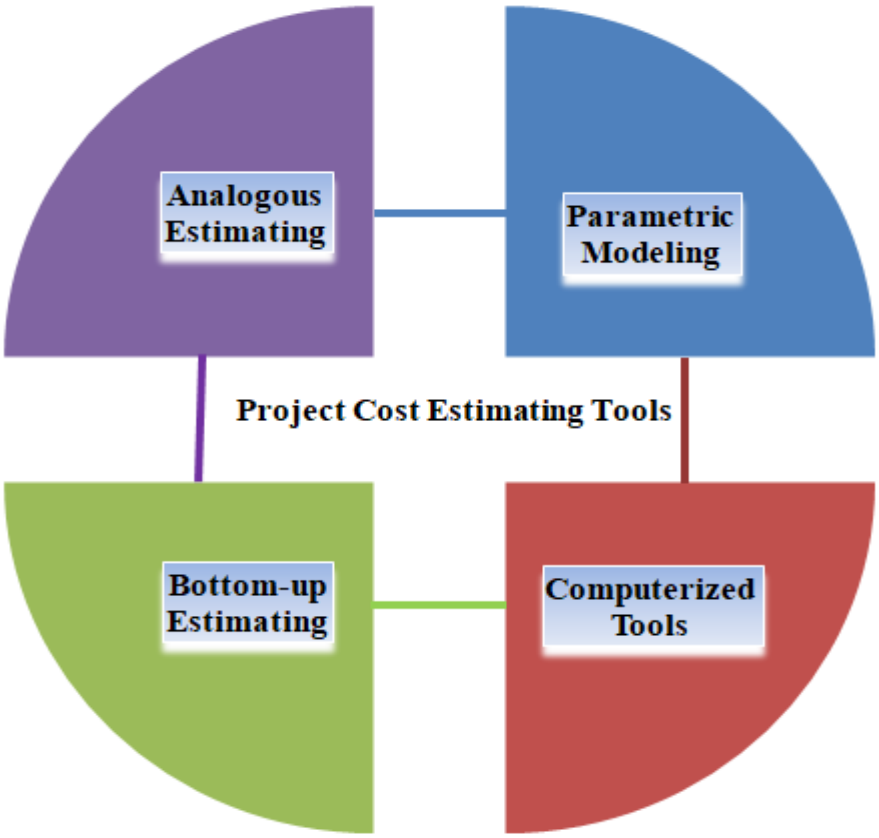
Source: PMBOK

32. Figure D.28: Project cost management model



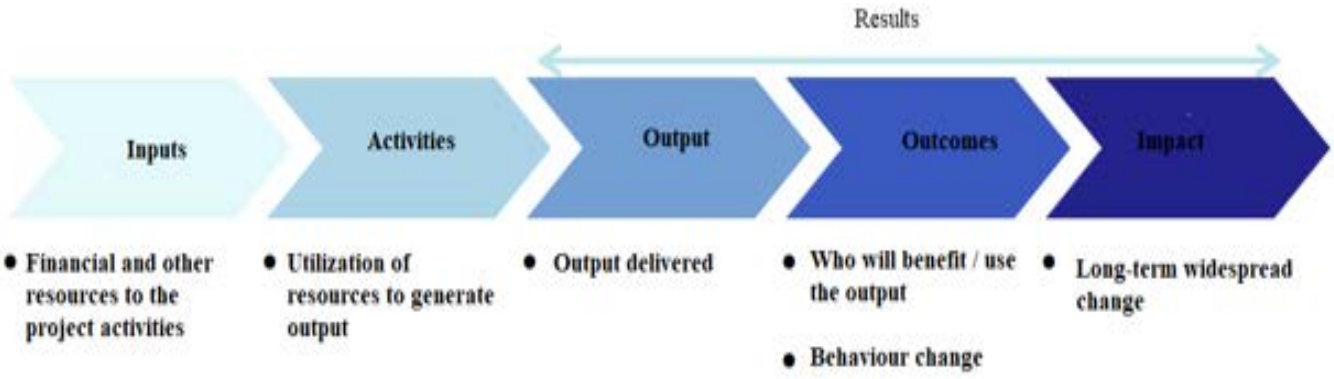
Source: Adapted from the PMBOK (2013).

