

# **Risk Analysis and Management in Public Private Partnerships of Urban Markets in Lusaka, Zambia**

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## **Abstract**

It has been argued that constructing urban markets through the use of Public Private Partnerships (PPPs) allows for quality provision of urban infrastructure at relatively affordable cost in rentals to the public. However, this is not the case in Zambia, despite existing policies, PPP Act and Framework, the country still faces challenges in managing Chachacha and Luburma public markets in Lusaka District. This study aimed at establishing the causes of poor delivery of urban market projects procured using PPP arrangements. The study used an exploratory research design through a mixed method approach in which in-depth interviews and questionnaires were used to collect primary data from 59 respondents. Findings disclosed that the causes of poor delivery are centred on project structuring. The study concluded that poor delivery was due to inexperience in PPP structuring which impacted risk assessments and allocation. Economic and financial risks were ranked at the very top after political interference, poor contract management, inexperience and poor negotiation as the key reasons why the delivery of public markets have been poor. The study proposed a risk management model and recommended it to be adopted for future urban market project delivery with PPPs agreements.

## **Keywords**

Delivery, Risk Analysis, Management, Public Private Partnerships, Urban Markets

## **1. Introduction**

At global level, public private partnerships (PPPs) are a popular model through which infrastructure is developed since the early 1990s. The Project Management Institute (PMBOK) (2017) opines that the need for sustainable development and effective service delivery has always been at the top of the agenda of all governments around the world. In most developing countries, issues of poor infrastructure and lack of requisite infrastructure has been a major impediment to sustainable development and effective service delivery (World Bank, 2017). A number of countries in developed economies, such as Australia, Canada, USA, and the UK, developing economies and middle-income countries from Africa, Asia, and Eastern Europe have procured infrastructure through the use of the PPP schemes (PMBOK, 2017). Transactions made through PPPs are usually very complex, and extensive, of which they require due diligence by both Contracting Authorities and private parties before concluding a PPP Contract (World Bank, 2017). Most PPPs have

been proposed as one of the major solutions to this infrastructure gap and as the best response to a variety of challenges being faced by many African countries. For instance, Loxley (2013) stated that “organisations like the African Union (AU), United Nations Economic Commission for Africa (UNECA) and the African Development Bank (AfDB) have all validated the use of PPPs, prompted by technical and financial support from the World Bank and International Monetary Fund (IMF).” Therefore, PPPs are seen as common tools to provide public infrastructure and services in Africa and the world at large.

However, Zambia’s rapid urbanisation has brought about huge development challenges that encroach on economic and human development leading to degradation of the environment, according to the Seventh National Development Plan (7<sup>th</sup> NDP) developed in 2017. As the pressure on the current urban infrastructure increases, more pressure is expected on local governments in urban Zambia to support the growing infrastructure gap. It is important to note that Government cannot single-handedly close this gap given the country’s current economic status and the financial requirement needed to develop the infrastructure. Also, the use of traditional procurement methods would not be affordable both for the Government (construction and maintenance) and public users (rentals). Additionally, implementing urban markets using PPPs allows for quality provision of urban infrastructure at relatively affordable cost in rentals to the public (Mambwe, et al., 2020). While risk allocation is one of the key critical success factors for successful PPPs, it plays a major role in creating an enabling environment for the successful use of PPPs in building urban markets (Kalemba, 2011).

The Zambian Government has encountered challenges in infrastructure development and public service delivery which poses constraints on economic growth and development of the country (Mweemba, 2015). Despite enacting the PPP Act No. 14 of 2009 in Zambia, which is now read together with the amended Act No. 9 of 2018, there are still very few PPPs that have been implemented effectively (Mweemba, 2015; Mambwe, et al., 2020). The two public markets that operate under Build Operate and Transfer (BOT) (Luburma and Chachacha Market) have suffered many controversies. Hence, the need for a study to establish the causes of poor delivery of the public markets delivered through PPP procurement method in Zambia.

This research seeks to develop an operational risk management model which can be utilised in future to specifically operate PPPs for public markets as part of closing the large and growing infrastructure gap. The research explores how critical success factors surrounding PPPs for urban markets can be weaved into a model that works with urban infrastructure development. The study analysed risks inherent in PPPs for public markets and developed an operational model that can be used to procure public markets using PPP procurement methods. It was primarily based on three (3) specific objectives which were: establishing the causes of poor delivery of the public markets delivered through PPP procurement method in Zambia; identifying risks surrounding the ineffective delivery of PPP projects in the Zambian public market infrastructure; investigating the effects of risks on PPP public market projects; and developing a risk management model which can be used in the procurement of public markets in Zambia.

