

# Evaluation of Public Private Partnership Strategies on Concession Performance: Case of Rift Valley Railways Concession, Kenya.

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## ABSTRACT

Nations worldwide face fiscal constraints resulting to infrastructure deficits. Kenya, like most of others has increasingly turned to PPP to cover infrastructure gap. PPPs encourage private initiative and benefit from the involvement of the private sector particularly in the designing, building, financing, operating and maintenance of infrastructure projects. Different types of PPPs have been practiced in worldwide infrastructure development with diverse results and a variety of problems have been encountered. As an urgent need to establish the strategies best suited to improve practices in future PPP projects and the performance of existing ones, as an important step toward the development of such a protocol this study set out to evaluate the PPP strategies deemed to have the highest impact on SSA railways on the performance of RVR concession in Kenya. It is based on Johnson and Scholes (1993) model of strategy evaluation i.e. suitability, acceptability and feasibility. The package contained four strategies; namely, Risk Allocation Strategy, Sound Finance Strategy, Strong Consortium Strategy and Technology Strategy. By employing descriptive research design, the study survey realized response rate was 76% and deemed viable for analysis. Mean score ranking gave the strategies in the following order of importance in their effect on RVR concession; (1) Strong Consortium Strategy (2) Sound Finance Strategy (3) Risk Allocation Strategy and (4) Technology Strategy. Cronbach's Alpha was 0.875, suggesting that the test scores had relatively high internal consistency and therefore reliable.

**Key Words:** Public Private Partnership Strategies, Concession Performance, Rift Valley Railways.

## 1.0 Background Information

Governments are faced by an increasing need to find sufficient funds to develop and maintain infrastructure. Growing populations bring about a host of challenges such as increasing urbanization, rehabilitation requirements of aging infrastructure, the need to expand networks to new populations, and the goal of reaching previously unserved or underserved areas. In light of that, many economies are turning to off-balance-sheet financing, bringing the public and private sectors together, not only to control budgetary expenditure but also to pool these two sectors' specific know-how (Alinaitwe and Ayesiga, 2013; Broadbent and Laughlin, 2009). According to Checherita and Gifford (2007), this form of cooperation is commonly referred to as Public Private Partnership (PPP).

The major challenge for many countries has been that service provision cannot be met by government alone. The increasing involvement of the private sector is also part of the more general change over the last decade from public administration to the New Public Management (NPM). Batran, et al (2005) observed that PPPs made governments change direct role of the state in the economy to one of organizer, regulator and controller of economic activities. Hall (2008); Hodge and Greve (2005) noted that PPPs were increasingly used to provide public facilities and services, especially by state governments in the western world.

PPPs are about promoting authority-led initiatives that encourage commercial investment in facilities and services, giving the public better value for money and transferring significant risk and the management of projects and services to the private sector (Hodges and Mellett, 2004). The level of private involvement ranges from simple service provisions without recourse to full private ownership and operation of public facilities and their associate services, done through service contract, leasing, joint ventures, concession, and privatization (Hardcastle et al, 2005)

Reviewed PPP literature has revealed three broad arguments in favor of PPPs exist. Firstly, Kabashkin (2010) argued that PPPs enabled the treasury to undertake public sector projects without swelling government debt or triggering the need for tax increases. Secondly, Yang Chan et al (2011) noted that PPPs provided a competitive and cost-attractive alternative to traditional public sector projects. Lastly, Zhang and Chen (2012) noted that

PPPs brought in proven project management expertise and private sector competition to public monopolies in infrastructure development and service provision and in merging the resources of both public and private sectors to better serve the public needs.

The deployment of private sector resources for public benefit is nearly as old as recorded history. Witters et al (2013) noted that in Athens in the 4th century BC, prominent citizens paid in order to stage public festivals and religious events and to build public buildings and monuments and that centuries later, when the Roman army conquered large parts of Europe and the Mediterranean region, civilians worked hand-in-hand with the army to exploit the new territories and build needed infrastructure. However, PPP as a competitive procurement policy seems to be new.

### **1.1.1 PPP Models**

The World Bank (2009) defined a concession PPP as an arrangement where a public authority grants a private party the right to design, build, finance, and operate an infrastructure asset owned by the public sector. The concession PPP contract is for a fixed period, usually 25–30 years, after which responsibility for operation reverts to the public authority. The private party recoups its investment, operating, and financing costs and its profit by a user fee. Thus a key feature is that the private party usually assumes the risk of demand for use of the asset, in addition to the risks of design, finance, construction, and operation.

According to Emmanuel (2014), concession PPP models include variants such as Build-Operate-Transfer (BOT), Build-Transfer-Operate (BTO), Build-Rehabilitate-Operate-Transfer (BRTO) and Build-Lease-Transfer (BLT). In BOT model the concessionaire bears all the operational and investment risks while government undertakes explicit and implicit contingent liabilities from loan guarantees and sub-loans provided for the financing of the project. Government retaining the ownership of the facility involves controlling the policy of the project as well as allocating risks. Revenue for the concessionaire comes from managing and marketing the facilities to users.

### **1.1.2 PPP Implementation Worldwide**

The current PPP as a model of provision of public infrastructure and services was first introduced in the United Kingdom (UK) in 1992, in the form of Private Finance Initiative (PFI) as a way of procuring public infrastructure by getting the private sector to finance, build and operate it under contracts typically lasting 25 to 30 years (Tiemann, 2003). Since its introduction, PFI seems to be the UK government's preferred method of public infrastructure procurement. Cheung, Chan and Kajewski (2012) reported that PFI accounted for between 10 to 14 per cent of Britain's total annual investment in public services. PPP has been well practiced in many developed countries.

Apart from the UK, in the European Union (EU), other nations historically have had experience with public private sector partnerships dating back to at least the 19th century. McQuaid (2008) pointed the construction of parts of the Austrian railroad network by PPP and more recently in the second half of the 20th century, key urban development projects in Germany in the 1980s. Dehornoy (2012) observed that there had been 27 PPPs in the rail sector in the EU. Nevertheless, most EU nations have been latecomers within the recent PPP-movement.

Despite infrastructure needs and private capital might, the uptake of PPP in the US has been rather dismal. In a Congressional Report, Hilst (2012) noted that private firms and government agencies jointly undertook 55 design-build projects with a value of \$50 million or more between July 1989 and June 2011. Perhaps, the biggest use of PPP model has been China (includes Hong Kong) where due to growth, better and more public facilities and services are needed. Cheung *et al* (2012) noted that the Chinese government had been keen to seek alternative methods to relieve their financial burden and that coupled with the economic opportunities foreseeable in China many international investors had been attracted to the Chinese business market.

South East Asia has also been keeping up with the developed and developing world in PPP adoption. In Malaysia, Ismail (2013) reported that the partnership agreement between local government and private sectors had existed since the mid-1980s, after The Malaysia Incorporated Policy was introduced in 1981 where the main objective to encourage cooperation between public and private sectors. The 1987 Philippine constitution explicitly acknowledged the critical role that the private sector played in the development agenda of the country (ADB, 2011). In this context, the Philippine PPP was forged as a flagship program for development.

Delivering infrastructure services through PPP has also garnered substantial pace in India. Priya and Jesintha (2011) reported that the India had initiated to operational and institutional PPP policies to promote the flow of private capital for accelerated infrastructure development in the country. Kanoria and Agarwal (2012) noted that private investment in India's PPPs was worth \$150 million between the years 2007-2012, a fraction of the India's infrastructure gap in the same period which amounted to \$500 million. In Australia, BOT project

produced the iconic Sydney Superdome. According to Jefferies (2006), the project proved how both government and private industry attempted to meet Australia's need for infrastructure in the new millennium.

The World Bank's Private Participation in Infrastructure (PPI) Project Database noted that other regions of the developing world had moved ahead of Africa in involving the private sector in infrastructure development (World Bank, 2009). According to African Public Private Partnership Network (2012), many African countries had established or were in the process of establishing the requisite legal and institutional structures to promote and manage PPPs. For instance, in April 1997, the South African Cabinet approved the appointment of a task team to develop a package of policy, legislative and institutional reforms to create an enabling environment for PPPs (Minnie, 2011).

As at 2006, PPP was at its infancy in Nigeria (Dada and Oladokun, 2012) and Nigerian Federal Government established an Infrastructure Concession and Regulatory Commission to drive the provision of infrastructure through the use of PPP (Dada and Oladokun, 2008). According to AfDB (2011), notable PPP projects in Africa were Domestic Terminal at Murtala Muhammed Airport, in Nigeria, Dar es Salaam Water Distribution in Tanzania, National Referral Hospital in Lesotho and Kenya-Uganda Railways.