33. **Figure D.29: Project Cost Estimation Tools**



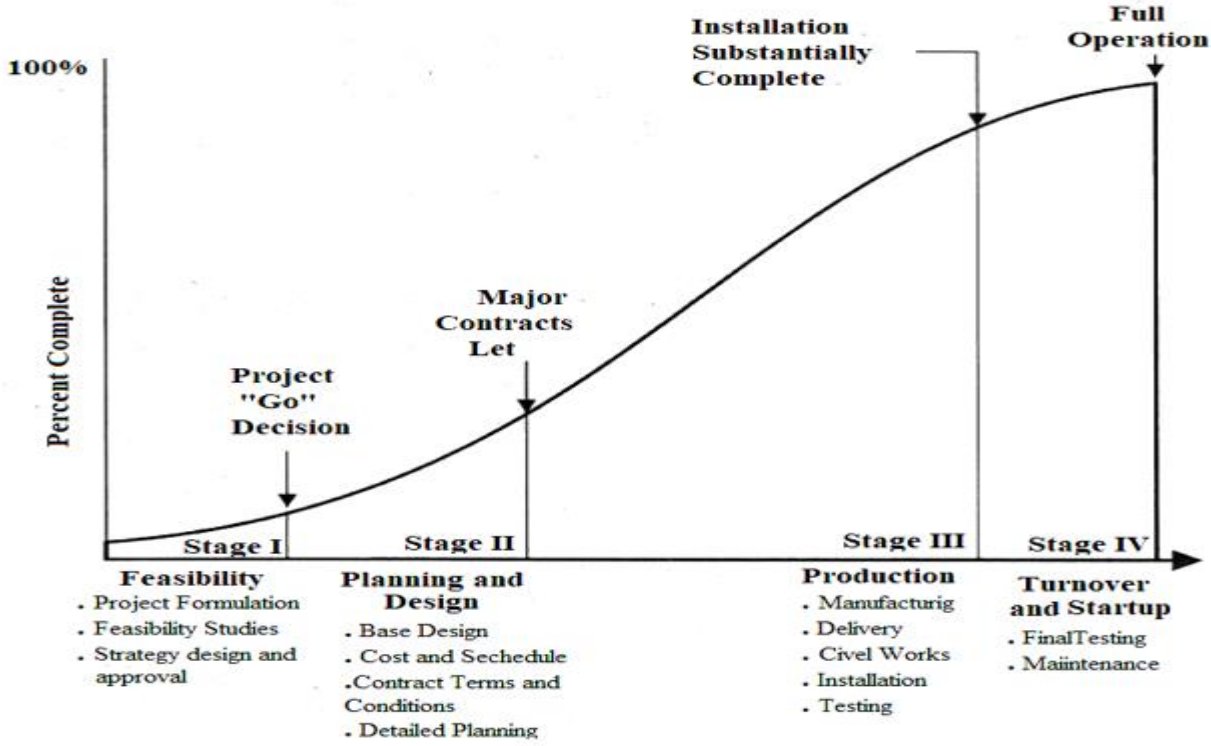
Sources: This project

34. Figure D.30: Result of an Output

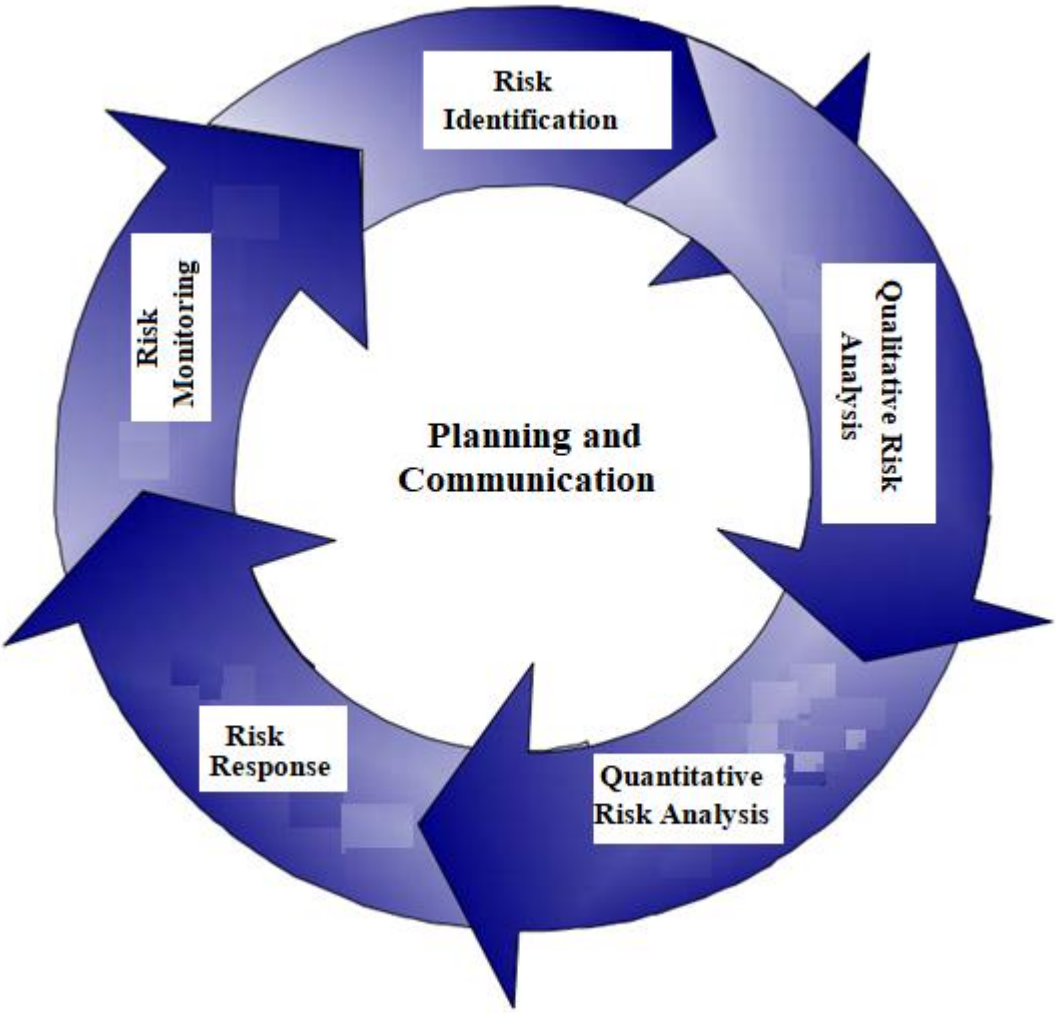


35. Figure D.31: Project Feasibility Analysis Life Cycle

36. Figure D.32: Project Life Cycle



37. Figure D.33: Risk Management Process



APPENDIX E
Tables

1. Table E.1: Youth Unemployment rate in the Africa Region 2015-2017

Region	Unemployed Youth 2015 – 2017 (Millions)		
	2015	**2016**	**2017**
Northern Africa	3.7	3.7	3.7
Sub-Saharan Africa	11.1	11.3	11.6

Sources: International Labor Office (2016)

2. Table E.2: The Ghana cedi to US dollar budget spending on the first three years of the NYEP.

Year	Budgeted Funds		Actual Funds Received	
	GHs	**US$**	**GHs**	**US$**
2006	93,055,075.67	101,422,425.80	9,048,532.57	9,862160.84
2007	53,258,724.90	56,918,590.25	44,123,012.77	47,155,084.72
2008	63,065,502.60	59,613,860.10	61,123,629.31	57,778267.62

Source: NYEP Report 2009

3. Table E.3: Seven (7) Year Period Government Spending on NYEP (GYEEDA)

Year	Spending by The Program Initiation Government		
	GHs	US$	Percentage Change in Funding %
2006	9,048,532.57	9,862160.84	00.0
2007	44,123,012.77	47,155,084.72	387.63
2008	61,123,629.31	57,778267.62	38.53
	Spending After Transition of Government in 2009 to 2012		
	GHs	US$	Percentage Change in Funding %
2009	115,260,000	73,418,689.09	88.57
2010	157,341,000	100,223,581.12	36.51
2011	228,015,437	145242013.50	44.92
2012	449,044,580	286033874.77	96.94

Source: This study data

4. Table E.4: clues to help detect when control systems are needed

Indicator	Clues
Performance	Unexpected technical problems arise. Insufficient resources are unavailable when needed. Quality or reliability problems occur. Owner/Client requires changes in technical specifications. Inter-functional complications and conflicts arise. Market changes that increase/decrease the project's value.
Cost	Technical difficulties that require more resources. Scope of work increases. Bid amount (accepted for the contract award) is too low. Reporting of the monitoring results are poor/late. Project budgeting for contractor cash flows not done right. Changes in market prices of the inputs.
Time	Technical difficulties require more time to solve. Scope of work increases. Unexpected utilities needing relocation. Task sequencing not done right. Required material, labor/equipment unavailable when needed. Key preceding tasks were not completed on time.