Therefore, the results of the study will be significant to all PPP implementing units that include the Zambian PPP Department, the local authorities, PPP sponsors at local and international level, and the private sector. The study will offer practical ways of meeting the challenges of infrastructure gaps for a country whose government is unable to meet the demands of urbanization and other infrastructure needs. This study will contribute to the current Zambian PPP Framework by providing specific recommendation on ways to attain success when procuring public markets infrastructure using a risk management model. The study will add value to the existing body of knowledge in risk assessment and procurement of social infrastructure such as markets procured using PPPs. With the above aim and objectives, the paper is divided into literature review, methods and an overview of the case study, analyses data, validation of findings, conclusion and recommendations.

## **2. Literature Review**

Several institutions and researchers have come up with different definitions of PPPs as there is no standard definition that exist. According to the World Bank (2018) a PPP is "a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk management responsibility, and remuneration linked to performance". In this definition, it is clear that the private sector is responsible for both performance and a significant amount of risk. However, Chan et al. (2009), defines PPPs by stating that “different countries have their own varying experiences with PPP projects such that scholars have argued

in favour of assessing PPP projects on a country-specific basis in lieu of extrapolating results to develop global models.” In this study, a PPP has been defined as “an agreement or partnership between a public and a private entity to deliver infrastructure projects that are traditionally the Government’s responsibility but are now provided for by the private entity”. This is done under a set of conditions from the onset, entailing that risks are transferred to the entity that is best able to handle them. Further, accountability to end users still remain with governments.

However, there is more than one way to in which PPPs are developed and implemented. The Chartered Institute of Purchasing and Supply (CIPS) (2013) in their reported stated that “Each project is unique, with endless possibilities for creativity, so public authorities should not feel boxed-in by narrowly defined contract types”. According to the PPP Reference Guide (2017), there is no standard single ‘model’ PPP framework that exist. Meaning that there’s not one particular structure that can be prescribed for PPPs to use while its models are dependent of the factors yielded in a country at the time of development. Frameworks evolve overtime, often as a response to specific challenges facing a PPP program. Kalembe (2011) asserts that factors that define a good model include asset ownership, assumption of risks, responsibility of investment and contract duration. The African Development Bank (2008) furthered that models, elements such as service contracts, management contracts, leases, joint ventures, build-operate-transfer or design build-operate, concessions and divestiture/privatization are important in the development of a model good PPP model. This model involves the complete transfer of infrastructure or asset to the private developing entity. However, this model was found to be unfavourable by Mweemba (2015).

Additionally, Gichio (2014) proposed a more traditional PPP procurement model which encompassed capital and operating costs as risks borne by the public sector. However, Mambwe et al. (2020) argues that there are also negative aspects related to the financial possibilities provided by the PPP due to the long-term liabilities that have impact on the public budget and can threaten public finance. Nonetheless, countries like the Philippines have utilized PPP models to implement urban infrastructure much to the benefit of its growing population. The Philippine Government has since 1990, utilized PPP agreements to build urban markets. For example, the Mandaluyong City Market PPP project, implemented by the local government in Philippines is a 40year long PPP project (1994 to 2034) operating under Build-Operate-Transfer (BOT) PPP model (Ngoma, 2015). Using a PPP model ensured quality urban infrastructure which could stand the test of time and support the growing urban population.

### **Critical Success Factors**

The success of PPP projects is a crucial objective of both the private and public organizations. According to Samir & Maher (2018), “the completion of a project on time, within budget, in accordance with specification and with stakeholder approval is seen as a success.” This makes it significant to assess success factors for PPP projects being implemented. These factors can be independent and different from project to project. Osei-Kyei and Chan (2015) mentioned that formulating success factors for PPP projects is attributed to the increase in interest to do world-wide. Gichio (2014) added that the success of a project is established by the dimensions measured to be efficient when executed correctly and efficiently (with right actions). This was argued by Osei-Kyei and Chan (2018) that for critical success factors to be identified, issues of risk allocation and sharing, strong consortium between private and public sector, political support, community/public support and transparent procurement should be considered. These critical factors ensure that PPPs produce quality structures that can stand the test of time with lessons being considered.

