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Addressing Constraints for Effective Project Finance for Infrastructure Projects in Emerging Economies – the Case of Zimbabwe

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Abstract

The infrastructure deficit in developing countries is vast and current developmental initiatives fail to meet the requirements. There is a need for housing, clean water, sewerage facilities, transport and telecommunications infrastructure. The development of infrastructure requires large amounts of funding, which could be a project or non-recourse finance. The levels of project finance allocated to developing countries are much smaller compared to the developed world. The purpose of this paper is to determine the critical success factors for accessing project finance for infrastructure development in a developing country, Zimbabwe. This study employed the quantitative approach using a survey questionnaire to address various aspects that are important when lenders advance project finance. The questionnaire was distributed to participating organizations comprised of lenders, borrowers and investors with the higher numbers being borrowers. These organizations include banks in Zimbabwe that offer project finance for infrastructure, Pension funds which invest in infrastructure, Multilateral agencies operating in Zimbabwe, and Municipalities of major cities in Zimbabwe. The interrater reliability of the individual factors was calculated. Also, the aggregate interrater reliability for the different attributes was determined using Cronbach's alpha value. A total of 33 factors under five attributes were identified: governmental, financing, project, special purpose vehicle, and politics and economics were identified as being critical for accessing project finance. These factors were ranked according to their significance index or importance. Only 12 factors were considered as extremely important as critical success factors for project financing in Zimbabwe. The contribution of this study is to provide government, project finance agencies, private sector and other stakeholders interested in infrastructure projects with a list of the most important critical success factors for infrastructure projects in a developing country.

Keywords: Critical success factors, Infrastructure development, Infrastructure projects, Project attributes, Project finance

1. Introduction

The infrastructure deficit in developing countries is enormous, and current developmental initiatives fail to meet the requirements. There is a need for housing, clean water, sewerage facilities, transport and telecommunications infrastructure. In some countries, for instance, the only form of transport connecting major centres is air travel because there is no road network linking the towns. This affects trade on many levels as there is no free movement of goods and people. Countries such as Zimbabwe are strategically located and can and act as goods in transit hub between South Africa and countries to the north. Zimbabwe faces several infrastructure challenges, mostly in the power and water sectors, where deteriorating conditions pose risks to the economy and public health (Pushak and Briceño-Garmendia, 2012).

Zimbabwe has struggled to attract Foreign Direct Investment (FDI) as well as project finance, therefore, failing to implement much-needed infrastructure projects. These include the rehabilitation of existing infrastructure and construction of new infrastructure. While the link between infrastructure and economic development is often subject to debate, it cannot be disputed that the availability of infrastructure will facilitate trade. Increased trade, in turn, can lead to economic growth. A World Bank report has suggested that a 1% increase in the infrastructure stock leads to a corresponding 1% growth

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in the Gross Domestic Product (GDP) of the country (Pushak and Briceño-Garmendia, 2012).

The purpose of this study is to determine the factors that are critical for accessing project finance in a developing country. A country like Zimbabwe needs to spend $2 billion per annum up to 2021 to reduce its infrastructure deficit (Pushak and Briceño-Garmendia, 2012). It appears that generally, the countries that have the highest infrastructure deficits tend to be also the ones that are less able to access project finance (Yescombe, 2013).

Access to project finance for infrastructure development is an essential facet of economic development needed in developing countries. Several critical infrastructure projects in Zimbabwe and other developing countries fail to take off or are not completed due to lack of project finance. These countries end up abandoning these projects or using other means of financing that are costly and detrimental to their economies in the longer run.

This study seeks to determine critical success factors for access to project finance to assist Zimbabwe to implement infrastructure projects.

2. Literature Review

Some studies have been carried for various aspects of project finance in infrastructure development (Kumari and Sharma, 2017; Osei-Kyei and Chan, 2015). These studies considered literature from the early 1990s to 2015 and have identified 149 published articles of utter importance. This study may not be exhaustive, but it extensively covered the published materials and gave a good indication of the state of affairs on infrastructure-based research. The study showed that project finance for infrastructure had received the lion's share of the research on infrastructure at 36%, closely followed by the role of infrastructure at 29% of the published articles.

In infrastructure financing research, the covered areas are majorly public funding, private funding, foreign direct investment, public-private partnerships, risk mitigation and innovation in project finance. The participation of private capital in infrastructure development is very much an essential aspect of project finance. This form of participation usually involves project finance and is mostly referred to as a Public Private Partnership (PPP). The debt, equity and mezzanine portions have private businesses participating in the form of banks, insurance companies and pension funds. The studies on Public Private Partnership (PPP) therefore interrogated how certain conditions within the different markets impacted on successful implementation. The nature and scope of PPP arrangements may vary, but this partnership will likely continue to subsist and grow into the future.