5. Table E.5: Types of Accounting Controls

Type of control	Purpose of the control	Example
Preventive controls	To prevent potential problems when an activity is performed.	The segregation of accounting duties; Regulations requiring proper authorization or documentation; Physical control over assets.
Detective controls	To discover the occurrence of adverse events such as operational inefficiency, they act as enforcement, to identify existing undesirable activities, as well as simply to test whether the preventive controls are being effective	Reviews, analyses, audits, and other investigative procedures; Physical inventory checks of assets and financial resources; Bank reconciliations etc.
Corrective controls	To remedy problems (i.e. error and irregularities) discovered through detective controls.	Error detection and resubmission. Discrepancy reports. Error statistics. Backup and recovery.

6. Table E.6: Cohort Age by Industry (years)

Region	Distribution %	Weighted Average Age
Western Europe	41.6	10.1
North America	20.8	11.9
Asia Pacific	11.6	11.2
Africa & Middle East	**8.3**	**10.8**
Latin America	7.6	11.5
Oceania	5.9	10.8
Eastern Europe	4.2	11.3
Total	**100.0**	**10.9**

Sources: Annual Global Project Finance Default and Recovery Study, December 2015.

7. Table E.7: Cohort Age by Industry (years)

Industry	Distribution %	Weighted Average Age
Power	38.0	10.7
Infrastructure	28.9	10.0
Oil & Gas	13.9	10.8
Media & Telecom	6.3	14.1
Metals & Mining	5.3	13.0
Chemicals Production	2.2	11.6
Other	1.6	11.0
Manufacturing	1.4	15.7
Transportation	1.4	6.5
Leisure & Recreation	1.1	11.2
Total	**100.0**	**10.9**

Sources: Annual Global Project Finance Default and Recovery Study, December 2015.

8. Table E.8 :Top Ten Project Finance Deals in 2016

Closing Date	Borrower	Package Amount US$m	Project Nation	Sector
6/24/2016	Yamal SPG	11,839.8	Russia	Oil & Gas
12/1/2016	Ausgrid Finance Pty Ltd	9,465.7	Australia	Power
4/15/2016	Yambu Aramco Sinopec Refining	4,700.4	Saudi Arabia	Petrochemicals
8/31/2016	Borealis Swedish Electricity	4,301.5	Sweden	Power
2/1/2016	Lundin Petroleum AB	4,300.0	Norway	Oil & Gas
4/11/2016	Yamal SPG	4,105.8	Russia	Oil & Gas
4/28/2016	Clean Fuels Scheme	3,980.0	Kuwait	Petrochemicals
3/3/2016	Liwa Plastics Plant	3,800.0	Oman	Industry
6/3/2016	PT Bhimasena Power Indonesia	3,421.0	Indonesia	Power
7/7/2016	Tengizchevroil	3,000.0	Kazakhstan	Petrochemicals

Source: [189]

9. Table E.9: Various Sector Projects Proceeds from 2015 to 2016. Table 2.3.1.32

1/1/2016 -12/31/2016				1/1/2015 – 12/31/2015			
Project Finance Sectors	**Proceeds US $m**	**Mkt. Sh. %**	**No. Issues**	**Proceeds US $m**	**Mkt. Sh.%**	**No Issues**	**Chg. in Mkt. Sh.**
Power	110,871.5	48.0	471	106,746.8	38.5	501	9.5
Oil & Gas	44,311.6	19.2	61	56,127.1	20.2	71	-1.0
Transportation	38,160.1	16.5	121	62,826.1	22.6	109	-6.1
Petrochemicals	14,485.2	6.3	10	13,372.1	4.8	10	1.5
Leisure & Property	7,683.7	3.3	60	10,413.9	3.8	45	-0.5
Industry	6,142.5	2.7	9	12,097.1	4.4	16	-1.7
Mining	4,058.5	1.8	9	8,737.3	3.2	20	-1.4
Water & Sewerage	3,371.1	1.5	12	6,049.1	2.2	18	-0.7
Telecommunication	995.5	0.4	7	794.5	0.3	4	0.1
Water & Recycling	851.1	0.4	5	312.00	0.1	5	0.3
Industrial Total	**230,930.9**	**100.0**	**765**	**277,475.9**	**100.0**	**799**	

Source: [189]

10.Table E.10: Top Five Project Finance Deals Signed by EMEA in 2016.