The growth of African economies has only made the role of the transport sector even greater. In Sub-Saharan Africa (SSA), rails provide an indispensable means of moving mineral and agricultural products to market and are essential for opening up landlocked countries. Viard (2011) viewed that rails in SSA offered a lower cost alternative to roads and were also longer lasting and produced a lower carbon footprint, therefore becoming the only long term option. During the last 50 years, the road transport in Africa as throughout the world has expanded rapidly due to the aggressive development of the automobile industry and thus rails were neglected (Kouzmin, 2009). According to Li (2013), by 1990 most the SSA rail networks were in virtual bankruptcy, requiring cash injection and large investments in infrastructure and rolling stock.

Since mid-1990s, most of the SSA rails have been outsourced to the private sector under concession PPP agreements. Li (2013) observed that by 2013, more than 70% of the rail transport activities in SSA were being managed by concessions. Owen and Merna (2007) noted that these concessions had reduced dependency on public funds hence cementing the SSA governments' notion that PPPs was the best alternative for their ailing railway infrastructure. Mouraviev (2012) reported that the concessions solved many problems, bringing some improvement in the financial performance and stabilization of freight volumes in some countries that had been losing market share.

### 1.1.3 PPP Application and Experience in Kenya

It is anticipated that development in concomitance with globally proven practices would have the potential of anchoring a transformative impact on African economies, including that of Kenya. In this regard, Kenya began to explore more subtle alternatives for accessing private sector resources in the delivery and operation of public facilities. Ong'olo (2006), observed that as early as 1992, as part of the framework to implement the privatization a high level policy making committee was mooted in the Ministry of Finance to approve the operational guidelines for privatization.

Furthermore, in 2005, the government through *Draft Sessional Paper No 2 of 2005* on "Privatization of State Corporations and Investments", reiterated its role of being a facilitator for private sector led economic growth and investment (Republic of Kenya, 2005a). With specific reference to infrastructural development, the government highlighted that private sector investment needed to be encouraged and facilitated, not only through formal concession contracts, but also localized PPP initiatives to contribute towards road construction and repair (Republic of Kenya, 2005b).

Various attempts by both the national government and former local governments to bridge the infrastructure gap in the country are documented in the various literature. The Ministry of Finance (2012) listed the earliest PPP as the Mtwapa and Nyali Bridges Concessions signed in 1959. Others important ones listed were the Orpower-Olkaria III geothermal plant and Mumias power plant in the energy sector. The port and transport sector projects were Port of Mombasa Grain Terminal under Build Own Operate (BOO) in 1998, the JKIA Cargo Terminal of 1998 and the focus of this research the Kenya – Uganda Railways under BOT of 2006.

On local government level, the former Nairobi City Council (NCC) had over the years entered into arrangements with the private sector on provision of some services. According to Wambalaba and Khan (2013), two projects were most notable one, being the rehabilitation of public toilets and running them as SME's hence providing employment and much needed service facility for the public. Second, 'Adopt A Light' initiative which not only lit up streets in the wealthy parts of Nairobi, but also the slum areas, improving security and allowing small informal business activity to continue into the night, not to mention children studying at night under these lights.

According to PPP Unit which is mandated with assessing and approving PPP projects in the country by PPP Act, 2013, the ongoing projects as at the end of 2013 there were 7 projects under the Independent Power Producers, they are Thika Power, Triumph, Gulf Power, Orpower, Lake Turkana, Longonot and Kinangop. A National Priority List that contains all the projects that have been identified and cleared by the Cabinet, to be implemented under the PPP framework had 59 projects from different sectors of the economy as at September 2014 (PPP Unit, 2014).

Therefore, Kenya had seen PPPs as the latest forms of contractual arrangements that aimed to unlock investment potential through shared vision between interest groups, stakeholders and the public. In light of that, Kenya has enacted a law on PPPs, the Public Private Partnership Act No. 15 of 2013 that became effective in February 2013. The Act provides the new legal framework to enable the structured, methodical and staged deployment of PPPs in infrastructure development in Kenya.

#### **1.1.4 Kenya-Uganda Rail Concession**

The Kenya-Uganda rail line, linking Kenya's sea-port of Mombasa and Uganda's capital city Kampala, is the oldest and most important rail link in East Africa. The 2,350 km rail line played a key role in the early development of East Africa by serving for decades as the most important means of transport. At its peak in 1983, KR moved 4.3 million tons before a precipitous decline to a meager 1.9 million tons by the end of 2005. Like other rails of SSA, it later suffered from neglect, lack of investment and decreasing freight making the Kenyan and Ugandan governments to concession the line to Rift Valley Railways (RVR) in November 2006 (Federal Republic of Nigeria, 2012). Under the concession, the states remained the owner of the existing assets and transferred the rolling-stock responsibility for operating and maintaining the railway to RVR.

The RVR concession problems were evident within a short time. PPIAF (2010) reported that from the start, RVR had proved not to have sufficient expertise in actually running a railway operation and could not make investments or even make fee payments to the government owners reporting a loss of Ksh. 1.8 billion in 2008. This prompted lenders to withhold loans needed for more capital-intensive improvements.

By early 2009 government officials in both countries contemplated canceling the concession, prompting RVR to take action. The major shareholder Sheltam exited the consortium in Amending Deeds signed in 2010. The concession timetable for performance improvement was reset to August 25, 2010 for 25 years (AfDB, 2011). The composition of the consortium continues to change to date. *The Daily Nation, April 1<sup>st</sup>, 2014* reported that Investment firm **Trans Century** had sold its 34% stake in a deal estimated to be worth Sh5 billion to Citadel. That in turn raised the latter's stake in the railway concession to 85% leaving Uganda's Bomi Holdings as the only other investor in the railway operator with a 15%.

#### **1.2 Statement of the Problem**

Despite having all the features that had already driven long-term African rail concessions of its kind into virtual extinction, the RVR concession deal closed successfully and went on to become Euro-Money Project Finance Magazine's Africa Deal of the Year (PPIAF, 2010). Unfortunately, after closure, the concession has endured a number of additional challenges. The performance of the concession has been according to many analysts below expectations. Economic Survey Report (2014) noted that the railway freight tonnage had dropped from 1.4 million tons in 2012 to 1.2 million tons in 2013. In addition, the Economic Survey Report (2013) reported that total port throughput in 2012 rose by 9.9% to 22 million tons.

Increased port throughput should ordinarily provide more tonnage for the RVR which was not the case. With the survey indicating that 92% of freight was moved by road, government's impatience with the lack of tangible results from the concession has only grown. Olievschi, (2013) observed that chronic weaknesses, especially financial, had affected the required rehabilitation of the RVR network, the renewal of rolling stock, the setting up of better quality of services. This had only led to the continued losing of transport market share for railways. It was against this background that this study was sought to evaluate the PPP strategies that the RVR employed to ensure successful implementation of the concession.

## **2.0 LITERATURE REVIEW**

### **2.1 Critical Success Factors**

The mission and strategic goals of a business or project are strongly related to its CSFs since they focus on the aims and what is to be achieved. According to Rockart (1979), CSFs are the most important areas in which results, if satisfactory, will ensure successful competitive performance of an organization. They are the few key areas where things must go right for the business to flourish. If results in these areas are not adequate, the organization's efforts for the period will be less than desired.

Mellon (2010) noted that Rockart (1979) traced his CSF work to its conceptual antecedent, “success factors,” introduced by Daniel (1961) where the problem of inadequate management information for setting objectives, shaping strategies, making decisions, and measuring results against goals was discussed. Daniel (1961) asserted that organizational planning information should focus on “success factors,” some three to six factors that determine success. Although Rockart’s primary purpose with CSFs was to gather information needs for management decision-making he noted that the success factor concept was in itself useful for applications other than those he used and especially strategic planning.

Two techniques, the CSF method and future scenario planning, can augment strategic planning efforts by illuminating an organization’s present situation and potential future. Based on the premise that the mission and strategic goals of a business or project are strongly related to its CSFs, and the fact the latter are the three to six factors that ensure successful competitive performance, then in this research, PPP CSFs have been translated into PPP strategies that relate to an infrastructure concession PPP.

Reviewed literature generated many strategies that can be derived from business CSFs. This research however zeroed to the strategies adopted from PPP CSFs by Zhang (2005a), namely risk allocation strategies, sound financial package strategies and strong PPP consortium strategies, which are thought to have the greatest influence on the performance of RVR concession. In addition, Government of India, (2014) and the International Union of Railways (2010) appreciated the fact that operating technologies could help railways better meet the needs of today’s passenger and freight customers, ultimately helping them increase market share and one solution to this was clever implementation of new information technology (IT) strategies. Due to its importance therefore, technology has been selected as the fourth PPP strategy since it also has an additional effect of improving organizational communication.

## **2.2 Risk Allocation Strategy**

This study sets out to evaluate PPP risk allocation strategy by determining the extent to which the strategy affects the performance of RVR concession. It is important for the private and the public sectors entering into PPPs to establish effective risk allocation strategies during project preparation and implementation. In the PPPs Act, 2013, one of the key feature or characteristics is the transfer of appropriate risks to the private party.