The use of PPP has been studied extensively in the literature (Sharma, 2012; Ameyaw, Chan and Owusu-Manu, 2017; Zangoueinezhad and Azar, 2014; Wibowo, 2015; Ahmadabadi and Heravi, 2019; Sarmento and Renneboog, 2016). Sharma (2012) investigated the factors that determine PPP in infrastructure-based mainly on data from developing countries for the period 1990 to 2008. The research outcomes suggest that the size of the country and income of the market has a bearing on the chances of attracting successful PPP deals. Other studies on PPP looked at the contribution of PPP to economic growth (Zangoueinezhad and Azar, 2014). They realized that three factors of the PPP affect economic growth. Namely, the number of PPP projects underway, the value of the project and the ideal type of PPP contracts in place. Sarmento and Renneboog (2016) researched the anatomy of PPP about the renegotiation of the contracts. This article suggests the high prevalence of renegotiation of PPP contracts. While some renegotiations are generally provided for in the contract, a high prevalence has been observed. The article sought to delve into the reasons for the renegotiations using case study research for two projects in Portugal. The case studies looked at two projects that had very different outcomes from the renegotiations, one beneficial and the other detrimental. The article also noted some of the pitfalls of PPP where a winning bidder can become opportunistic. They will find themselves in a situation where they are virtually a monopoly and use this opportunity to renegotiate more favourable terms for themselves. This would not be expected in the face of competition.

A review was conducted on PPP with a specific focus on Zimbabwe (Zinyama and Nhema, 2015). The study was an attempt to weigh into the debate on PPP, global practices, and also looking at the case of Zimbabwe. The study's findings were that there is a low uptake of PPP in Zimbabwe as a result of the lack of legal and institutional structures for PPP. There have been attempts in Zimbabwe to put up the necessary framework to facilitate the employment of PPP. These efforts have not gone far enough and remain largely unimplemented according to the research. Zimbabwe was the setting for this research study.

2.1 Infrastructure development in developing countries

Population growth, especially in the emerging markets, has created an infrastructure deficit that will require annual expenditure on the infrastructure of $2.6 trillion for the next twenty years (Mostafavi et al., 2014). The United States of America on its own is estimated to require a total of $3.6 trillion from 2013 to 2018, for the rehabilitation and improvement of the ageing infrastructure (Mostafavi et al., 2014). The available resources and what is required to bridge the infrastructure gap do not match, leading to challenges in accessing finance. Project finance has been employed successfully in both the developed and developing countries to provide infrastructure. It has been extensively applied in the developed world in which the participation of private capital is encouraged through PPP. Likewise, it has also been applied widely in developing countries, although at a much lower scale in comparison.

Traditionally the function to develop infrastructure has typically been that of the government of the particular country. Some of the infrastructures are part of what is known as public goods. Citizens pay tax to the government, and in return, they expect the provision of public goods by the government in the form of roads, schools, airports, hospitals and telecommunication networks. This is the sort of model that has been employed over time by many countries. Most of the governments controlled these assets through ownership of vertically integrated utilities and other entities. In Zimbabwe, such

utilities are organizations like the Zimbabwe Electricity Supply Authority (ZESA), Telone, Zimbabwe National Roads Authority (ZINARA). They are all wholly owned by the government, although they run like private companies with a board of Directors and Executive management, most of whom are government appointees. Although they are supposed to be autonomous in the manner in which they are run, most of these companies in most countries are mere extensions of government departments. It is also important to note that some of the infrastructure or public goods are monopolistic, for instance, the power supplied by a public utility.

However, the expectation that governments on their own will be able to provide infrastructure has proven to be difficult and even impossible, given the fiscal constraints in many countries. Budget constraints, past experiments of inadequate public spending and inefficiencies in managing infrastructure on the public side have led to a reconsideration of the need to shift the investment effort to the private sector and the development of PPPs (Della Croce and Gatti, 2014). This is particularly true in developing countries where resources are minimal, and revenues from tax alone are insufficient to address the infrastructure needs. As a result, there is a huge infrastructure deficit in developing countries which manifests itself in the form of limited access to water, power, poor or no communications and traffic congestion in urban areas. In some countries, major urban centres can only be accessed by air because no road networks are linking these towns. Shortage of social infrastructure is also prevalent, leading to limited or no access to health facilities and educational facilities.

The involvement of private capital is therefore necessary and inevitable. It has been demonstrated that the participation of private companies in the development of infrastructure also results in the improvement of skills and project quality. It is estimated that developing countries will require $1 trillion in annual infrastructure expenditure until 2020 (Report from World Bank Group, 2013 cited in Yusupov and Abdullah, 2014).

In their literature review on infrastructure and project finance, Kumari and Sharma (2017) observed that in most research, although several studies have been done on infrastructure, the dominant discussion has been how to arrange more finance for infrastructure development. Many articles have been published on physical infrastructure like transportation, telecommunications, power and irrigation (Sharma, 2012; Ameyaw et al., 2017; Zangoueinezhad and Azar, 2014; Wibowo, 2015; Ahmadabadi and Heravi, 2019; Sarmento and Renneboog, 2016); there is very little published research on social infrastructure (Kumari and Sharma, 2017). Review of literature also revealed a correlation between the availability of physical infrastructure and economic growth. Other studies have also shown that electricity is an essential element for improving living standards, thus facilitating national economic development (Kale and Pohekar, 2012). This is easy to comprehend in that most of the industrial machinery used in the production of goods runs on electrical power.