Close Date	Borrower	Package Amt US $m	Project Nation	Sector
6/24/2016	Yamal SPG	11,839.8	Russia	Oil & Gas
4/15/2016	Yanbu Aramco Sinopec Refining	4,700.4	Saudi Arabia	Petrochemicals
8/31/2016	Borealis Swedish Electricity	4,301.5	Sweden	Power
2/1/2016	Lundin Petroleum AB	4,300.0	Norway	Oil & Gas
4/11/2016	Yamal SPG	4,105.8	Russia	Oil & Gas
4/28/2016	Clean Fuels Scheme	3,980.0	Kuwait	Petrochemicals
3/3/2016	Liwa Plastics Plant	3,800.0	Oman	Industry
7/7/2016	Tengizchevroil	3,000.0	Kazakhstan	Petrochemicals

Source: [189

11.Table E.11: Proceeds from projects by sector.

1/1/2016 -12/31/2016			1/1/2015 – 12/31/2015		
Regions:	**Proceeds US $m**	**No. Issues**	**Proceeds US $m**	**No. Issues**	**% Change in Proceeds**
Global	**230,930.9**	**765**	**277,475.9**	**799**	**-16.8**
Americas:	55,901.8	214	91,819.4	260	-39.1
Central America	4,713.3	20	8,293.4	19	-43.2
South America	12,207.6	42	17,049.6	55	-28.4
North America	38,715.8	151	64,370.0	178	-39.9
Caribbean	265.0	1	2,105.5	8	-87.4
EMEA:	**123,312.5**	**387**	**109,418.6**	**341**	**12.7**
African/Middle East/Central Asia	36,429.7	52	32,739.7	50	11.3
Sub-Saharan Africa	**5,419.1**	**22**	**10,473.4**	**22**	**-48.3**
Middle East	27,170.1	27	17,904.3	23	51.8
Central Asia	3,500.0	2	3,559.0	5	-1.7
North Africa	340.5	1	803.0	3	-57.6
Europe:	**86,882.8**	**335**	**76,679.0**	**288**	**13.3**
Eastern Europe	24,309.3	38	13,493.1	32	80.2
Western Europe	62,573.5	297	63,185.9	256	-1.0
Asia-Pacific & Japan:	**51,716.6**	**164**	**76,237.9**	**198**	**-32.2**
Australasia	20,635.6	32	27,280.7	55	-24.4
Southeast Asia	11,619.7	22	7,561.7	27	53.7
North Asia	1,686.0	10	21,719.0	18	-92.2
South Asia	8,583.8	50	16,464.2	59	-47.9
Japan	9,191.5	50	3,212.3	39	186.1

12.Table E.12: EMEA Project Finance Proceeds from 2015 – 2016

	1/1/2016 - 12/31/2016		1/1/2015 – 12/31/2015		
	Proceeds US $m	**No. Issue**	**Proceeds US $m**	**No. Issue**	**% Change in Proceeds**
EMEA	**123,312.5**	**387**	**109,418.6**	**341**	**12.7**
Western Europe	**62,573.5**	**297**	**63,185.9**	**256**	**-1.018**
United Kingdom	18,141.4	72	19,636.7	56	-7.6
France	6,919.0	57	10,112.7	56	-31.6
Sweden	6,369.8	9	5,803.5	3	9.8
Spain	6,002.4	36	7,471.5	44	-19.7
Italy	5,006.3	35	2,226.4	32	124.9
Norway	4,948.7	7	125.5	1	3,843.2
Germany	4,049.4	21	8,331.2	15	-51.4
Netherlands	3,968.7	16	2,249.0	8	76.5
Belgium	3,113.5	8	1,068.9	7	191.3
Republic of Ireland	1,458.3	16	1,040.2	11	40.2
Finland	951.9	5	1,853.8	8	-48.7
Portugal	600.1	5	1,257.8	5	-52.3
Austria	432.1	3	657.1	4	-34.2
Greece	204.1	3	35.6	1	473.3
Iceland	191.5	2	68.0	1	181.6
Guernsey	143.7	1	-	-	-
Denmark	72.7	1	738.9	3	-90.2
Eastern Europe	**24,309.3**	**38**	**13,493.1**	**32**	**80.2**
Russian Federation	19,081.2	12	622.9	4	-
Turkey	3,446.6	17	10,194.5	13	-66.2
Slovak Republic	1,077.8	1	123.1	1	775.5
Croatia	284.6	1	-	-	-
Georgia	177.0	2	250.0	1	-29.2
Poland	131.8	2	785.5	7	-83.2
Macedonia	69.0	1	-	-	-