Risk allocation in PPP project management involves allocating or sharing the responsibility for dealing with the consequences of each risk between the parties. The principle is to allocate the risk to the party best able to control its occurrence and consequences as well as to the party in the best position to assess information about the likelihood of the risk within the context of what is likely to be commercially acceptable to the private sector. There are only three parties to whom the risks can be allocated: users, investors (the private sector), and taxpayers (through the government). Risk does not disappear through contractual structuring; it is simply reallocated among the parties.

Transportation industry is widely associated with a high degree of risk due to the nature of business activities, processes, environment and organization. Many researchers have outlined risk as a CSF failing to recognize it as a strategy that can direct PPP project management operations. Cheung *et al* (2012) postulated that by logic, the public sector preferred to transfer risks associated with asset procurement and service delivery to the private sector participants, who were generally more efficient and experienced in managing them. This is evidenced by the RVR concession where by, agreement, the RVR consortium is responsible for the rehabilitation and maintenance of all assets to specified standards and for the achievement of minimum investment levels and traffic growth targets stipulated in the concession contracts.

The private sector should ensure that the public sector takes up risks that are beyond its control and should not be overly optimistic, should fully understand the risks involved and be prudent in pricing and managing the risks appropriately. Both Cheung *et al* (2012a) and Zhang (2005b) admitted that for PPP success, the government needed to ensure that there were measures in place to manage the risk exposure rather than leaving it open to the private sector. The RVR concession companies were to pay a minimum once-off entry fee of \$3 million to Kenya for concession fees for use of the conceded assets, an annual variable fee amounting to 11.1% of gross freight revenues and \$1 million annually for passenger business. Here, it is not clear whether demand risks were factored.

Equitable allocation of risk is a strategy that determines success or failure. A PPP project vehicle company in a concession should have a strategy of making sure various risks can be effectively managed by allocating them to parties best able to control them through appropriate contractual arrangements. This according to Emmanuel (2014) and Zhang (2005a) should include a concession agreement between the government and the concessionaire, and shareholder agreement, design and build contract, loan agreement, insurance agreement,

supply agreement, operation agreement, and offtake agreement between the concessionaire and relevant contracting parties.

Risk sharing as specified in a partnership contract is viewed as one of the main PPP aspects, especially in major infrastructure development projects due to high capital costs. Mouraviev (2012) pointed out that accepting additional risk in railway PPPs increased private party's costs and decreased profits. This observation accentuates the importance of government guarantees and a negotiation window as the project is being implemented. Abdkarim (2011) highlighted that risk acceptance was subject to discussion during the process of PPP contract negotiation and getting some compensation that was supposed to offset increased costs. Effective negotiation of identified risks and related compensation in the initial PPP contract is in this perspective a strategy that contributes to PPP success.

However, literature surveyed has however not pointed out notwithstanding the risks concurred in the PPP contracts, how exactly parties bore the risks in the course of project implementation also significantly depended on their interaction. According to Shrestha (2011), some risks might not be spelled out in a PPP contract, and may require further negotiation (later after the contract is signed), while some other provisions might be subject to interpretation by either party. If the public and the private parties are in good and cordial relationship, then risks can be negotiated and re-negotiated without the private party making any losses and the public party losing value for money.

Additionally, risk allocation must be kept as a strategy and not as a CSF of importance during project preparation as literature suggests. This is because in the long run; new circumstances of any kind might develop, presenting new challenges and possibly reallocation of responsibilities and costs. The examples of challenges that could set in after PPP commencement included; changes in legislative environment, political and economic reforms, and/or international influences. Some risks may not be foreseen and it is the dynamics of the partners' relationship, rather than initial risk allocation that determines redistribution of risks and related expenses.

### **2.3 Sound Finance Strategy**

In evaluating financial package strategy is geared to establish how sound financial package affected the performance of RVR concession. Transferring responsibility to the private sector for mobilizing finance for infrastructure investment is a major difference between PPPs and conventional procurement. PPP projects are generally financed using project finance arrangements. The RVR consortium finance strategy composed debt component of \$64 million; equity of \$24 million and internal cash generation of \$33 million pledged towards the five-year investment (PPIAF, 2010).

The \$33 million internal cash generation pledge is like a wakeup call for RVR to have an appropriate plan for tariff levels. Reasonable toll rates would include variable toll rates set to be enough to cater for this capital pledge and retire debts (Delmon, 2009). For RVR, raising debt and equity for rail investment required a reasonable assurance that revenues from freight tariffs will be sufficient for the purposes of pay for the costs of operation, maintenance and future capital improvements, and provide a reasonable return to investors.

Sound financial analysis must become handy for PPP project companies to identify revenue, market demand, actual or expected freight levels, predictability of expected traffic, funding structure, operation and maintenance requirements and the length of project. PPIAF (2010) reported that the RVR concessionaire was expected to make a minimum, annual investment over the first five years of \$5 million in Kenya for upgrading and rehabilitating the main rail line and rolling stock. A sound financial analysis for RVR will be important match income flows with financial obligations and assess the extent to which PPP can close the infrastructure funding gap.

PPPs face higher costs of capital because, unlike public financing, they involve equity investors who own stakes in the projects, share in the profits, and expect to earn higher rates of return for the risk they undertake. Here, investment, payment, and drawdown schedules will affect the performance of a PPP. Drawdown conditions stipulate how funds will be transferred from the investors' account to the project's account (Demirag, 2010). The schedules are based on the project's cash flow requirements. Debt investors often require equity drawdown to be either greater or equal, in proportion, to the debt drawdown, or set certain milestones or conditions for drawdown.

To improve chances of success and performance, PPPs need to have long - term debt financing that minimizes refinancing risk. PPP project companies raise finance through a combination of equity (provided by the project company's shareholders) and debt (provided lenders such as banks or through bonds or other financial instruments). According to Jefferies et al (2002), lenders play a useful role in reviewing the financial bankability PPP projects on which their decision to lend is based and in helping to ensure that the infrastructure asset is

constructed and subsequently operated on time and on budget. Having a sound finance strategy is therefore indispensable in PPP implementation.

The finance strategy adopted by PPP project companies is usually the combination of equity and debt, and contractual relationships between the equity holders and lenders. To avoid risks, lenders providing the project finance in a PPP usually take a strong interest in the performance of the project on which the repayment of their loans depends. Dada and Oladokun (2012) recommended a high equity-debt ratio in PPP capital structure. Apart from the debt, the balance of funding consists of equity, usually made available by the main contractors or by third-party financial investors.

It is important to stress that a sound financial strategy of a PPP project company should be geared to give the company a project finance structure that optimizes the costs of finance for the project. Akintoye *et al*, (2003) were of the view that such structure should also underpin the allocation of risks between the public and private sectors as agreed in the PPP contract. In particular, the project financing should ensure that financial and other risks are well managed within and between the PPP company shareholders, sponsors and its financiers.

A sound financial strategy should give comfort to the public sector that the PPP Company and particularly its funders, are both incentivized and empowered to deal in a timely manner with problems that may occur in the project. Indeed, to a very large extent, as the World Bank (2009) put it, the project finance structure should ensure that the interests of the main lenders to the project are aligned with those of the authority (the public) i.e. that both need the project to succeed in order to meet their objectives. Where this is the case, the public sector can be confident that the lenders will take on much of the burden of assuring the ongoing performance of the project. This is a key element of the transfer of risk from the public to the private sector in PPPs.

PPP consortiums are required to be sufficiently competent and financially capable of taking up the projects. Where appropriate, companies that agree to form a PPP consortium should strive to form consortia capable of synergizing and exploiting their individual strengths. Jefferies *et al* (2002) as well as Zhang (2005a) suggested that private companies should explore the strengths and weaknesses of other participants in a consortium making up the PPP special purpose vehicle. As seen in earlier literature, good relationship among consortium partners is also critical.

Consortiums need to have a solid financial background and be capable arranging sufficient funds to finance the project. Alhashemi (2008) and Zhang (2005a) have both highlighted that sound revenue stream of the project was the basis of project finance as lenders and investors had recourse to no funds other than this revenue stream and assets of the project may not have any residual value. Although the authors recognize that sound financial base is a CSF of PPP implementation and performance, they fell short of recognizing sound financial package as a strategy and its importance in PPP performance and that it should optimize the costs of finance for the project.

The reviewed literature has pointed out that project finance needed to be harnessed from financial markets to improve the performance of PPP during its implementation (Akintoye *et al*,2003) and that the government had an important role in establishing an attractive financial market that encouraged the private sector to face risk and participate in PPP projects (Zhang, 2005a). This is not an end by itself since if PPP Project Company lacks a sound finance strategy by itself, the presence of sound financial market will not guarantee a good PPP performance. Such facilities only provide an opportunity to consortiums entering PPP arrangements with public sector to have a sound financial base and thus increasing the chances of a successful project performance.