Mambwe et al. (2020) postulated that infrastructure quality is very important and the most critical factor that determines attraction and retain investment, and high-quality workforce. With this in mind, it can be inferred that the quality of infrastructure for urban development can be obtained if the critical success factors for PPPs are prioritized. In Nigeria, Babatunde et al. (2012) conducted a study involving the execution of PPP projects, and they recommended that both public and private parties should consider attaining successful implementation of infrastructural projects using PPPs through the achievement of optimum objectives of the partnership arrangement. From these studies and literature reviewed, the study concluded on nine critical success factors that would as constructs: Comprehensive economic policy; Proper risk allocation and risk sharing; Favourable framework; Competitive procurement process; Thorough assessment of the cost and benefits; Political will; Firm macroeconomic condition; and Suitable financial market.

### **Risks and Challenges of Public Private Partnerships Project Implementation**

At global level, PPPs are a popular model through which infrastructure is delivered since the early 1990s. Further, the lack of traditional sources of revenue like taxes and loans to finance the infrastructure gap has compelled many Governments to get attracted to PPPs so as to meet the large and growing infrastructure burden. Governments are constrained by their overall fiscal position in many parts of the world. Samir and Maher (2018) and Ali (2011) mentioned that the weakness in the overall credit quality of projects is a fiscal problem which is highly a limitation to allowing private sector participation in service delivery in urban areas. Additionally, several PPP projects have encountered a number of bottlenecks, and according to Eurodad (2018) most PPPs are delivered with poor results and without public interest. This related to the conclusion they made after reviewing ten different PPPs in four continents. One of the examples they made was the Indonesia PPP contract of 1998 which took and took 25 years French and British multinationals. Nonetheless, the Eurodad (2018) and World Bank (2017) argued that the partnerships in most PPP contracts lack transparency and accountability starting from the onset of the project. They further mentioned that there is also inadequate or poor access to financial records with most consortiums that result in major losses (Eurodad, 2018; World Bank, 2017).

In the study by Samir and Mahar (2018), they mentioned that even though Egypt is considered a leader in PPP delivery in the Middle East and North Africa (MENA) region, it has experienced failed or poorly delivered PPPs such as the poor model used at El Alamain Airport which resulted in severe losses due to poor management, barriers on the side of government authorities that let to lags in project accomplishment. However, other similar projects like the Mandaluyong City Market in the Philippines have worked out well due to transparent management of the principal-agent relationship (Mambwe, et al., 2020). Ngoma (2015) identified five factors that pose as hindrances to critical success factors are, Economic: macro institutional conditions like high interest rates; lack of financing options like loans or sources of capital; Political: opposition from people with vested interest and affected stakeholders; Technical: lack of enough expertise in design or operation of a market, trading centre or shopping centre Social/Cultural: general lack of trust of people in government decision making positions and Legal/Institutional: lack of support from legal institutions or bodies.

Van Dooren, et al. (2015) contributed that the success of a PPP project is to a large extent influenced by the degree to which various project risks are identified, assessed and allocated. Thus, performance of PPP projects heavily depends on being able to identify where the risks lie and then creating a plan for them. This was asserted by Carbonara et. al. (2011) and added that there are high risks associated with PPP projects that relate to economic, political, social and cultural environments within which the projects are being implemented. However, Awodele (2012) argued that factors such as high developmental efforts and upfront costs, long term loans, political and economic risks, high development efforts and upfront costs, inadequate market value of security packages, and non-recourse/off-balance financing, affect the success of a PPP project.

### **The Zambian Case of the Public Private Partnerships**

Prior to the promulgation of the PPP Act No. 14 of 2009, Zambia had signed four (4) PPP agreements, namely the Kasumbalesa Border Post, Mpulungu Harbour, Railways Systems of Zambia and Luburma Market (popularly known as Kamwala Market). Three of these were cancelled with the exception of the Luburma Market, set to run for 65 years. (Zambia Development Agency, 2014). The Act provided for a framework which later had to be amended, justifying that there was no need for a single PPP Framework or structure that can be used for different types of PPPs. Zambia, which is relatively new to PPPs had signed four PPPs before the enactment of the PPP Act in 2009 (Kalemba, 2011). Three of those projects were cancelled, leaving the Luburma Market which has had its own controversies to date. Additionally, another PPP in Zambia between the Lusaka City Council and China Hainan, that is a private entity, has not worked well due to poor arrangement, lack of contract monitoring and output specifications (Mweemba, 2015). Nonetheless, despite setting up a supervisory committee by Lusaka City Council, project monitoring was not conducted except timed inspections, according to Kalemba (2011). Furthermore, no consultants were engaged to monitor the project delivery process.