The transport sector was also noted as being crucial for economic development in some of the studies (Carbonara et al., 2015; Babatunde and Perera, 2017). Infrastructure facilitates the movement of goods, services and people. This sector requires significant amounts of investment, and in some studies, investors were reluctant to invest in road networks due to the long construction periods. The research on private, public partners has also been pervasive covering both developed as well as developing countries. The PPP model stem out of a need for alternative funding for infrastructure due to the inadequacy of public funding. The literature on PPP for infrastructure has involved studies on risk management (Carbonara et al., 2015; Crăciun, 2011), Implementation constraints in PPP projects (Osei-Kyei and Chan, 2017), the impact of PPP on project costs (Deng et al.,2016).

The use of project finance for infrastructure development in developing countries has been widespread and successful. Developing countries in East Asia and South America have been utilizing much of the project finance, as indicated by the higher capital flows to these countries (Yescombe, 2013).

The share of the project finance for sub-Saharan Africa for the years 2003 – 2013 was only 3% of the world total. During those years, the infrastructure projects for the region benefitted from a debt of $59 billion, whereas the world total was $2 trillion (Dornel, 2014). The leading countries in accessing this project finance in Africa are Nigeria, South Africa, Ghana, and Angola.

Project finance is seen as a solution to the funding problems facing developed and developing countries (Yusupov and Abdullah, 2014; Munzara, 2015). Innovative financing sources that employ financial engineering tools are finding wide application in projects in developing countries. Project finance is one of these sources of financing that combines both financial engineering and innovative financing features (Yusupov and Abdullah, 2014). The project finance contribution to the development of infrastructure in Zimbabwe is unknown as there are currently no published articles on this area.

2.2 Studies on the risk assessment and mitigation in project finance

Project finance has an inherent risk that must be mitigated to attract the interest of lenders and investors alike. The fact that this type of financing is non-recourse complicates rather than making matters easier. Some studies have also focused on the issue of risk involved in project finance for developing countries (Crăciun, 2011; Srivastava, 2014; Babatunde and Perera, 2017). The identification of risks, assessment of their impact and mitigation is an essential aspect of project finance.

The formation of the Project Company or Special Purpose Vehicle (SPV) is one of the risk mitigation initiatives. The success of any financial deal rests upon future cash flows of the project. The creation of the SPV is a way of ringfencing project cash flows and assets (Yescombe, 2013). This, according to Srivastava (2014), provides bankruptcy remoteness of the project and its assets from financial problems the sponsors may have. The reverse benefit for the sponsors is that they do not have the project difficulties contaminating their existing balance sheets. This aspect encourages Sponsors to venture into projects under this arrangement as they do not fear that the failure of the project will affect their

existing businesses. Srivastava (2014) also gave a brief insight into how lenders appraise risks for project finance. The study noted that banks in India identify project risks and appraise them then categorize them into high, medium and low risk based on the probability of the risk factor happening and the severity of the impact.

Another study by Babatunde and Perera (2017) looked at the risks involved in traffic revenue for road projects under the Build Operate and Transfer (BOT) model. In the BOT model, where the project cash flows arise from user payments, traffic volumes must be predicted during the project conception. These predictions or estimates may be far from the truth during the operation phase. If they are lower than predicted, then the project will be in trouble, and so this is a risk that must be considered and mitigated. The users may also refuse to pay, and the E-tolls in South Africa is a case in point. Babatunde and Perera (2017) identified 25 risk factors to road traffic revenues, and 13 of these were considered to be critical. The top five most risks include Loss due to adverse government decisions/policies, Loss due to resistance to pay, faulty project structuring, Politically motivated resistance, and Government inaction due to political/social reasons.

Therefore, risks are real impediments to the implementation of project finance for infrastructure development. The risks must, therefore, be mitigated effectively to allow structuring of project finance deals.

The share of projects finance that ends up in the developing countries is minimal in comparison to the developed world. Sub-Saharan Africa, which is one of the least developed continents, only had 3% of the project finance in the years between 2003 and 2013 (Dornel, 2014). The influence of political and other risks on the ability to develop countries to access project finance is an area that still needs to be explored.

Several studies have been conducted in Sub Saharan Africa on the various aspects of the employment of project finance in infrastructure development. These included the state of project finance research (Kumari et al., 2016), the critical success factors for accessing project finance (Babatunde et al., 2012; Ameyaw et al., 2016; Sharma, 2012), the barriers to accessing project finance (Babatunde et al., 2015; Badu et al., 2012), risk mitigation in project finance deals (Crăciun, 2011; Srivastava, 2014; Babatunde and Pererab, 2017), the application of innovation in the provision of project finance (Mostafavi et al. 2014; Annamalai and Hari, 2016). However, it is clear from the literature that a few of the studies cited cover Zimbabwe specifically, and this was the subject of this research.

3. Research Methodology

This study employed a quantitative approach to investigate and gather data on project financing in a developing country.