#### **2.4 Strong Private Consortium Strategy**

This research aims to find out whether the strategy of a strong private PPP consortium has an effect on concession performance. Literature pointed out that competitive bidding solely on price did not help to secure a strong private consortium and obtain value for money for the public (Hardcastle *et al*, 2005; Zhang 2005a). This calls for the contracting authority to take a long-term view in seeking the right partner.

Successful PPP project implementation requires a competent and financially capable private sector consortium. Dada and Oladokun (2012) summarized a strong and reliable concessionaire consortium for good PPP performance as that with; adequate technical strength with strong and capable project team; good relationship with host government authorities; leading role by a key entrepreneur in it; effective project organization structure; sound technical solution; multidisciplinary participants; and rich experience in international PPP project management.

The aim of the PPP transaction stage is to select a competent consortium, with a sound technical solution for the proposed project, which offers value for money for the government and users. This requires a competitive, efficient, and transparent procurement process. It remains government's role to establish an appropriate environment for PPP projects to work, but on the other hand a huge task is given to the private sector to carry out

the work. Alhashemi (2008) observed that the private sector ought to be capable both technically and financially competent to achieve PPP contractual roles. This strategy calls for the RVR concession to have in-house technical capability to operate rail business at international standards.

The majority of PPP projects tend to constitute a strong private consortium in order for the method to work. A leading entrepreneur within the consortium needs to be a company of international standards. Cheung *et al* (2012) supported the idea of strong private consortium for PPP project success by the example of London Underground Connect, in the UK which was awarded to strong company, the City Link Telecommunications Limited. Its shareholders included a well-managed and financially capable lead entrepreneur, the Thales with 33% holding. Other shareholders were Fluor (18%), Motorola (10%), Laing Investment (19.5%) and the Hong Kong and Shanghai Banking Corporation Limited (19.5%). The cost of the design, build and maintain contract is £2 billion over 20 years. This indicates that a strong private consortium is therefore important for the successful implementation of PPPs.

At this point, it is clear that apart from financial muscle, the strength of the consortia also lies in the management team deployed project organization structure that allows effective communication and agility. Alhashemi, (2008) highlighted that strong consortiums needed to have rich experience in PPP project management so as to help them in selecting the best management style for the project. Ismail and Ajija (2012) identified consortia's technical compatibility and complementary skills among the key parties and technical innovation in overcoming project complexity as determinants of PPP project success among others.

Private consortium strength is also affected by its relationship with the public sector. Good relationship among partners is also critical because they all bear relevant risks and benefits from the cooperation (Zhang 2005a). Love *et al* (2000) mentioned that two fundamental attributes for procuring successful infrastructure projects were commitment and mutual trust, which needed to come from both the public and private sectors. Alhashemi, (2008) was of the view that consortium's good relationship with public authorities, speeded up approvals and permits required for the projects and opened dialogue channels with the government for discussion and clarifying issues quickly.

A strong private consortium strategy ought to root for multidisciplinary competences in the field of concession. Dada and Oladokun (2012) viewed that consortium partners needed to bring in core expertise in wide range of relevant areas multidisciplinary staff with extensive capabilities. For RVR as a railway transport and infrastructure concession, its consortium should be having civil, environmental and structural engineering expertise, risk assessment, health and safety, system and transport engineering, electronics, telecommunications and innovation engineering, capable to identify and manage unconventional solutions for transport and engineering needs.

Governments look to the private sector to help them deliver infrastructure for a number of other reasons among them are introducing private sector technology and innovation in providing better public services through improved operational efficiency and incentivizing the private sector to deliver projects on time and within budgets. To achieve these, the public sector should capitalize on the experience of entrepreneurs with proven track records in international PPP implementation. World Bank (2009) advised that governments should consider involving private sector companies that are engaged in similar investment activities in the delivery and management of infrastructure projects. As a strategy, the RVR needed to be composed of partners who have managed the similar process.

The surveyed literature has highlighted that the strength of a consortium is a CSF for PPP project implementation and performance. However, consortiums have unique characteristics which make even the strongest to become the weakest. For example, the EU Checklist for a Consortium Agreement highlighted that a member of a consortium can change their contractual agreement at any time to suit changed circumstances and that it was also difficult for consortium members to restrict or limit its liability (EU, 2007). This means that, some members may even become liable to third parties for the non-performance of other members of the consortium or the debts of such members in undertaking a common project.

Due to those unique characteristics, a long-term strategy of a strong private consortium is essential especially in infrastructure PPPs. It might also be difficult to maximize the benefits of a consortium strategy in the short-term. Apart from anything else, members of alliances or partnerships, which are often a feature of consortia, need to develop mutual trust and inevitably this takes time.

## 2.5 Technology Strategy

This study has the objective to find out the effect of harnessing technology as a strategy on the performance of the RVR concession in Kenya. Any organization with profit motive strives to operate efficiently and exploits technical and managerial expertise and will invest in technology and process innovations to reduce whole life-



cycle costs. According to Breznik (2012), the possibility that information technology (IT) can contribute to firm performance and help to gain a sustainable competitive advantage has received a great deal of attention in recent years. Scholars claim IT can be a source of competitive advantage and its impact can be either direct or indirect.

The pace of technological change in railway rolling stock is fairly slow because railway rolling stock has long lives. The relatively slow turnover of both locomotives and freight cars has slowed the penetration of efficient technologies into the rail system (Jolley, 2006). Nevertheless, the key aspects of technological change in railway equipment can be predicted. They involve suspension and drive, power and energy, communications and information, track, and track environment.

Embracing technology brings in efficiency in railway transport industry. International Union of Railways (2010) noted that the best way to attract new passengers to rail was to provide reliable, punctual and safe services that offer value for money. Around the world, railways are investing in better rolling stock and infrastructure and more accessible stations with better facilities. The Government of India (2014) reported that owned over 200,000 freight wagons, 50,000 coaches and 8,000 locomotives and 16 railway zones and as the largest employer with more than 1.6 million employees, IT was helpful in serving rail users of this scale effectively and efficiently.

To improve operations and strike a competitive edge, a new generation of control technology is already changing long established practices in railway operations. Most railways in their quest for competitive edge have technology that combines electronic interlocking with advanced computerized control systems provides the basis for automation of traffic management on the railway (Jolley, 2006). An extension of such technology facilitates multi-media communication of traffic information to customers.

For RVR, faced with obligations of workforce rationalization and guarantee payments, harnessing technology and especially IT will come handy. Trends of railway technology systems combine operational control including the monitoring and correction of real-time performance, such as energy use, and the allocation of resources in terms of vehicles, infrastructure and staff (Government of India, 2014).

Important changes in technology, markets, institutional structures and management theory have led to new ways of conceptualizing transportation processes and the development of new efficiencies. International Union of Railways (2010) observed that application of IT such as computerization of freight operations had effectively increased its efficiency on railways around the world and resulted in employees being managed more effectively and increased revenues. In addition, to control freight on transit and improve reliability, Capineri and Leinbach (2006) pointed out that most railways were equipped with sophisticated information and technology software that allows tracking and tracing of goods.

Governments competitively tender PPP projects by specifying required outputs, and not the required technology to deliver those outputs, an approach consistent with good practice in defining output-based performance requirements for PPPs. Risks associated with design, technology, construction, and operation are typically allocated to the private sector, which is usually more efficient at controlling and managing them (World Bank, 2009). This then calls for PPP companies to clearly define their physical outline and also the technology strategies they will use to achieve the required outputs.

Reviewed literature has failed to link the fact that the greatest source of value for money is achieved by the public sector not specifying how a service should be delivered or how an asset has to be designed and built. Instead, governments will spell out the services they need and the desired outcomes and outputs. The private sector can then introduce innovative solutions to meet government's objectives, among them a technology strategy to improve performance through efficiency.

## **2.6 Empirical Literature**

Thus far the researcher has reviewed the existing literature to set a theoretical basis for this paper. First of all, it can be concluded that PPPs are best conceptualized as contractual arrangements of a particular type. They are often formed in the conditions also characteristic of when privatization of state-owned enterprises happens. There are a number of research papers regarding factors that affect the success and the implementation of PPPs in infrastructure and other sectors. There are similarities in these papers which can be attributed to their general consensus that PPP is the convenient model for projects with high costs such as infrastructure projects, an important factor considered to provide a better business case for the private sector.

In a study on CSFs for PPP in infrastructure development Zhang (2005a) examined economic viability, equitable allocation of risks, favourable environment, strong private consortium and sound financial package as PPPs CSFs. On analysis, the author reported that there was a good agreement in the ranking of these CSFs between respondents from the industrial sector and those from the academic sector. PPP project economic viability ranked; appropriate risk allocation was second; sound financial package came in third; favourable investment

environment was fourth; while consortium with strong technical strength ranked fifth. The author examined the relative importance of the CSFs based on the perceptions of experts comprising academics and industry players, but the results are not based on a particular case.