The Luburma Market was built using a PPP model because the local authority needed to upgrade an old market that comprised dilapidated, incomplete and poorly designed structures made of concrete, plastic paper and tents; and was heavily congested (Mweemba, 2015). According to Mambwe et al. (2020) most infrastructure markets lack basic amenities such as clean water, drainage causing a safety hazard with frequent loss of property due to fire outbreaks resulting from illegal electrical power connections. However, the PPP model was not properly handled as has the

65year Luburma Market project has since seen legal issues according to Ngoma (2015). These disparities can therefore be used as checks and balances for any future urban markets with the PPP. Hence, the major gap in the study is the need for developing a risk management structure appropriate and specific to the local situation. Additionally, there is need for a detailed customized structure with financial instruments and contracts that meet specific requirements for individual PPPs since each project is unique by considering that critical success factors.

### 3. Methods

The research methodology used in the study was a mixed methods approach using the concurrent exploratory research design. The motivation for choosing mixed methods was based on the significance of the study and nature of the research questions according to Creswell (2014). Both primary and secondary data was collected for the study. Interviews targeted a total of 15 key informants and were first conducted to inform themes according to Ritchie and Lewis (2012). The sample population for this study composed of professionals who were sampled from four strands, namely Contractors, Consultants, Government officials and Concessionaires. The professionals who took part in the interview study were drawn from categories namely; Government Ministries and Departments, Private Consultants, Contractors and Concessionaires with more than five years' experience working within PPPs in Zambia.

The 5-point Likert scale, self-administered questionnaire was used to enable respondents provide the appropriate solution to the questions raised. It was developed to collect quantitative data which followed a stratified random sampling technique to determine the sample size and respondents. Kombo and Tromp (2013) defines stratified sampling as involving segmenting a population into subgroups that are homogenous in nature through the selection of a simple random sample from each group. The questionnaire was distributed to sampled Contractors (35), Consultants (15), Concessionaires (5) and Government Officials (15) indicating a population of 70 professionals from four strands. The sample size was calculated using the Slovens's Formula:

$$n = N / [1 + N (e)^2] \quad \text{Equation 1}$$

Where n =Sample size, N =Population size, e = Margin of error. Thus, N = 70; e = 5% with 95% confidence level, give a sample size of 59 respondents. The sample stratification was: Contractors (30); Consultants (13); Concessionaires (3) and Government Officials (13). Reliability Test prior to distribution to the study respondents was done for the questionnaire was tested for internal reliability. A validity test was conducted using a pilot study where five respondents answered the questionnaire and gave feedback on clarity of some questions.

Quantitative data was analysed using Statistical Package for Social Sciences (SPSS) version 26.0 and Microsoft Excel for descriptive analysis. On the other hand, Analytical Hierarchy Framework (AHP) was used to analyse the qualitative data. The process of AHP includes making decisions based on the criteria of identifying the decision, making pairwise comparison, and calculating the important weight of each opinion (Jagoda, et al., 2020). The method helps in making decisions when there is no clear and best choice through linear algebra for assessment. The higher the weight allocated to a factor, the more important the factor is to the overall criterion. The study considered specific key factors as variables; risk management process and public private partnerships; and challenges around the effective implementation of PPP projects in Zambia.

### 4. Results

Out of a total of the 15 targeted organisations, only 11 participated, giving a response rate of 73% in terms of organisational coverage, which was used by the researcher and was considered credible for further analysis in line with Tashakkori and Creswell (2007) who stated that a response rate of over 70% is acceptable. Out of these, six (6) represented 54.5% from the public sector and 45.5% represented the private sector.

#### 4.1 Interview Results

The data analysis for the interviews carried out was based on the first two research questions on the causes of poor delivery of public markets infrastructure PPP projects, and the risks surrounding ineffective delivery of PPP projects in Zambian public market infrastructure. The following are findings to the study.

#### 4.1.1 Cause of Poor Delivery of Public Privat Partnerships in Markets

The interviewees were asked questions regarding what, in their opinion, caused poor delivery of projects through PPP model in urban markets and social infrastructure in general. Below are some of the main issues that came out:

**Poor Project Negotiation** – All interviewees agreed that most project negotiation form a key element in the future of the concession agreement. If this was not done with technical knowledge, confidence and tact, problems were bound to arise throughout the life of the project. Such confidence would only come from a well vested and strong team.