3.1. Questionnaire Development and administration

A questionnaire was prepared for this research based on the aspects usually considered necessary by project finance providers. Previous studies on the subject matter were also considered when designing the questionnaire (Ameyaw et al., 2017; Al-shareem and Yusof, 2015; Wibowo and Alfen, 2015; Swamy et al., 2018).

The questionnaire employed in this research was carefully crafted and the quality checked by individuals with knowledge on the subject matter. This is the approach that was employed for this research to solicit responses that assisted in answering the research questions.

The questionnaire had some sections dealing with different aspects of the research. The first part of the questionnaire comprised of questions that sought to gather information on participating organizations and respondents. The intention was to distribute the questionnaire to people with knowledge and experience on project finance and could, therefore, comment appropriately.

The second section consisted of various aspects that are considered to be important when lenders advance project finance. These aspects are Project attributes, Government attributes, Financing attributes, Political and economic attributes, and Special purpose vehicle attributes.

The respondents were asked to rate various important factors that fall under the attributes documented above according to their importance for accessing project finance.

The opinions of people considered experts on the subject matter were sought through their responses on a set of questions posed in a questionnaire. The questionnaire was pre-tested to assist in determining whether:

i. The instructions of the questionnaire were easy to follow and understand.
ii. The statement sequence is logical.
iii. The language and wording were understandable.

This method offered the benefit of providing information on large groups of people with ease and convenience in a timely and cost-effective manner. The questionnaires made it possible to determine the most important factors for those who offer project finance.

3.2. Data Collection

The data was collected from organizations in Zimbabwe involved with infrastructure development or in the provision of project finance. The research sought to establish the reasons for the failure to access project finance. There were two groups involved in this study, those who use the project finance and those who provide it. A questionnaire was sent out to all parties concerned who are;

i. Banks operating in Zimbabwe that ordinarily would offer project finance for infrastructure.
ii. Pension funds which invest in infrastructure.
iii. Multilateral agencies operating in Zimbabwe and the region
iv. Municipalities of the major cities in Zimbabwe;
v. Parastatal organizations;

The data was drawn from both the lenders and the borrowers of project finance.

Survey questionnaires were distributed electronically, and also hard copies were delivered to the sample population, requesting them to participate in the survey. Respondents were required to submit the questionnaires within 15 days after receiving them.

3.3. Data Analysis

The completed questionnaires were checked for any obvious errors. Any clarification required was sought from the respondents. The questionnaires were coded with respondents being identified as AA001 to AA00N the last number. The various responses on the Likert scale were coded with numbers from 1 to 5 or as appropriate. The data was then entered onto an excel workbook. Worksheets were created in the workbook, each one representing each of the attributes. The data was thoroughly checked for transcription errors before any evaluation was done.

The study was descriptive, as it sought to establish the relationship between the conditions within the country and the attitudes of organizations and investors to get involved in infrastructure development. A significance index was calculated from the responses given by the respondents according to the formula below (Ameyaw et al., 2017);

$$SI_i = \frac{\sum a_i \times X_i}{5} \quad (1)$$

Where SI_i is the significant factor for the ith factor, a_i is the constant applied to the ith response, for example, a_i = 1 extremely low significance and a_i = 5 is extremely high significance, these are the extreme ends of the Likert scale.

$X_i = n_i/N$, where n_i is the variable expressing the frequency of the ith factor and N is the number of respondents.

The significance index is categorized according to Jannadi (1996), SI >0.57 is significant, and it is called critical success factor, SI < 0.57 are not regarded as critical, and SI>0.86 is extremely significant.

The reliability of a measurement refers to the ability to produce the same result over repeated measurements consistently. The interrater reliability of the individual factors was calculated. Besides, the aggregate interrater reliability for the different attributes was also determined using Cronbach's alpha value. This was calculated from the analysis of variance (ANOVA) two factor without replication from excel. The interrater reliability values were also calculated using the formula below (Ameyaw et al., 2017);

$$\alpha = 1 - \frac{2 \times S_X^2}{[(H+L)M - (M^2) - (H \times L)] \times \left[\frac{k}{k-1}\right]} \quad (2)$$

Where: S^2_X is the average variance of the critical success factors, α is the interrater agreement, H is the highest value of the measurement scale, L is the lowest value of the measurement scale, M is the mean score, K is the number of respondents

The study used interrater reliability measurement guided by LeBreton and Senter (2008), 0.00 - 0.3 (lack of agreement), 0.31 - 0.50 (weak agreement), 0.51 - 0.70 (moderate agreement), 0.71 - 0.90 (strong agreement) and 0.91 - 1.00 (very strong agreement). The cut-off point greater than 0.70 for interrater reliability, denotes a high level of agreement among the survey respondents (Brown and Hauenstein, 2005).

4. Results and Discussions

The participating organizations consisted of lenders, borrowers and investors with the greater numbers being borrowers as depicted in table 1. While the population may not be as representative a sample as desired, the research covered the important groups that are involved with project finance in Zimbabwe.