In order to demonstrate that it was important for the public and private sectors to establish effective risk allocation strategies for PPP projects, AbdKarim (2011) reviewed the risk factors of PPP construction project by mapping previous research works on PPP projects around the world. The findings from this reviewed study were that the risk factors were clustered into 10 groups namely Political, Construction, Legal, Economic, Operation, Market, Project selection, Project finance, Relationship and Natural factor. The conclusion was that the most frequent factors were change in law, delay in project approvals & permits and land acquisition. The study failed to bring out the fact that risk allocation strategies affected how PPP Project Company fared on during the implementation.

Azar et al (2011) applied the principles of Q-methodology to systematically examine the subjectivity of PPP professionals in an International Conference on Construction and Project Management and found out that risk knowledge management and disaster recovery accounted for 12% of the total variance, managing risks and opportunities accounting for 19% of the total variance and PPPs policy and strategic framework accounted for 17% of the total variance. In light of this, the authors concluded that the integration of risk management practices was considered as most essential for success of a PPP implementation by the professionals. This paper was also about generic factors affecting PPPs and had no regard to specific real situation in any institution.

On Chinese perspective on CSFs of infrastructure PPPs, Chan *et al* (2010) employed factor analysis that grouped some 18 CSFs of PPPs. The factor of transparent and efficient procurement process which emphasized on competitive bidding to secure a strong private consortium and obtain value for money for the public had a high factor loading of 0.897. In an underlying group consisting of four CSFs that included political support; social support; strong private consortium; and good governance, the factor loadings for the CSFs political support and social support were 0.861 and 0.834, respectively. These PPP CSFs are still generic in the whole and diverse country of China and pays no attention to individual PPP company experiences.

Emmanuel (2014) investigated CSFs for implementation of PPP projects in Nigeria with the objective to identify and appraise CSFs that contributed to implementation of PPP projects. In a criticality index ranking of PPP CSFs, transparent and sound regulatory framework ranked first with 0.894 score, both comprehensive feasibility study and appropriate risk allocation ranked second with 0.833, with stable investment environment ranking fourth with 0.783, while project economic viability (0.686) ranked ninth. The author concluded that CSFs such as commitment and responsibility of public and private sectors, strong private consortium and realistic cost-benefit assessment amongst others are critical for PPP implementation.

Different types of PPPs have been practiced in worldwide infrastructure development with diverse results and a variety of problems have been encountered. A number of factors combine to determine the success or failure of an infrastructure project in terms of its objectives. Many studies have fronted these factors as CSFs of PPP projects. However, the interpretation of these results has been complicated by the fact that these studies are based on all economic sectors generally. In addition, none of the studies have evaluated whether the strategies adopted a PPP project company has had an effect in the performance of the latter.

### **3.0 METHODOLOGY**

#### **3.1 Research Design**

The research set to evaluate the PPP strategies and their effect on the performance of RVR concession. This adopted descriptive research design, therefore aiming to describe the PPP strategies and further determine relationship between these strategies and the performance of the RVR concession. Roberts and Burke (1989) defined descriptive research as a non- experimental research design used to observe (and measure) a variable when little conceptual background has been developed on specific aspects of the variables under study.

The researcher explained and connected the performance of the RVR concession and PPP strategies known to lead to success or failure of railway concession in SSA by survey method. Participants answered questions administered through questionnaires and thereafter the researcher described the responses given. This approach was used to describe variables rather than to test a predicted relationship between variables (there was no testing of hypothesis). This descriptive approach in data collection was able to provide a clear picture of the phenomenon under study. The researcher facilitated the sampled respondents to bring out their judgments and experiences during the time of the RVR concession implementation so that the phenomenon under study could unfold without unnecessary hindrance.

### 3.3 Sampling Frame

Since it was impossible to access to the entire RVR staff and most might not have been conversant with the matters in question, this research relied upon a sampling frame to represent all of the elements of the population of interest. The sampling frame defines a set of elements from which a researcher can select a sample of the target population. Based on the selected criterion, the sampling frame in this research was the middle and senior level managers drawn from management and technical departments of RVR and were based in the headquarters in Nairobi.

### 3.4 Target Population

The researcher aimed to focus on RVR staff that was involved in day to day operation of the project vehicle company. The target population for this research project was selected based on the individual ability to provide the type of information needed (purposive). The population of study therefore was selected based on following criterion. This was (i) respondents needed to have good knowledge of PPP as a procurement model (ii) to have followed closely the developments in the RVR concession, (iii) must have been middle or senior managers in the company since the year 2010.

There are 17 managers fitting this criterion in RVR headquarters in Nairobi. Table 1 below summarizes the target population that fitted the above established criterion.

**Table 1 Target Population**

Category	Frequency	Percentage %
Managers	9	53
Technical Managers	8	47
<b>Total</b>	<b>17</b>	<b>100</b>

Source: Author 2014

### 3.5 Sample Size and Sampling Procedure

Since respondents were to be selected based on some characteristic i.e. good knowledge of PPPs, have followed closely the developments in the RVR concession, and RVR middle or senior managers of RVR since the year 2010, all the 17 managers were purposively sampled, this effectively made this study a census.

The main goal of the purposive selection of respondents was to enable the researcher target the information rich areas in order to answer the research questions. This method allowed the researcher to use cases that have the required information with respect to the study objectives. However, due to the volatile environment at RVR concession, the study also employed snow balling. Initially, a contact, a manager was identified and was used to provide the names and the contacts of the other respondents. According to Faugier & Sargeant (1997), the strategy has been utilized primarily as a response to overcome the problems associated with understanding and sampling concealed populations such as the deviant and the socially isolated.

The sampling method involved the selection of elements based on assumptions regarding the population of interest, which formed the criteria for selection. Hence, because the selection of elements was nonrandom, there was no estimation of sampling errors. All the 17 managers identified as fitting the selected criterion were sampled.

**Table 2: The Sample**

Category	Target Population	Sample	Percentage %
Managers	9	9	53
Technical Managers	8	8	47
<b>Total</b>	<b>17</b>	<b>17</b>	<b>100</b>

Source: Author 2014

### 3.6 Data Collection and Instruments

Since this was a qualitative research, to increase response rate, data collection approach was employed with an aim of having direct interaction with individuals on a one to one basis. This case study employed questionnaire survey and analysis of the available documents to answer the research questions.

Survey questionnaire was administered to each member of the sample population by the researcher. The instrument had personal information and close-ended questions only. The questionnaire developed for the survey was used as a research tool to assess the suitability, acceptability and feasibility of the PPP strategies based on respondents' judgments. Secondary data were collected to get additional information from already documented data or available reports. This basically implied that the incorporation of valuable statistical data in the study.

The questionnaire provided the respondents with different statements related to the PPP strategies (identified from literature) and based on the statement's suitability, acceptability and feasibility as strategies in RVR, the respondents were required them to rank them on a 5 point Likert Scale as follows; 1-Unimportant, 2-Least Important, 3-Neither Important nor Unimportant, 4-Important, 5-Most Important.

### 3.7 Validity

Validity and reliability are two fundamental elements in the evaluation of a measurement instrument. According to Tavakol and Dennick (2011), validity is concerned with the extent to which an instrument measures what it is intended to measure, while reliability is concerned with the ability of an instrument to measure consistently. The prepared questionnaires were administered to six key contacts that have PPP experience for peer review before full administration. Triangulation based on similar past studies was also used to ensure validity.

### 3.8 Reliability

Reliability of an instrument is closely associated with its validity but does not depend on it. It is the extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. An instrument cannot be valid unless it is reliable (Tavakol and Dennick, 2011). Test-retest method was used to check the reliability of the instrument by administering a questionnaire sample to four respondents of the same sample on two different occasions and editing were done where necessary. Lastly, Cronbach's Alpha (Cronbach's  $\alpha$ ), a coefficient of internal consistency was used to estimate of the reliability of the test scores of the questionnaire.

### 3.9 Data Collection Procedure

Questionnaires were individually administered by the researcher to all respondents of the study. The study exercised care and control to ensure that all the respondents answered instrument. This was achieved by adopting drop and pick later method and also maintaining a register of the sent and the received questionnaires.

### 3.10 Data Analysis

Data gathered by the survey were reviewed and then analyzed to form some sort of findings and conclusions. According to Shamoo and Resnik (2003), various analytic procedures provide a way of drawing inductive inferences from data and distinguishing the signal (the phenomenon of interest) from the noise (statistical fluctuations) present in the data. Three types of analysis were conducted. First, the descriptive statistics, percentages in particular were used to describe the respondents and their characteristics. Second, the relative importance of the strategies in affecting the RVR performance was analyzed using the ranking method. Diba (2012) reported that this type of scale (ranking CSFs) was found to be acceptable in construction management research.

From the 5 point Likert scale ranking, means of each PPP strategy (from the provided statements) were calculated and tabulated as seen in Table 3 below for analysis in SPSS Version 20.0.