13.Table E.13: EMEA Project Finance Proceeds from 2015 – 2016

	1/1/2016 -12/31/2016		1/1/2015 – 12/31/2015		
	Proceeds US $m	**No. Issue**	**Proceeds US $m**	**No. Issue**	**% Change in Proceeds**
Africa/Middle East/Central Asia	**36,429.7**	**52**	**32,739.7**	**53**	**11.3**
Saudi Arabia	7,965.3	3	13,077.5	8	-39.1
Oman	5,919.5	8	1,090.0	5	443.1
Kuwait	3,980.0	1	-	-	-
United Arab Emirates	3,130.2	4	583.0	3	436.9
Kazakhstan	3,000.0	1	260.0	1	1,053.8
Qatar	2,965.0	2			
Ghana	2,435.0	3			
Bahrain	2,241.1	2			
Jordan	968.9	7			
Guinea	823.0	1			
South Africa	644.3	2			
Uzbekistan	500.0	1	161.5		
Guinea	823.0	1	-		
South Africa	644.3	2	2,424.9		
Uzbekistan	500.0	1	-		
Gabon	434.0	2	-		
Egypt	340.5	1	670.0		
Tanzania	258.8	1	-		
Mali	200.0	1	350.0		
Nigeria	180.0	2	4,242.1		
Sierra Leone	109.0	1	-		
Dem Rep of the Congo	105.0	1	-		
Lesotho	84.0	1	-		
Senegal	60.7	2	91.0		
Uganda	59.3	4	-		
Cameroon	26.0	1	-		

14.Table E.14: Top project finance deals signed in 2017.

Date	Borrower	Package Amt US $m	Project Nation	Sector
5/31/2017	Eni Africa – Coral S FLNG DMCC	4,879.5	Mozambique	Oil and Gas
6/1/2017	Kereta Cepat Indonesia China	4,500.00	Indonesia	Transportation
6/7/2017	Network Finance Co Pty Ltd	4,472.5	Australia	Power
6/16/2017	Kinder Morgan Cochin ULC	4,163.8	Canada	Oil and Gas
2/24/2017	PT Bhumi Jati Power	3,355.2	Indonesia	Power
6/15/2017	Ichthys LNG Pty Ltd	3,000.0	Australia	Oil and Gas
3/21/2017	Nati Grid Gas Distn Ltd	2,235.2	United Kingdom	Oil and Gas
4/28/2017	Gemini Offshore Wind Farm	2,131.9	Netherlands	Power
5/26/2107	HPCL Mittal Energy Ltd	2,083.8	India	Industry
6/2/2017	Helix Gen Funding LLC	1,850.0	United States	Power

15.Table E.15: Proceeds per Mandated Arrangers (US$m)

Mandated Arrangers	**2017 Rank**	**2016 Rank**	**Proceeds**	**Mkt Sh%**	**Mkt Sh Chg**	**# of Deals**	**Mkt Sh %**	**Chg in # of Deals**
Mitsubishi UFJ Financial Group	1	2	8,245.2	5.2	-0.9	88	16.7	-26
China Development Bank	2	1	6,590.2	4.2	-3.1	3	0.6	0
Sumitomo Mitsui Finl Group Inc	3	3	6,375.8	4.1	-0.8	74	14.0	-6
State Bannk of India	4	6	6,235.1	4.0	1.5	15	2.8	4
BNP Paribas SA	5	8	5,300.5	3.4	1.2	52	9.8	8
Credit Agricole CIB	6	5	5,022.0	3.2	0.4	54	10.2	2
Industrial & Comm Bank China	7	28	4,647.5	3.0	2.2	21	4.0	9
Societe Generale	8	7	4,095.0	2.6	0.3	48	9.1	-1
ING	9	9	4,064.5	2.6	0.7	55	10.4	13
Mizuho Financial Group	10	4	3,682.7	2.3	-0.9	28	5.3	-16
Santander	11	10	3,660.7	2.3	0.5	44	8.3	-5
Bank of China Limited	12	25	3,232.6	2.1	1.2	13	2.5	2
RBC Capital Markets	13	46	2,869.6	1.8	1.3	18	3.4	8
Natixis	14	11	2,714,3	1.7	0.0	30	5.7	-4
HSBC Holding PLC	15	15	2,328.3	1.5	0.0	19	3.6	-4
Korea Development Bank	16	52	2,295.2	1.5	1.0	20	3.8	10
CIBC World Markets Inc	17	34	2,223.1	1.4	0.6	16	3.0	0
Axis Bank Ltd	18	58	2,221.1	1.4	1.0	9	1.7	-1
Barclays	19	56	1,957.8	1.2	0.8	13	2.5	6
Goldman Sachs & Co	20	68	1,884.9	1.2	0.9	8	1.5	5
Scotiabank	21	27	1,800.4	1.1	0.3	9	1.7	-5
Commonwealth Bank of Australia	22	14	1,716.9	1.1	-0.5	23	4.4	-5
Bank of America Merrill Lynch	23	30	1,693.3	1.1	0.3	13	2.5	3
Development Bank of Japan Inc	24	37	1,692.2	1.1	0.4	11	2.1	5
JP Morgan	25	21	1,560.6	1.0	-0.1	6	1.1	-2
Top Twenty Five Total			**88,109.5**	**56.1**	**8.3**	**528**		**-52**
Industry Total			**157,294.5**	**100.0**				

