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FACTORS INFLUENCING PERFORMANCE OF ARTISANAL AND SMALL SCALE MINING PROJECTS IN TAITA TAVETA COUNTY, KENYA

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ABSTRACT

The purpose of the study was to establish factors that influence performance of artisanal and small scale mining projects in Taita Taveta County, Kenya. The design of this research was a descriptive survey research. The study used a census and the population for the study was 155 artisanal and small scale mining projects in Taita Taveta County, Kenya. It was notable that there exists a strong positive relationship between the independent variables and dependent variable. The data also had a high value of coefficient off determination (R^2 = 0.724. This showed that the independent variables in the study were able to explain 72.40% variation in the performance of artisanal and small scale mining projects in the study area while the remaining 27.60% was explained by the variables or other aspects outside the model. This indicated that the set of independent variables were important factors that needed to be enhanced to boost performance of artisanal and small scale mining projects in the study area. The study recommended for enhancement of stakeholder involvement in the projects. There is need to develop stakeholder engagement plans that describe the project stakeholder requirements. The study recommended that project teams involved in the various projects be equipped with more project management skills to enhance performance of artisanal and small scale mining projects in Kenya. There is a need for enhancing the planning, communication, leadership and management skills of managers. There is also need to ensure that there is adequate project financing to boost the performance of artisanal and small scale mining projects in Kenya. This would reduce budgetary constraints, cost overruns and reduce interference with running of operations according to the project schedule, and reduce the threat of insufficient capital to run project activities. Internal controls and record keeping are important to boost performance of artisanal and small scale mining projects in Kenya.

Key Words: *Stakeholder Involvement, Project Management Skills, Project Funding, Technology, Performance*

INTRODUCTION

Mining is an economic activity that is widely practiced in many countries around the world. Projects are the vehicle by which mining companies deliver on their strategies. One of the significant challenges occurring in both small and large scale mining projects in many resource-rich countries especially in Africa is the inability to continuously deliver successful projects; which ultimately pushes many mining entities out of business (Ika, 2012). According to Hruschka and Echavarria (2011), the operation of most mining projects is marked by short term focus on profitability which is quite unsafe as it compromises the long term health and viability of such mining projects.

Artisanal and small scale form of mining is largely a community-driven activity which plays an important economic role in many developing countries. It is estimated that in the order of 13 million people in about 30 countries are directly engaged in artisanal and small-scale mining (ASM), a significant proportion of who are women and children. A further 80 to 100 million people across the developing world could depend on ASM for some aspects of their livelihoods (WorldBank, 2013). ASM can be extremely environmentally damaging and often has serious health and safety consequences for workers and surrounding communities. This is generally due to poor practices in mining and processing target minerals (Heemskerk, 2015).

Spiegel (2011) points out that ASM projects have the potential to be important sources of income and driving forces for broader economic development. But this potential is not always realized. He highlights that; the mineral-dependent nations emerge as some of the poorest and worst performing economies in the world due to lack of proper strategies of sustainable mining. However, Kumar (2006) observes that, artisanal and small scale mining projects when managed well and with proficiency, can lead to accelerated, sustainable economic and social development for producer countries and their local communities. An emerging trend in mining sector is the focus on environmentally friendly and sustainable mining projects spearheaded by national and international policy makers as well as activist groups.

According to a recent survey carried out by the International Labour Organization (ILO) and MMSD, at present around 13 million people work directly in small mine projects throughout the world, most of them in developing countries. A large percentage of these miners are women and, regretfully, children. In the last 10 years international donor agencies have recognized the close relationship between ASM projects and poverty. Accordingly, the ASM sector is now on the agendas of many national governments, and of bilateral and multilateral donor organizations, and assistance programmes have been or are being carried out. CASM (Community and Small-Scale Mining) is an initiative of the World Bank and is a valuable instrument for donor coordination, experience and information exchange and for channeling funds for the ASM projects. There have also recently been interesting experiences in the relationship between large and small mining projects (WorldBank, 2014).

According to Hilson (2013), artisanal and small scale mining projects are popular in Venezuela, but currently facing serious challenges of sustainability, as continuous exploitation continues, yet none has raised the question of how to make this commodity available for future generations. He attributes performance of these projects to use of modern technology, cultural factors as well as the physical environment endowment. World Banks Mining Report (2011) indicates that artisanal and small scale mining projects have a significant economic, social and environmental footprint and there is undoubtedly a complex interplay between mines

and the communities/countries in which they operate. The report also added to the understanding of this interplay, showing that mining operations can bring benefits to people's lives. Much of the focus on the resource curse centers on the thesis that many developing countries suffer, rather than benefit from their natural resource riches.

In Kenya, just like elsewhere in the world, the mining industry stretching from quarry, fluorspar, soda ash, gold and even sand harvesting has not been sustainable, since the immediate need for obtaining survival has often been the driving force among the mining communities (Agot, 2012). According to Shakala (2011), even the large scale mining of Titanium in Kwale may not be sustainable in the long run as it demands a lot of financial resources to be invested in the project, sophisticated technological equipment for mineral exploration and extraction and the pressing interests for environmental concerns surrounding the initiative.

In Taita Taveta County, mining is a major economic activity, yet the mineral resources are being extracted without any serious consideration on measures of sustainability, so that the future generation may also enjoy the benefits (Okal, 2010).A central question raised in past studies is how mining projects can be improved and made sustainable, so that these resources will benefit all stakeholders –state, citizens, resource companies, workers and local communities. At the same time, how exploitation be done in a way which is perceived as fair by the present and future generation while contributing to poverty reduction and economic development in the mining areas, Adalo (2013). In the light of the concerns raised, this study seeks to establish the factors that influence performance of artisanal and small scale mining projects in Taita Taveta County, Kenya.