**Poor Contract Management** - The interviewees also revealed that the Luburma and Chachacha markets experience poor project monitoring despite the contract having a provision for review every 10 years. Most respondents said: *“Although attempts have been made by the local authority to have a review of the concession agreement of the Luburma and Chachacha market, it has not been successful.”* This shows a lack of transparency or information sharing by the private party as there are no reports that show how much money has been recouped since the projects commenced in 2000 and 2002 respectively.

**Weak Regulatory Framework due to inexperience with PPPs** - It was confirmed in the interviews that PPP projects that have been implemented so far, have allowed the private parties to have an upper hand. On the other hand, other interviewees mentioned that there is not enough experience to ensure the success in PPP projects.

**Political interference on projects** - Politics play an important role in project execution. The study revealed that politics, whether influencing a positive change or disregarding PPP principles, has a significant role to play in the performance of a project. In essence, there has to be a political will prevailing for any project to be supported. The PPPs by nature, span over decades, leaving room for change in political power and administrations.

#### 4.1.2 Risks Surrounding ineffective delivery of PPP projects in Zambia

The results based on objective which sought to identify risks surrounding the ineffective delivery of PPP projects in the Zambian public market infrastructure, are presented below as follows:

**Political Risks** - The interviewees acknowledged the important role politics play in urban markets, let alone, market projects delivered under PPPs. This is because *“PPP’s by nature are long term agreements, whose biggest risks are changes in government which lead to potential changes in regulations”*. The long tenure of PPPs exposes them to different kinds of political and economic risks. Further, it is very clear that any government of the day have influence on how smoothly PPPs run.

**Stakeholder Risks** - Interviewees agreed that stakeholders have the potential to sabotage a project or make a project success, therefore they must be engaged throughout the project. This is true especially that PPPs extend over decades and stakeholder engagement need to be ongoing from the start of the project to the end.

**Operations and Maintenance Risks** - Operations and maintenance of market facilities were also recognised as one of the risks that markets delivered through PPPs experience. The Luburma market for example, was left to the concessionaire to figure out the operation of the project. Although the local authority was responsible for a portion of the market, a large part of the market was left to the private party to manage.

**Economic and Financial Risks** - From the findings, economic and financial risks are the most sever of the risks for any project. Project financiers have reasons to be concerned because the inflation rate at the time of the study in Zambia is 16.0% on average from 7.6% in 2019 (Trade Economics, 2020). Figure 1 shows the 2020 inflation rate patterns that affect the delivery of infrastructure.

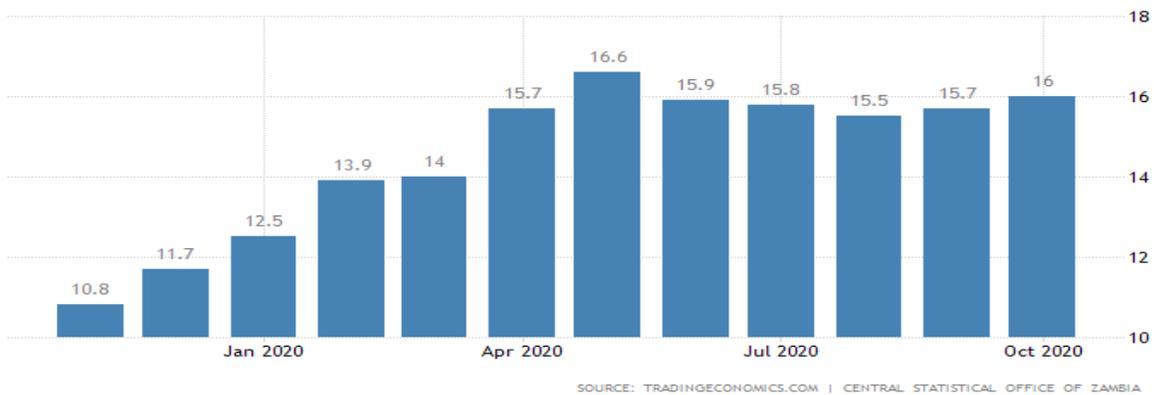


Figure 1. Inflation rate patterns according to Trade Economics (2020)

With such high inflation rates, bidders for PPP projects in most cases incorporate the inflation rate exposure into their financial models to hedge against effects of inflation on operational expenses such as maintenance, and administrative costs which is unlikely good value for money when assessed by the public sector. The interviews also revealed that exchange rate risk is another source of concern. This was attributed to long periods of PPPs implementation and operation, of which the private party face high economic and financial risks. This can also be seen in the recent trends of the Zambian exchange rate between 2018 and 2019, as shown in Figure 2. However, the exchange to the United States Dollar (US\$) spiked to 21.01 as at November 2020 (Trade Economics, 2020).