Source: [193]

16.Table E.16: EMEAs project finance proceeds for 2017

	1/1/2017 -9/30/2017		1/1/2016 -9/30/2016		
	Proceeds US$m	**No .issues**	**Proceeds US$m**	**No. issues**	**% chge in proceeds**
EMEA	**61,512.1**	**209**	**106,157.8**	**288**	**-42.1**
Western Europe	**39,738.1**	**161**	**52,883.1**	**225**	**-24.9**
United kingdom	15,608.0	42	14,547.8	60	7.3
Spain	4,857.8	26	4,816.9	27	0.8
Germany	4,381.0	18	5,385.6	14	-18.7
France	3,795.8	29	4,372.2	39	-13.2
Italy	2,750.8	16	4,330.6	25	-36.5
Netherlands	2,509.1	7	3,637.7	14	-31.0
Greece	1,425.9	3	204.1	3	598.6
Belgium	1,157.8	4	1,122.3	4	3.2
Luxembourg	689.7	1	-	-	-
Finland	545.1	2	870.0	3	-37.3
Portugal	525.7	2	600.1	5	-12.4
Sweden	504.0	2	6,157.4	5	-91.8
Switzerland	477.8	1	-	-	-
Norway	231.5	2	4,919.5	6	-95.3
Republic of ireland	213.0	4	1,402.5	14	-84.3
Denmark	65.2	2	72.2	1	-10.3
Eastern Europe	**4,256.1**	**13**	**21,864.8**	**28**	**-80.1**
Turkey	2,728.3	6	2,279.2	13	-19.7
Hungary	996.3	1	-	-	-
Poland	262.8	1	131.8	2	99.4
Serbia	240.1	2	-	-	-
Bosnia and Herzegovina	27.2	1	-	-	-
Georgia	14.3	1	155.0	1	-90.8
Africa/middle east/central Asia	**17,417.9**	**35**	**31,409.3**	**35**	**-44.5**
Mozambique	4,934.5	2	-	-	-
Israel	2,325.0	3	-	-	-
United Arab Emirates	2,008.4	4	2,904.5	3	-30.9
Jordan	1,582.0	1	72.0	1	2,097.2
Oman	1,368.0	2	5,919.5	8	-76.9
Nigeria	1,000.0	1	180.0	2	455.6
Bahrain	725.8	1	1,500.0	1	-51.6
Saudi Arabia	709.7	2	7,965.3	3	-91.1
Kenya	341.0	1	-	-	-
Azerbaijan	500.0	1	-	-	-
Rwanda	256.0	1	-	-	-

Equatorial guinea	250.0	1	-	-	-
Kazakhstan	184.5	2	3,000.0	1	-93.9
South Africa	172.2	3	644.3	2	-73.3
Madagascar	148.4	1	-	-	-
Egypt	144.5	2	340.5	1	-57.6
Zimbabwe	120.0	1	-	-	-
Kyrgyzstan	110.0	1	-	-	-
Mali	60.0	1	200.0	1	-70.0
Burkina Faso	60.0	1	-	-	-
Armenia	50.0	1	-	-	-
Ivory coast	40.0	1	-	-	-
Tunisia	28.0	1	-	-	-