Table 1: The distribution of participating organizations

Type of organization	Number of organizations	Number of respondents
Lender	1	2
Borrower	3	9
Investor	1	1
Other	0	0

Table 2: The loan tenure preference according to participants

Loan tenure preference	Number of respondents
Less than 10 years	0
11-15 years	6
16-20 years	1
Greater than 20 years	6

It was observed that the respondents from the same organization indicated different loan tenure preferences. The results are presented in Table 2 above, which indicates that the preferred loan tenures are generally long, the most prevalent being 11-15 years, followed by greater than 20 years. This is consistent with the loan tenures usually encountered in project finance for infrastructure development (Pinto, 2017; Yescombe, 2013).

4.1 Individual participant information

The individual participants were required to indicate their qualifications and years of experience with project finance. This was used to gauge their level of knowledge and experience with project finance. This would also generally indicate their ability to comment competently on factors affecting the access to project finance.

The respondents possess degrees from tertiary institutions. The respondents with Bachelors' degrees were 46% while the rest have masters' degrees. The results show that 31% of the respondents have less than five years of project finance experience, while 38% have between 11-15 years' experience. It can, therefore, be inferred from the above that the respondents had sufficient knowledge of project finance to comment on its attributes and application.

4.2 Data Reliability

The Cronbach alpha index measured the reliability of the data. The Cronbach alpha index is a way in which interrater reliability is verified. This research looked at factors that were considered to be critical for accessing project finance, and these were grouped into five categories namely, project attributes, government attributes, financing attributes, political and economic attributes and the special purpose vehicle attributes. The Cronbach alpha values were calculated for the above

attributes based on the responses given by the respondents and are presented in Table 3.

Table 3: The Cronbach's alpha values for the attributes studied

Attribute	Alpha value	Data reliability
Project attributes	0.61	Questionable
Government attributes	0.74	Acceptable
Financing attributes	0.89	Good
Political and economic attributes	0.60	Questionable
Special purpose vehicle attributes	0.94	Excellent

The results in the table above indicate that the responses obtained for project and, political and economic attributes are questionable based on the interpretation of the Cronbach's alpha values. The rest of the data for the other attributes has been rated from acceptable to excellent. The questionable attributes seem to have very divergent respondent views on the factors in question but do not seem to apply universally. The interrater reliability value has also been calculated and interpreted for the individual factors.

The individual results for each of the factors are discussed below for all the attributes studied. The review of the individual factor reliability results can give a better indication of what is affecting the aggregate results for the different attributes.

4.3 Validity of results

The questionnaire was administered in a limited duration of time, and its contents were not changed. Respondents were also not affected by the history of having been given the same questionnaire before this research. The respondents who are also considered experts in the subject matter understood the questions in the survey questionnaire. This can be taken as a sign of construct validity. The other matters related to the administering of the questionnaire are also part of the internal validity of the research. This research is, therefore considered to be valid.

4.4 Projects attribute results

The project attribute is at the centre of all activities related to project finance. The project is why financial resources are required, and its characteristics, therefore, may determine access to the project finance. This research would not be possible or make any sense without looking at the project attributes. There were 11 factors examined under project attributes and out of these, there were three attributes in which respondents agreed and strongly agreed with their importance. These are profitability of the projects and demand for the infrastructure, revenue realized from the project and Project repayment period. While the majority of the respondents agreed or strongly agreed with the importance of the other factors, there was also notable numbers of neutral respondents who neither agreed nor disagreed. These ranged from 8% to 25%. Concerning the factors of on-time completion of the project and completion time of the project, 8% of the respondents even disagreed that these were important in accessing project finance. The highest numbers of neutral responses were for the factors related to minimization of risk and the nature of the concession agreement being important to accessing project finance.

Table 4: The interrater reliability values for the different factors for the project attributes

Project attributes	IRA
The repayment period	0.71
The revenue to be realized by the project	0.44
The profitability of the project and demand for the infrastructure	0.61
The cost of the project	0.65
The scope of the project	0.65
The construction period of the project	0.57
The concession period of the project	0.65
The On-time completion of the project	0.27
The Project risk (minimization of risk)	0.33
The nature of the concession agreement	0.33
The existence of an Insurance coverage	0.57

The interrater reliability values obtained for the factors under the project attribute show a general acceptable trend except for nature of the concession agreement, minimization of project risk, the on-time completion of the project and the revenue to be realized by the project, which are all unacceptable. The factor for the revenue to be realized has a high level of respondents agreeing that it is essential for accessing project finance and it is surprising to find it in the list of factors where interrater reliability is deemed unacceptable. This factor shows a very low level of variance of responses and the expectation would be that the interrater reliability would be acceptable. There was strong unanimous agreement among respondents that the revenue to be realized from the project was necessary for accessing project finance.

4.5 Governmental attributes results

The government is a significant stakeholder in the provision of infrastructure in a country. This includes acting as the sponsor of public infrastructure and providing guarantees when required in PPP deals. It also sets the environment in which project finance deals are negotiated and agreed in so many ways. Under the government attributes, ten factors were considered and out of these 6 had an outright agreement, that they were important for accessing project finance. These are the existence of government guarantees, availability of tax exemption or reduction, the existence of Government control and charges, the availability of government permits and approval, clarity of government objectives and the existence of a favourable legal framework that is enforced. It may not be difficult to see why these are important as they have a direct bearing on the success of the project.