Figure 2. The ZMW-USD Exchange rate pattern in Zambia according to Trade Economics (2019)

Between January 2018 and May 2019, rates averaged ZMW11.35 to \$1.00 Figure 2 shows the exchange rates movements from January 2018 to May 2019 which indicates some instability between September and Oct 2018 and in the month of May 2019.

## 4.2 Questionnaire Survey

The data analysis for the questionnaire survey was grounded on the research objective, to establish the effects of risks identified on PPPs delivered on market projects. Respondents to the questionnaire were from government departments, concessionaires, consultants and contractors and on PPP projects. From the data collected, 51% of the population worked for the government, 25% for contractors, 19% for consulting firms, and 5% for concessionaires.

### 4.2.1 Reliability Test of Results

For the questionnaire survey, the researcher conducted Reliability Test prior to distribution to the study respondents. The reliability of the 5-point Likert scale used in the survey questionnaire was tested for internal reliability. The Cronbach's Alpha coefficient was adopted in this study. According to Siegel and Castellan (1988), they opined that

values of *alpha* which equals 0.7, i.e.,  $\alpha = 0.7$ , are an acceptable indication of the reliability of the scale.” Therefore, based on the aforementioned, a value 0.7458 relating to 74.60% was attained, confirming the reliability of the scale.

#### 4.2.2 Statistical analysis of risks and their effects

Twenty-four (24) possible exogenous risk factors in PPPs were identified from literature of which 23 were identified as being applicable to Zambia, during interviews. These were compiled in the questionnaire survey. Further, 42 possible endogenous risk factors in PPP were identified in literature of which 38 were identified as being applicable to Zambia. These were also analysed and then grouped into key areas. The exogenous risks were averaged with results indicated in Table 1 which shows that economic and financial risks (14.34) had the most effect followed by political risks (11.49). The least of the risk category were general risks that include corruption and lack of law, environmental and geotechnical conditions, and force majeure.

Table 1. Mean  $[(\sum x_i) / n]$  summary of the results from the surveyed exogenous risks

Risk category	Mean of P*I (or Effect)	Mean Significance ( $\sqrt{P*I}$ )	Overall Rank (out of 5)
Economic and Financial Risks	14.34	3.78	1
Political Risk	11.49	3.38	2
Regulatory Risks	9.97	3.15	3
Stakeholder Risks	9.41	3.06	4
General Risks	9.02	3.00	5

#### 4.2.3 Investigation of effects of risks identified on PPPs delivered on market projects

The questionnaire survey sought to respond to the above-mentioned research question. Table 2 shows that economic and financial risks had the most significant effect on PPPs delivery on market projects, these two risks affect PPP financial structuring, especially that funding for most PPP projects is sourced outside the domestic market. With respect to the mean results for economic and financial risks, it can be interpreted as being very risky for projects to invest in local capital markets.

Table 2. Overall mean effect of PPP risks in Zambia

Endogenous risks	Mean of P*I (or Effect)	Mean Significance ( $\sqrt{P*I}$ )	Overall Rank (out of 9)
Economic and Financial Risk	14.34	3.78	1
Sponsor Risks	13.48	3.67	2
Construction and Completion Risks	13.04	3.61	3
Operation and Maintenance Risks	12.40	3.52	4
Project Development Risks	11.80	3.40	5
Political Risks	11.49	3.38	6
Regulatory Risks	9.97	3.15	7
Stakeholder Risks	9.41	3.06	8
General Risks	9.02	3.00	9
Average Effect	11.66		

Based on the mean scores tabulated in Table 2, sponsor risks were ranked second in terms of having a serious effect on PPPs, while construction and completion risks were ranked third, and operation and maintenance risks were ranked fourth. Additionally, project development risks; political risks; regulatory risks; stakeholder risks and general risks were also identified as risks affecting PPPs delivered on market projects. The aforementioned former risk, i.e. project development risks ranked 5th and the aforementioned latter risk, i.e. general risks ranked 9th in terms of their effect on PPPs delivered on market projects. The study findings unveiled that Economic and financial risks ranked at the very top of the list. The risk factors with the least effect mean average score were the general risks (corruption, environment, geotechnical conditions and force majeure). All the above findings were matched with what is prevailing on the national, regional and global scene which gave the researcher confidence that the findings were reliable.