**Table 3: PPP Strategy Means**

Respondent	Ranks				Sum of Ranks
	R. Strategies	F. Strategies	C. Strategies	T. Strategies	$R_i$
1					
2					

**Source: Author 2014**

Mean Score (MS) ranking was used to calculate the mean score of each factor, which will then be used to determine its relative importance a strategy in terms of its suitability, acceptability and feasibility. The MS were computed by the formulae;

$$MS = \frac{\sum(f \times s)}{N}$$

Where  $S$  = Score given to each factor by respondents, ranging from 1 to 5 depending of marking of its importance,  $N$  = Total number of responses concerning that factor.

The Kendall's coefficient of concordance (Kendall's  $W$ ) was used to relate the ranking of the adopted PPP strategies by the different judges (respondents). The co-efficient is used in measuring the inter-judge reliability strength i.e. the degree of assessment concordance and will fit perfectly because the researcher is interested in the respondents' judgment of the PPP strategies suitability, acceptability and feasibility. Kendall's  $W$  can be calculated using the formulae;

$$R = \sum_{i=1}^k (R_i - \bar{R})^2$$

Where  $R$  will be sum of squares statistic over the row sums of ranks  $R_i$ , and  $\bar{R}$  is the mean of the  $R_i$  values.

Lastly, Spearman's rank correlation test was then be used to examine the general similarity on theses rankings between the 2 groups of respondents, i.e. the management and the technical managers. The results of this test were interpreted by correlation coefficient ( $r_s$ ). The correlation coefficient ranges in value as follows;

$$-1 \leq r_s \leq +1$$

Where -1 denotes a perfect negative relationship and +1 denotes a perfect positive relationship. A value of 0 indicates no linear relationship.

An essential component of ensuring data integrity is the accurate and appropriate analysis of research findings and in light of this; the researcher used Microsoft Excel 2013 and Statistical Package for Social Sciences (SPSS) Version 20.0 for the analysis and presented in the form of tables, charts and percentages.

#### 4.0 FINDINGS& DISCUSSIONS

##### 4.1 Analysis

Three types of analysis were conducted where descriptive statistics were used to describe the sample, with Mean Score ranking technique and Kendall's coefficient of concordance being used to rank and measure the judgment of PPP strategies from different judges and Spearman's rank correlation test used to examine the general similarity on theses rankings between the 2 groups of respondents.

##### 4.2 Response Rate

The overall response rate is shown in Table 4 below. A total of 17 questionnaires had been targeting senior and middle level managers at the RVR offices in Nairobi

Table 4: Response Rate.

Category	Target Population	Responded	Percentage %
Management	9	8	47
Technical Managers	8	5	29
<b>Total</b>	<b>17</b>	<b>13</b>	<b>76</b>

Source: Author (2014).

Response rate was intended to determine the viability of the research study. Out of the 17 questionnaires dropped, 13 were responded to, a response rate of 76 per cent which was taken as viable for subsequent analysis.

##### 4.3 Characteristics of the Respondents

This subsection, as seen in Table 5 below summarizes background characteristics of respondents. Majority of the respondents (62 per cent) were drawn for the management departments of RVR while the rest, 38 per cent were from the technical departments of IT and engineering. In addition, other important characteristics of interest in this research included duration employed at RVR and education level. They are used later in the report to draw comparisons among respondents.

Table 5: Characteristics of the Respondents

Category	Frequency	Percentage %
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<b>Management</b>	8	<b>62</b>
<b>Technical Managers</b>	5	<b>38</b>
<b>Duration of Employment</b>		
<b>1-5 years</b>	<b>6</b>	<b>46</b>
<b>&gt;5 years</b>	<b>7</b>	<b>54</b>

**Source: Author, 2014**

The RVR special purpose vehicle as currently constituted under the stewardship of Citadel Inc. seem to have retained a large chunk of the initial consortium since 54 per cent of the respondents had been working in the firm for over 5 years. Employees who have worked for less than 5 years and probably hired after the renegotiation of the concession in 2010 comprise 46 per cent. Majority of the respondents (62 per cent) had bachelor's degrees, 15 per cent were post graduates while 23 per cent had diplomas.

#### 4.4 Performance of RVR

Before ranking the strategies, it was important to gauge the performance of the RVR concession. Respondents were asked to rate the performance as either "Below Expectations" or "Above Expectations." See Figure 1 below.

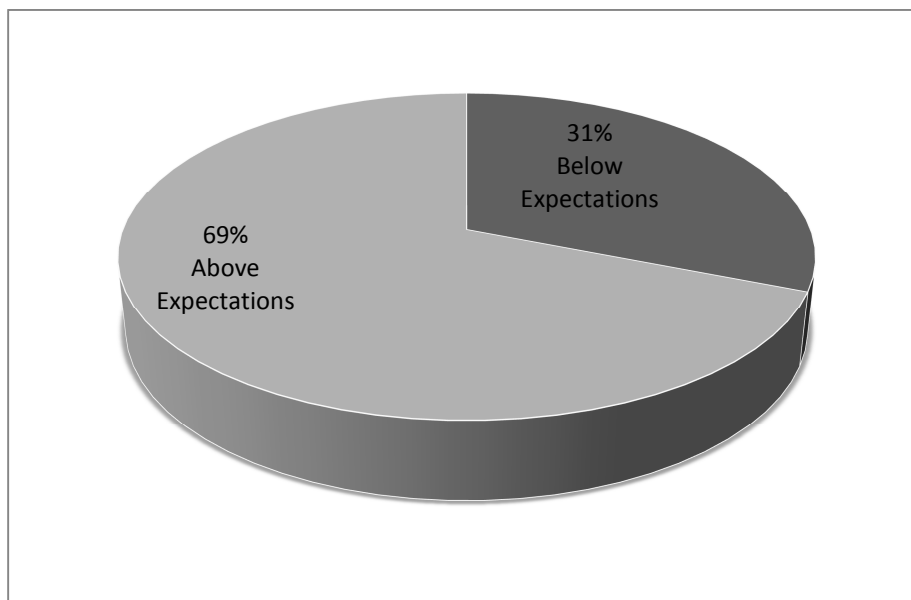


Fig. 1 Performance of RVR

As evident in the figure above, 69 percent of the respondents were of the opinion that the RVR had performed above expectations while 31 percent felt that the concession had performed below expectations. Reasons given for the above expectations opinion were that the company had invested heavily on the dilapidated rolling stock concessioned by the government in 2006 and the repair of the aging Mombasa-Malaba railroad. The facts that more locomotives were in operation than at the time of concession and the purchase of new locomotives in 2014 for the first time in decades were cited. Reasons given for the performance below expectations opinion were that RVR has not made the investments agreed in the contractual terms especially the annual investment of \$5m in Kenya towards the main rail line and rolling stock in 5 years and the an annual variable fee of 11.1% of gross freight revenues and the ever declining freight tonnage.

#### 4.5 PPP Strategies

The main objective of this research was to evaluate the adopted PPP strategies that the concession of RVR had adopted during initial agreements. The specific objectives were geared to evaluate the extent to which these strategies affected the performance of RVR based on the criterion of their suitability, acceptability and feasibility. Table 6 is a summary of the responses.

Table 6: PPP Strategy Extent of Influence

Extent of Effect	Risk Strategies (%)	Financial Strategies (%)	Consortium Strategies (%)	Technology Strategies (%)
Very great extent	54	38	54	8
Great extent	23	31	38	38
Moderate extent	8	31	8	-
Little extent	15	-	-	46
No Extent	-	-	-	8
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Author 2014

Risk allocation strategies were perceived to affect the performance of RVR to a “Very Great extent” and “Great extent” (54 and 23 percent respectively) by the respondents compared to 23 percent who thought otherwise. This indicates the important associated with risk management in PPP projects. Sound financial strategies were approved by 69 per cent (“Very Great extent” = 38 per cent and “Great extent” = 31 percent) with 31 percent taking them to have moderate influence in concession performance. This too communicates the fact that financial base of RVR affected its performance. Strong consortium strategies were ranked to have had the most influence on RVR performance record with 92 percent (“Very Great extent” and “Great extent” being 54 and 38 percent respectively), 8 percent ranked it to have had a moderate influence. Majority respondents (54 percent) ranked technology to have had little or no effect on the RVR performance, with 46% thinking otherwise.

In light of this, responses about the four identified strategies were ranked based on a five point Likert scale (1-Unimportant, 2-Least Important, 3- Neither Important nor Unimportant, 4-Important, 5-Most Important). In the performed mean score ranking, the means of the four strategies were found to range from 2.49 to 3.58. This is an indication that the opinion on the adopted PPP strategies ranged from neither important nor unimportant to important for the success of RVR.