The interrater reliability values for factors under the government attributes were all generally found to be acceptable or higher except the stability of the government factor, which was questionable. The

responses from the respondents under this attribute can, therefore, be reviewed without suspicion and be considered reliable. There was very good agreement among respondents for the following factors, the existence of a favourable legal framework that is enforced, the clarity of government objectives, the availability of government permits and approval and the existence of government guarantees. These factors can be considered to strengthen the rights of lenders and investors as well as facilitating the implementation of the project. The factor on the existence of government control and charges received the highest proportion of neutral responses (50%) than any other factor in the questionnaire. A high number of neutral respondents indicates some level of ambiguity in the question or lack of knowledge on the part of respondents regarding the enquiry. The other half of the respondents indicated that this factor was necessary for accessing project finance.

Table 5: The interrater reliability values for the factors under the governmental attribute

Government Attributes	IRA
The existence of Government guarantees	0.76
Availability of Tax exemption or reduction	0.72
The existence of an Incentive for new market penetration	0.63
The availability of Government permit and approval	0.76
The existence of Government control and charges	0.73
The existence of Government support for supply and distribution	0.69
The stability of the Government	0.51
The clarity of Government objectives	0.71
The existence of a favourable legal framework that is enforced	0.82
The existence of a committed public agency as part of infrastructure development	0.65

4.6 Financing attributes results

The financing attribute in this research is concerned with the factors involving the financial characteristics of project finance. The financial resources required for implementing the project are advanced under a set of conditions agreed upon by the contractual parties, the lenders, investors and the borrowers. Some of these conditions are exogenous to the parties involved in the deals. In this research, nine factors were studied under the financing attribute. Out of the nine factors, four of them had a strong agreement among respondents that they are essential for accessing projects finance. These are the equity repayment period, the currency exchange rate, the interest rate and the inflation rate. The rest of the factors while having the majority of the respondents agreeing on their importance for accessing project finance, there was a fair amount of neutral responses ranging from 8% to 17%. No respondents either disagreed or strongly disagreed with the importance of the factors

The interrater reliability values for the different factors were generally in the acceptable range except a few that were questionable. These were the available financial market, the internal rate of return of the project, the payment mechanism and the interest rate. The data for the financing attribute factors can generally be taken to be acceptable.

Table 6: The interrater reliability values for the factors in financing attributes

Financing Attributes	IRA
The Inflation rate	0.71
The Interest rate	0.52
Currency exchange rate	0.71
High equity to debt ratio	0.72
The Payment mechanism	0.57
The Internal rate of return of the project	0.40
The Return on equity of the project	0.66
The Equity repayment period of the project	0.71
The Available financial market	0.57

4.7 Political and economic attributes results

The political and economic attributes of the project are very important for its success. Many projects have run into problems because of a lack of appropriate consideration for these attributes. Four factors were selected for these attributes and respondents asked to rate their importance. The results indicate strong agreement on the importance of factors on the political and economic stability of the country and an effective market for the project outputs. While the responses for the other two factors have an overall agreement for the social acceptability of the project and the existence of political support for the project, there are significant neutral responses and disagreements.

Table 7: The interrater reliability values: factors in the political and economic attributes

Political and Economic Attributes	IRA
The existence of Political support for the project	0.51
The Social acceptability of the project	0.65
The political and economic stability of the country	0.61
An Effective market for the project outputs	0.66

The interrater reliability values for the factors considered lie in the questionable to acceptable categories. The factor on the existence of political support for the project has a questionable reliability value. Again it may be a question of ambiguity that has returned a response that disagrees with its importance in the accessing of project finance.

4.8 Special Purpose Vehicle (SPV) attributes results

In the context of project management, a Special Purpose Vehicle is a company created for the specific purpose to implement and manage the project. Its functions will depend on the scope and model of the project. This is done for several reasons chief among them, the ringfencing of the project revenues and creating bankruptcy remoteness between the project and its sponsors (Yescombe, 2013). This arrangement benefits both the project company as well as the sponsors' other business operations. Respondents were asked about the importance of a Special Purpose Vehicle in accessing project finance. While the majority was in agreement with its importance, a significant number (42%) were neutral, not agreeing or disagreeing with its importance. This may not be a question of ambiguity as with other previous cases of

factors. The infrastructure projects that have been implemented in Zimbabwe may not have followed this model in the past. A good number of them have been run from government departments or the project departments of state-owned enterprises or local authorities.

Table 8: Interrater reliability results for the factor on the existence of the SPV

Special Purpose Vehicle	IRA
Existence of Special Purpose Vehicle	0.74

The interrater reliability value for the factor on the existence of a Special Purpose Vehicle lies in the acceptable category. This means the responses given can be taken as being reliable for this factor.