## 5. Validation

One of the objectives of the study was to establish the causes of poor delivery of the public markets delivered through PPP procurement method in Zambia. Based on the results, it can be deduced that the causes of poor delivery are centred on project structuring. However, political interference, poor contract management, inexperience with PPPs and poor negotiation were revealed as the key reasons why the delivery of public markets has been poor.

Other studies attested to these findings as confirmed in other studies in Asia by (Eurodad, 2018) and in African countries by (Samir & Maher, 2018). For a PPP to work well, there is need for a political will to not only exist but be strong, hence making it easy for optimum objectives to be reached. Political systems have a way of dictating the overall atmosphere with such social infrastructure projects as markets, which the study confirmed at political facilities. The terms and conditions of the concession agreement were also found to be very imperative. If there is no independent contract manager on a PPP, this spurs into issues like mismanagement and no checks and balances. For a long-term business relationship to be sustained, this critical success factor of transparency and accountability is required as asserted by Mambwe et al. (2020). Further both parties rarely and require to start keeping proper records of deliberations in order to have a reference point each time the parties engage. This research has highlighted how this important factor has been left without much consideration and therefore contributing to poor delivery of such projects.

The research also verified that despite the enactment of a PPP policy and Act of 2009, which was amended in 2018, the regulatory framework in Zambia is still weak. Personnel with experience in structuring PPPs and working on similar projects are insufficient. The study also sought to identify risks surrounding the ineffective delivery of PPP projects in the Zambian public market infrastructure. In terms of risk identification, the research revealed that every type of project has inherent risk factors but PPP projects in particular have more risks due to the number of stakeholders involved. From the literature reviewed, such as by Eurobad (2018) and Awodele (2012), risks were found to either be internal or external and yet they pose threats to the success of the market projects. The structured interviews also revealed that political risks, stakeholder risks, operations and maintenance risks and economic and financial risks are the main risks responsible for ineffective delivery of market projects procured using PPP method. These findings are agreeing with current PPP landscape in Zambia and the region, giving this research authentic stance on discoveries made (Mweemba, 2015).

In terms of the objective which sought to investigate the effects of risks on PPP public market projects, Economic and financial risks ranked at the very top of the list of the risks. The risk factors with the least effect and attained an average score include general risks (corruption, environment, geotechnical conditions and force majeure). All the findings were matched with what is prevailing on the national, regional and global scene which gave the researcher confidence that the findings were reliable. Lastly, the study sought to develop a risk management model which can be used in the procurement of public markets in Zambia. The assumption was that when risks inherent in urban market projects are adequately identified and managed, more of such facilities could be developed successfully using PPP procurement method. This would promote economic growth and national development which could add to the country's 2030 development goals and the regional goals like the 2063 Agenda (African Union) and the sustainable development goals (SDGs).

### 5.1 Developing a risk management model for the procurement of public markets in Zambia

In developing a risk management model, the study utilised findings from three research strands namely, the literature review, conceptual and theoretical analysis, the qualitative findings and quantitative findings. The model that the study developed was based on the systems theory of the 1950s. According to Andrew (1999), players in the agreement of a PPP must envision a broader picture of ongoing relationships in the PPP being implemented. Therefore, this model insists on having teams at every stage of the project, monitoring for risks and updating the risk register until asset transfer date.

The proposed risk management model is poised to enhance PPP project planning, implementation and monitoring for urban markets. The model also suggests processes that could be used to implement PPP projects within the urban market industry. It also suggests a path for future studies as illustrated in Figure 3.