The strength of consortium strategies ranked highest, (mean = 3.58), followed by sound financial strategies (mean = 3.18). According to the Likert Scale employed in this research, scores 3.1 - 4.0 were classified as important for successful project implementation. According to the respondents therefore, strength of consortium strategies and sound financial strategies were deemed as important. Risk allocation strategies ranked third (mean = 2.65) whereas technology strategies were fourth ranked (mean = 2.49). The score of 2.1 to 3.0 meant that these strategies were deemed as neither important, not unimportant but just necessary.

Table 7 below summarizes the mean ranking of PPP adopted strategies by all the 13 respondents.

Table 7: Mean Score ranking of PPP Strategies

	Risk Strategies	Financial Strategies	Consortium Strategies	Technology Strategies
Mean	2.65	3.18	3.58	2.49
N	13	13	13	13
Std. Deviation	1.23970	.72783	1.14152	1.06024

Source: Author (2014).

Based on these mean scores, the ranking of the adopted PPP strategies is according to Table 8below.

Table 8: Overall Ranking of PPP Strategies

PPP Strategy	Mean	Rank
Strong Consortium Strategies	3.58	1
Sound Financial Strategies	3.18	2
Risk Allocation Strategies	2.65	3
Technology Strategies	2.49	4

Source: Author (2014).

According to Legendre (2010), the Kendall' W is used to assess the degree to which a group of variables are given a common ranking by a set of objects and that Kendall's W value of 0 means no agreements at all, and 1 represents perfect agreement.

It was therefore important to relate the ranking of the adopted PPP strategies. The Kendall rank coefficient was used as a test statistic to establish whether the strategies may be regarded as statistically dependent on each other. Table 9 below summaries these correlations.

Table 9: Kendall's Coefficient of Concordance

		Risks	Financial	Consortium	Technology
Risks	Correlation Coefficient	1.000	.621**	.268	.593**
	Sig. (2-tailed)	.	.005	.233	.007
Financial	Correlation Coefficient	.621**	1.000	.558*	.480*
	Sig. (2-tailed)	.005	.	.011	.026
Consortium	Correlation Coefficient	.268	.558*	1.000	.395
	Sig. (2-tailed)	.233	.011	.	.072
Technology	Correlation Coefficient	.593**	.480*	.395	1.000
	Sig. (2-tailed)	.007	.026	.072	.

Source: Author 2014

**Notes**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

c. Listwise N = 13

The results were that those who highly risk strategies as having an effect on the performance of RVR also approved sound financial strategies (Kendall's W = .621\*\*) and fairly approved technology strategies (Kendall's W = .593\*\*) but failed to approve strong consortium strategies (Kendall's W = .268). For the respondents who ranked sound financial strategies as important in the RVR concession performance, risk strategies (Kendall's W = .621\*\*) and strong consortium strategies (Kendall's W = .558\*) were important, but just fell short of endorsing technology strategies (Kendall's W = .480\*).

The respondents who highly ranked strong consortium strategies as having an effect on the performance of RVR only marginally approved sound financial strategies as important (Kendall's W = .558\*) but poorly ranked risk and technology strategies (Kendall's W = .268 and .395 respectively). Those who felt that technology strategies ranked first also approved risk strategies (Kendall's W = .593\*\*) but saw sound financial strategies (Kendall's W = .480\*) and strong consortium strategies (Kendall's W = .395) as not being important in RVR concession performance.

To examine the ranking of different groups of respondents, i.e. whether the departments from which the respondents worked (management and technical) and the number of years the respondents had worked in RVR concession (1-5 years and >5 years) had an effect in ranking, Spearman's rank correlation ( $r_s$ ) test was run. This was to find out whether or not there were similarities in their PPP strategy rankings, a measure of the strength of a monotonic relationship between paired data.

$$-1 \leq r_s \leq +1$$

The closer  $r_s$  is to -1 or +1, the stronger the monotonic relationship between the two items under evaluation. Table 10 shows this test of agreement.

Table 10: Spearman Rank Correlation Coefficients



	<b>Management/Technical</b>	<b>1-5 years/&gt;5 years</b>
$r_s$	1.000**	0.989**

**Source: Author (2014).**

Notes

\*\* Correlation is significant at the 0.01 level (2-tailed).

As seen in the Table 10 above,  $r_s$  in the first case is +1, indicating that there was a perfect positive monotonic relationship in the ranking of the adopted PPP strategies by the respondents from the two groups, i.e. management and technical departments. In this research, those employees who had worked more than 5 years were deemed to have had an experience of RVR when Sheltam was the lead entrepreneur (2006-2010) while those who had worked 1 to 5 years were taken to have had found the current management led by the lead entrepreneur, Cidatel. In the second case (1-5 years / >5 years) in Table 4.7 above. There was a strong monotonic relationship ( $r_s = 0.989^{**}$ ) between the rankings of those employees who had worked 1-5 years and those who had worked for more than 5 years.

Tavakol (2011) strongly recommended that when using Likert-type scales, it was imperative to calculate and report Cronbach's alpha coefficient (Cronbach's  $\alpha$ ) for internal consistency reliability for the scales used. Questionnaires were used in this research and therefore it is mandatory to estimate this quantity to add validity and accuracy to the interpretation of the data. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. George and Mallery (2003) provided the following rules of thumb: " $\alpha > .9$  – Excellent,  $\alpha > .8$  – Good,  $\alpha > .7$  – Acceptable,  $\alpha > .6$  – Questionable,  $\alpha > .5$  – Poor, and  $\alpha < .5$  – Unacceptable."

Table 11: Cronbach's alpha Reliability Statistics

<b>Cronbach's Alpha</b>	<b>Cronbach's Alpha Based on Standardized Items</b>	<b>N of Items</b>
.875	.893	4

**Source: Author (2014).**

The result of Cronbach's  $\alpha$  for this survey as seen in Table 11 above was 0.875, suggesting that the items had relatively high internal consistency and therefore reliable.

#### **4.6 Discussion of Individual Objective Results**

The concept of project strategy should not be limited to serving a single parent organization only. Instead, the concept of project strategy should acknowledge a project's autonomy as well as its unique position as part of its complex context. A project strategy should concern not only operative and tactical levels, but also the institutional level, and thereby enable a project's significant interaction with its context. This broader viewpoint would allow the project to define and implement a strategy of its own in alignment with the project's unique environment.

Therefore, a more holistic project strategy concept should be developed, to take into account a project's possibility to operate as an autonomous organization, to seek survival and success in an uncertain and complex environment, and to consider strategic options possibly with multiple strong stakeholders. The results of this research attest to the importance of strategy in PPP projects as summarized in the table 4.9 below and discussed thereafter.

##### **4.6.1 Risk Allocation Strategy**

As seen in the literature review, equitable allocation of risk is a strategy that determines success or failure. Best risk strategy is making sure that various risks are effectively managed by allocating them to parties best able to control them through appropriate contractual arrangements. Majority of respondents 77 percent ("Very Great extent" and "Great extent" with 54 and 23 percent respectively) were of the view that risk allocation strategies affected the performance of RVR concession to great extent.

However, they ranked this strategy as third in importance. This could only mean that there were other important strategies that have had an influence in the performance of RVR. It could also mean that risks in the RVR vehicle company have had effects, but the company has risk management plans that mitigate and minimize the

influence of the risks on the entity's performance. Risk management and mitigation takes with it a host of other important activities and resources, hence the importance attached to it by the respondents.

Risk management, the identification, analysis, assessment, control and avoidance, minimization or even elimination of unacceptable risks by a company takes in resources. This might explain why in Kendall's W (Table 10), those who ranked risk allocation strategies highly and important also ranked financial and technology respectively as the next important strategies. Technologies can help to give a business a competitive advantage by cutting the operation costs by the ability to offer a superior service and improving agility and RVR will try to recoup costs of risk management by employing technology to save resources.

In PPP projects, like all projects, risk management which involves risk monitoring and review is an important ongoing process that continues throughout the life of the project. This is because existing risks need to be monitored and new risks identified as the project develops and the environment changes.

#### **4.6.2 Sound Finance Strategy**

Private sector investors only come to the table if the source and level of revenue to cover the project's costs are clear and predictable. In light of this, for financial viability reasons, most projects are likely to be concession PPPs, where users, rather than the public authority, are expected to pay. Reviewed literature indicated however that this does not necessarily mean companies should not put in place some sound financial strategies to ensure successful performance.

This study set out to investigate how feasible was the financial strategy of the RVR concession. Majority of the respondents approved sound financial strategies to have had an effect of a great extent to the performance of RVR concession (69 percent "Very Great extent" = 38 percent and "Great extent" = 31 percent). This is an indication of the keystone role that project finance plays in RVR. Usually, a project financing structure involves a number of equity investors, as well as a 'syndicate' of banks or other lending institutions that provide loans to the operation, hence the importance of a sound financial strategy. Due to this, sound financial strategies ranked second (mean rank = 3.18) in terms of importance in RVR project performance.