The nature of the Project Company or Special Purpose Vehicle (SPV) can take many shapes or forms. The characteristics of the SPV may, therefore, have a bearing on the ability of the project to access project finance. Nineteen factors were examined under the SPV attribute, and all of them had high levels of agreement.

Table 9: The interrater reliability results for the SPV factors

Special Purpose Vehicle Attributes	IRA
The Size of the company	0.85
The Type of company	0.85
The Technical Expertise available in the project company	0.40
The Resources available in the project company	0.65
The legal structure of the project company	0.60
The Financial strength of the company	0.65
The Return on asset of the project company	0.65
The projected cash flow of the project	0.47
The Contractor's liquidity	0.54
The existence and magnitude of outstanding loans of the project company	0.33
The Debt level of the project	0.60
The Reputation of the project company	0.80
The level of project management experience	0.57
The Strong commercial track record of the project team members	0.60
Familiarity with industry and client	0.90
The Quality of subcontractors	0.87
The level of Management skills in the project company	0.80
The existence of good corporate governance	0.57
The existence of financial management knowledge in the project company	0.65

However, all the factors also had significant amounts of neutral responses. This may be because there were a significant number of neutral responses to the factor regarding the existence of the SPV. It may follow that if one is neutral about the existence of the SPV, one may also become neutral on the characteristics of the SPV. However, the magnitude of the neutral responses is not uniform and is varying from factor to factor, and their percentages are from 8% to 58%. This may be an indication that the respondents were considering each factor individually in most cases. The factors on the type and size of the SPV were the ones where the most neutral respondents were obtained. This tends to point to a perspective by the respondents that these factors may not be essential in accessing project finance. However, they have not expressed strong sentiments in this regard. The overall verdict is that the factors under this attribute were generally found to be essential for accessing project finance according to the respondents.

The interrater reliability values indicate that the respondents produced reliable results except for the factors on the existence and magnitude of outstanding loans of the SPV, the projected cash flow of the project and the technical expertise of the SPV. These factors are characterized by higher levels of variance in comparison to the other factors under the SPV attribute.

4.9 The critical success factors

The factors studied under the different attributes cannot be assumed to be equally important to the study. This research suffered a major setback in that there was a high rate of poor interrater reliability. The number of factors that were investigated in this study was 54, and out of this 21 did not pass the interrater reliability test giving compliance of 61%. The factors that did not pass the interrater reliability test though important for the study were excluded in the final analysis. The remaining 33 factors were subjected to a significance test to obtain an index between 0 and 1.

These factors were ranked according to their significance index of importance, and only the extremely important factors are discussed below. There were 12 such factors.

The discussion below concentrated on the factors that are considered extremely important for access to project finance. The significant factors were calculated for all the factors in the study, and these were then ranked. The results are reported in Tables 10, 11, 12, 13 and 14 according to the attributes under which they are classified.

Table 10: Critical success factors: accessing project finance under the project attribute

Critical Success Factor – Project Attribute	SI
The profitability of the project and demand for the infrastructure	0.91
The repayment period	0.89
The cost of the project	0.85
The scope of the project	0.83
The concession period of the project	0.83
The construction period of the project	0.78

The above factors were found to be critical for the successful access to project finance, and the SI value indicates their importance relative to each other. These findings are consistent with Ahmadabadi and Heravi (2019) whose research identified reliable contractual agreements and project resilience as some of the critical success factors for project attributes that influence the success of the construction phase of the project. The importance of contractual agreement also came out from other studies, Wibowo and Alfen (2015) who emphases the importance of irrevocable contract; Osei-Kyei and Chan (2017 a) emphasized the importance of well-organized and committed contracting authority; Sharma (2012) who emphasized the importance of the ideal type of PPP contract in use; and Ameyaw et al. (2017)

emphasized the importance of well-designed PPP contract.

These factors are important to ensure project performance. Swamy et al. (2018) identified the importance of stakeholder consent, project structure and baseline information as critical success factors for project performance. The most important factor under project attribute is the profitability of the project and the demand for infrastructure. Ahmadabadi and Heravi (2019) emphasized the importance of economic viability for a project and Alteneiji et al. (2019) emphasises that there has to be a demand for and debt-paying project.

Table 11: Critical success factors: accessing project finance (the Government attribute)

Critical Success Factor – Government Attribute	SI
The clarity of Government objectives	0.88
The availability of Government permit and approval	0.86
The existence of a favourable legal framework that is enforced	0.86
The existence of financial management knowledge in the project company	0.86
The existence of Government guarantees	0.85
Availability of Tax exemption or reduction	0.82
The existence of a committed public agency as part of infrastructure development	0.80
The existence of Government support for supply and distribution	0.77
The existence of an Incentive for new market penetration	0.74
The existence of Government control and charges	0.72

The factors for the governmental attribute, depicted in the above table were considered to be critical in the accessing of project finance in Zimbabwe. This is consistent with literature findings, for an example, Ameyaw et al. (2017) emphasise the existence of an enabling policy and legal framework; and sound legal basis (Wibowo and Alfen, 2015). While, government policies are the main predictor to PPPs implementation in Yemen (Al-shareem and Yusof, 2015); government guarantees, a favourable legal framework, political support and stability (Alteneiji et al., 2019); favourable existing legal framework and policy (Osei-Kyei and Chan 2017 (a)); the importance of government guarantee and experience, and favourable legal and political support as the components of government capability for the success of PPP highway projects in the operation stage; legislative frameworks that support quick and transparent decision making (Zangoueinezhad and Azar, 2014).