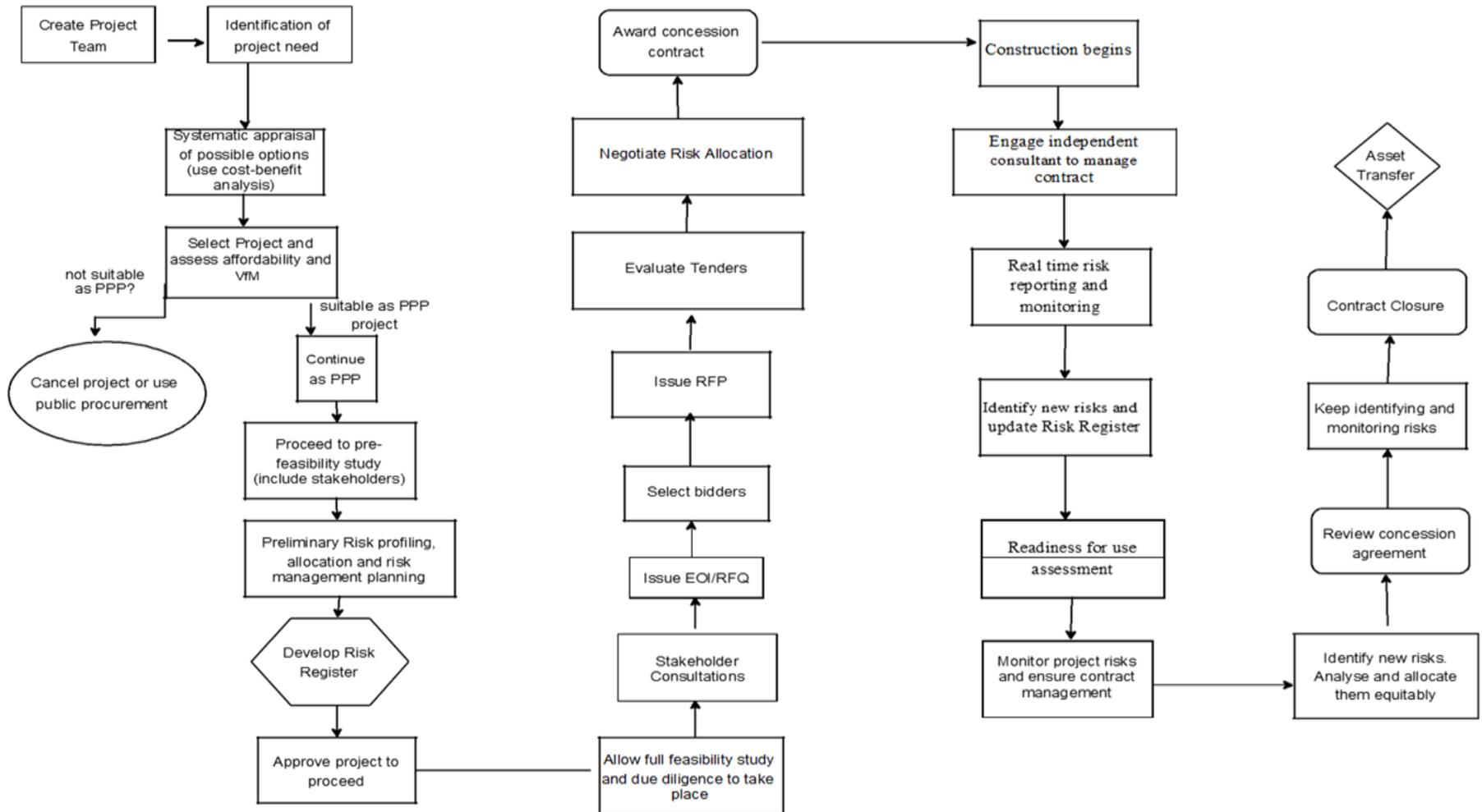


Figure 3. Proposed Risk Management Model for the Procurement of Public m=Markets in Zambia

## 6. Conclusion and Recommendation

The purpose of the study was to establish the causes of the poor delivery of urban market projects procured using PPP arrangements. The research findings disclosed that the causes of poor delivery are centred on project structuring, political interference, poor contract management, inexperience with PPPs and poor negotiation were revealed as the key reasons why the delivery of public markets has been poor. The research also verified that despite the enactment of a PPP policy and Act in 2009, which was amended in 2018, the regulatory framework in Zambia is still weak. All the findings matched with what is prevailing on the national, regional and global scene which gave the researcher confidence that the findings were reliable.

Given the findings of this study, it is recommended that decision makers should adopt as a way ameliorating identified problems discussed in this research through the creation of an enabling regulatory environment that will make risks inherent in PPP projects become much more threatening to project success. Additionally, systematic training and development is required to capacity building of professionals in managing PPP projects during implementation. The adoption of the proposed risk management model is poised to enhance PPP project planning, implementation and monitoring for urban markets, as it suggests processes that could be used to implement PPP projects within the urban market industry. The proposed model was validated through interviews. The study limitations include concessionaires who have been involved in PPP projects that have been poorly delivered did not show willingness to share their experience; and most departments had inadequate experience working with PPPs.

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