From the performed Kendall's coefficient of concordance test, the research also found out that sound financial strategies were related to risk allocation strategies (Kendall's  $W = .621^{**}$ ) and strong consortium strategies (Kendall's  $W = .558^{*}$ ). The connection of these three strategies (risk, finance and consortium) in PPP projects in actually bankability. Put simply, a PPP project is considered bankable if lenders are willing to finance it. It is important to realize that considering bankability goes beyond financial strategies alone and includes much larger project considerations such as; creditworthiness, legal viability and economic viability which are all catered for in risk allocation strategies. PPP project bankability also depends on the technical feasibility which is connected with the strength and composition of a PPP consortium.

These results mirror those of Dada and Oladokun (2008) on their Perceptual Survey of CSFs for PPP projects In Nigeria where sound project finance was found to be a critical success factor. This is because a sound finance strategy is the basis of project finance as lenders and investors have recourse to no funds other than this revenue stream and assets of the project may or may not have any residual value.

The ranking of this strategy was based on sound financial package of a PPP which should include: sound financial analysis; sensible schedules for investment, payment, and drawdown; appropriate combination of financing sources and standby facilities; stable currencies of debts and equity finance; high equity-debt ratio; low financial charges; fixed and low interest rate financing; long-term debt financing that minimizes refinancing risk; ability to deal with fluctuations in interest and exchange rates; and appropriate payment structures.

#### **4.6.3 Strong Private Consortium Strategy**

The concessionaire in the railway concession in Kenya is the consortium formed particularly for a PPP project, and represented by RVR, a special vehicle company. As a principle participant in a PPP project, the responsibilities of the consortium include the financing, design, construction, operation, and maintenance of the rail infrastructure facilities and the transferring of the facilities to the client in operational condition at the end of the concession period. The success of a PPP project depends largely on the suitability of a private consortium.

Among the objectives of this research were to analyze the effects of a strong private consortium strategy on the performance of RVR concession. These strategies were ranked to have had the most influence on RVR performance record with 92 percent ("Very Great extent" and "Great extent" being 54 and 38 percent respectively) and ranked first (number 1) in the mean score ranking. This underscores the fact that operations issues in a PPP are not to be underestimated in order to secure a smooth execution of the contract during the

concession period; it is most suitable to have a strong, professional operator playing a key role within a PPP consortium.

The respondents who highly ranked strong consortium strategies as having an effect on the performance of RVR only marginally approved sound financial strategies as important (Kendall's  $W = .558^*$ ) but poorly ranked risk and technology strategies. From literature, a strong private consortium is that which professional expertise in financial analysis, economic analysis, legal analysis, environmental analysis, contract preparation, tender processing, as well as the relevant technical, cost estimating and communication skills. This definition encompasses all other factors under study and hence the high ranking given its inclusivity.

A strong private consortium with a lead entrepreneur is necessary in PPP to play a paramount role in the successful implementation. Significant realignment of risks among multiple project participants is a striking feature of the PPP scheme, in which the concessionaire undertakes far more commitments and assumes much broader and deeper risks than a mere contractor. This therefore calls for technical and financial strength in consortiums hence the probable connection of consortium and finance strategies.

These results are in agreement with those of Zhang, (2005a) where technical and financial strength of a consortium were found to be the most important success factors in competitive tendering for a PPP projects. The respondents were in agreement with statements that, in addition to strengths in formulating advantageous financial and technical packages, the concessionaire should also have strong managerial capabilities, including leading role by a key enterprise or entrepreneur, workable project organization structure, good relationship with host government authorities, partnering skills, rich experience in international PPP project management, multidisciplinary participants, and a strong project team

#### **4.6.4 Technology Strategy**

Generally speaking, there is no doubt that IT is a backbone of today's society. It has reshaped our way of living and working and become embedded in every sphere of our lives. Past research has demonstrated that the use of IT radically changes business operations and reshapes products and services themselves. Reviewed papers however had a dim perception of IT in railways by pointing out that the pace of technological change in railway rolling stock has been fairly slow because railway rolling stock have long lives and locomotives are typically rebuilt many times. The relatively slow turnover of both locomotives and freight cars has slowed the penetration of IT into the railroad system.

Nevertheless, the key aspects of technological change in railway equipment can be predicted. They involve suspension and drive, power and energy, communications and information, track, and track environment. This study had the objective to determine how the adoption of technology strategy had affected the performance of RVR concession. Respondents were divided on this but slight majority respondents of 54 percent opined that technology had little or no effect on the RVR performance, with 46% stating that it has to some extent affected performance. Overall, technology strategy was ranked last (number 4) cementing the argument that it has had little or no effect on RVR performance.

From Kendall's  $W$  tests, those who felt that technology strategies was an important factor also ranked risk strategies highly (Kendall's  $W = .593^{**}$ ). PPP is a complex (prone to risk) undertaking and tends to be more successful for projects where the private sector is well-equipped to introduce innovation. Therefore, the scope of the PPP project should allow the private sector sufficient flexibility to introduce new ideas, e.g. new technology, business process re-engineering, to generate efficiency gains. Technology can therefore not only help PPP to mitigate risks, it can also bring in competitive advantage.

Risk and technology also do come together in PPP due to the duration of the contractual agreements. For instance, if no variation provisions are included in the PPP contract, the PPP contract will be too inflexible to handle unforeseen circumstances, e.g. changes in technology. The best example being none other than the Standard Gauge Railway (SGR) which if complete will technically make the RVR rail obsolete, a major risk for the latter.

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Conclusions**

The key purpose of this research was to evaluate the PPP strategies deemed to have the highest impact on SSA railways on the performance of RVR concession in Kenya. Various PPP strategies were identified through case studies and literature review and after a survey on senior and middle level managers at RVR concession offices in Nairobi; they were further analyzed and ranked in terms of their importance in affecting the performance of RVR concession. The ranking was (1) Strong Consortium Strategy (2) Sound Finance Strategy (3) Risk Allocation Strategy and (4) Technology Strategy.

Having a strong private consortium ranked as the top most strategy in its influence on RVR performance. This underscored the importance of an able consortium of companies with a professional operator playing a key role within a PPP implementation. It also perhaps explains the changes in the composition of the companies that form the RVR consortium over time. The respondents who highly ranked strong private consortium strategy only marginally approved sound financial strategies as important but poorly ranked risk and technology strategies. The probable connection between technical and financial strength in consortiums was attributed to financial professionalism required in consortiums to harmonize and integrate resources for the success of a project. Second in importance was finance strategy, whose feasibility was also highlighted as crucial in the literature. The study unearthed that finance strategy in RVR was closely approved along risk allocation strategy a connection the researcher attributed to PPP project bankability. A bankable PPP will be economically viable and cater for risks. These results agreed with past studies where project finance was found to be a PPP CSF, because a sound finance strategy was the basis of project finance. PPPs are a risky complex adventures and equitable allocation of risk determines their success or failure. The sustainability of risk allocation strategies in RVR concession was ranked third in importance. PPP risks are usually allocated to the party best able to control them. To add on to that, risk strategies were found to be highly linked with finance strategies. It was deduced that the connection might have been risk management and control activities in the concession, a function that takes with it a host of other important activities and resources. The technology strategy was ranked last (number 4) cementing the argument that it has had little or no effect on RVR performance. Kendall's W tests showed that technology strategies were related to risk strategies. Since PPPs were prone to risk, technology had the highest chance of being harnessed to mitigate risks; it can also bring in competitive advantage.

## 5.2 Recommendations

PPPs play an important role in bringing private sector competition to public infrastructure monopolies and in merging the resources of both public and private sectors to better serve the needs of the public that otherwise would not be met. To better reap the benefits of PPP, this study has the following recommendations to the authorities for implementation

The government;

Should master the will to see through all her planned and proposed course of actions for resuscitating the railway sector. There are several plans on ground on transport policy change to boost railway business but the will to implement them seems to be lacking

The public sector should put in place good economic policies and plans like revitalizing the railway transport system should not be truncated on the altar of politics

Most importantly, the government should also provide other critical infrastructures that support business including railway transport

The government should urgently fix the energy problem to bring down the cost of fuel, improve on security and other infrastructures that will support a modern railway transport system.

PPPs are meant to provide value to the public. To other stakeholders and public at large, this study recommends that;

Getting the right level of public involvement in the PPP process and program can make or break the legitimacy of a PPP program, and directly contribute to good governance

Direct public participation at various points in the PPP process can improve project design. Equally important, making PPP projects and processes transparent enables PPP performance to be a factor in public policy debate, and in the formation of public opinion on the government's overall performance.

### 5.3 Suggestions for Further Studies

It is expected that the strategy evaluation results in this paper should provide a suitable framework for the risk analysis and strategic planning of PPP undertakings. The development of this framework is a subject of further research.

A study of this nature can be replicated in; (i) RVR buy focusing on quantitative data using the basis provided by this study to test hypothesis; (ii) other concessions in Kenya and in the developing countries in the region.

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