Table 12: Critical success factors: accessing project finance (the financing attribute)

Critical Success Factor – Financing Attribute	SI
The Inflation rate	0.89
Currency exchange rate	0.89
High equity to debt ratio	0.83

The factors that respondents considered to be critical under the financing attribute are shown in Table 12. The inflation rate affects the cost of money as it affects interest rates. The currency exchange rate is significant, especially in cases where lending is done in a different currency to the local one. The availability of foreign currency as well as the exchange rate is significant in reviewing the viability of the project and ultimately ability to borrow project finance.

Table 13: Critical success factors (the political and economic attributes)

Critical Success Factor – Political and Economic Attributes	SI
The political and economic stability of the country	0.92
An Effective market for the project outputs	0.88
The Social acceptability of the project	0.82

There were three factors found to be critical for accessing project finance under the political and economic attribute. The most significant of the factors was the political and economic stability of the country. This is expected as the level of certainty or uncertainty in a country usually rests on these two factors. This is consistent with the literature; for example, Ameyaw et al. (2017) emphasised the importance of political commitment from elected leaders toward PPPs. Studies by Sharma (2012) show that macroeconomic stability, quality of regulation and governance are important factors in determining PPP in the infrastructure. While, Wibowo and Alfen (2015) emphasised the importance of clearly defined mechanisms of PPP needs and strong political support; Al-shareem and Yusof (2015) emphasised the importance of market readiness and environmental uncertainty; political support and stability (Alteneiji et al., 2019); political support and acceptability for PPPs, positive government attitude towards private sector investments (Osei-Kyei and Chan, 2017 (a)); and stable macro-economic environment (Ahmadabadi and Heravi, 2019).

Table 14: Critical success factors (the Special Purpose Vehicle attribute)

Critical Success Factor – Special Purpose Vehicle Attribute	SI
The Resources available in the project company	0.83
The level of project management experience	0.83
The level of Management skills in the project company	0.83
The Reputation of the project company	0.82
The Financial strength of the company	0.82
The legal structure of the project company	0.80
The Quality of subcontractors	0.80
Familiarity with industry and client	0.75
The Size of the company	0.72
Existence of Special Purpose Vehicle	0.72

There were ten factors under the SPV attribute that were found to be critical in the ability to access project finance in Zimbabwe. It is interesting to note that although considered significant, the existence of an SPV ranks lowly compared to other factors under the SPV attribute. It may be because many of the respondents are from organizations where the use of SPV is very limited or not done at all, for instance, local authorities and parastatals.

5. Limitations of the research

The size of the sample in this study was a major limitation. The participants who completed the questionnaires were chosen by the organizations approached. The researchers did not have an in-depth knowledge of these participants only the information about themselves that they provided on the questionnaire. This is a limitation in that it assumes competence in project finance that may not be at the level of expert. The Cronbach alpha values for interrater reliability for aggregate project attributes, political and economic attributes were questionable. As a result, some of the factors under the said attributes were not included in the conclusions. However, these factors are critical, and their exclusion diminishes the value of this study.

Several factors that ranked high on the significance index were not considered in the conclusions because they failed the interrater reliability test. There is a need to investigate these factors with a different group of experts to avoid the study being affected by history. The size of the sample must also be expanded to achieve a higher level of representativeness than achieved in the current study.

6. Conclusions

The economic condition in developing countries is an important factor in the ability to access project finance. The results of this study confirmed this. Macroeconomic conditions within a country determine the inflation rate, interest rates and other economic factors which have a direct bearing on lending and investments in that country. This study also concluded that the legal environment of a country has a bearing on access to project finance. Investors and lenders prefer to go to countries where there is a strong legal framework that is enforced. The respondents in this study agreed that this was an important factor in accessing project finance. While the legal systems in Zimbabwe are sound, they are not always applied consistently to provide confidence in their impartiality. Almost all the factors investigated in this study regarding access to project finance were found to be important. However, some of the factors could not be included in the conclusions to this study because of the poor interrater reliability values. The developing countries, as represented by Zimbabwe, have a huge potential to improve their economies and the well-being of their citizens. Infrastructure is an enabler in this endeavour, and all efforts must be made for its provision. A total of 33 factors under five attributes were identified: governmental, financing, project, special purpose vehicle, and politics and economics were identified as being critical for accessing project finance. These factors were ranked according to their significance index or importance. Only 12 factors were considered as extremely important as critical success factors for project financing in Zimbabwe.

The critical success factors list will assist governments in determining what the private sector requires before participating in government infrastructure projects. These factors will also assist financial institutions in making financial decisions when investing in public infrastructure projects.

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