Statement of the Problem

According to (Hartman, 2011), mining companies are good at mining but generally fall short in one or several aspects of project management that are inevitably necessary to ensure that mining projects are delivered consistently. A study by Hansen (2012) established that there are several unique factors that make mining projects in general difficult to manage. These factors include: - increasing environmental pressures, capital intensiveness of mining businesses, long lead times taken from the point of mineral discovery to sale, high level of technical risks involved, increasing speed of technological advancements, the rising and changing expectations from mining project stakeholders, complexity in the geological occurrence of minerals and the unpredictability of minerals' demand and prices in the global market.

The track record of project delivery across the mining industry in Kenya has not been very encouraging; the rate of project failure has been quite high. Artisanal and small scale mining projects in Kenya are normally licensed to operate for duration of 5 years after which they can reapply for renewal (Mining Act, 2016). Statistics from the Ministry of Mining show that only less than half of artisanal and small scale gemstone mining projects reapply for the renewal of their licenses after the first 5-year period of licensing. It has further been found that the average continuous operation lifespan of many artisanal and small scale gemstone mine projects in Taita Taveta County is between 2 to 3 years (MoM, 2017).

Only 1 in 2 mining projects are able to operate continuously for more than 3 years and of those that do so, only less than half of them are able to remain in operation beyond the 5^{th} year. The artisanal and small scale projects that fail to get to the 3^{rd} or 5^{th} year either close down permanently or in some cases resume their operations

intermittently; more often than not under new owners. Statistics on mining activities in Taita Taveta County which is known for producing various types of gemstones reveal that, of the artisanal and small scale gemstone mining projects that had been initiated in the last five years up to 2017, only 25% were operational while 75% were non-operational (MoM, 2017).

Additionally, cases of mine accidents and fatalities to workers, usually caused by incidences of collapsed gemstone mines, have been regularly reported in Taita Taveta County. There are also occasional reports of disgruntled communities who complain bitterly about not adequately enjoying the envisioned benefits from the mineral resources that occur in their land. This among other issues continues to hurt the performance of artisanal and small scale mining projects and also casts the gemstone mining sector in Taita Taveta County in bad light (Ngumi, 2017). It is against this background, having not encountered any previous studies on this topic, that this study sought to establish the factors influencing performance of artisanal and small scale mining projects in Taita Taveta County, Kenya.

Objectives of the Study

The purpose of the study was to establish the factors influencing performance of artisanal and small scale mining projects in Taita Taveta County, Kenya. The specific objectives were:-

- To determine the influence of stakeholder involvement on performance of artisanal and small scale mining projects in Taita Taveta County, Kenya.
- To establish the influence of project management skills on performance of artisanal and small scale mining projects in Taita Taveta County, Kenya.
- To examine the influence of project funding on performance of artisanal and small scale mining projects in Taita Taveta County, Kenya.
- To find out the influence of technology application on performance of artisanal and small scale mining projects in Taita Taveta County, Kenya.

LITERATURE REVIEW

Theoretical Framework

Stakeholder Theory

This theory guided the study in investigating the relationship between project stakeholder involvement and the performance of artisanal and small scale mining projects. Freeman (2004), in this theory identifies the groups which are stakeholders of an organization, and recommends methods by which management can give due regard to the interests of those groups. Agle *et al* (2008) argue that the theory has multiple distinct aspects that are mutually supportive: descriptive, instrumental, and normative. The descriptive approach is used in research to describe and explain the characteristics and behaviors of firms, including how companies are managed, how the board of directors considers corporate constituencies, the way that managers thinks about managing, and the nature of the firm itself significantly across firms in the implementation of projects.

The central idea is that an organization's success is dependent on how well it manages the relationships with key groups such as customers, employees, suppliers, communities, financiers, and others that can affect the realization of its purpose (Freeman & Phillips, 2002).Patton (2008) emphases that the stakeholder model entails all people with legitimate interest to participate in an enterprise do

so to obtain benefits. Michell, Agle & Wood (2008) state that the exercise of stakeholder power is triggered by conditions that are manifest in the other two attributes of the relationship i.e. legitimacy and urgency. Power gains importance when it is legitimate and exercised through a sense of urgency. Highly important and powerful stakeholders are located where power, legitimacy and urgency intersect (Freeman & Phillips, 2002).

The overall purpose of stakeholder theory is to enable the managers to understand stakeholders and strategically manage them (Patton, 2008). The theory emphasizes the significance of the relationship between stakeholder involvements during project initiation and the performance of the projects. The success or failure of the projects is influenced greatly by the participation of various stakeholders which may include the community benefiting from the project and even the project team, (Beach, 2009). Thus the researcher sought to establish whether there was stakeholder involvement right from the project initiation phase by and if this was properly adhered to for the successful performance of the projects.

Management by Objective Theory

This theory guided the study in investigating the relationship between project management skills and the performance of artisanal and small scale mining projects. Management by objectives (MBO) was first popularized by Drucer (1954). MBO is based on the thinking that various hierarchies within companies need to be integrated. Drucer argued that all organizations exist for a purpose, and, to achieve that purpose, top management sets goals and objectives that are common to the whole organization. The MBO approach injects an element of dialogue into the process of passing plans and objectives from one organizational level to another. The superior brings specific goals and measures for the subordinate to a meeting with this subordinate, who also brings specific objectives and measures that he or she sees as appropriate or contributing to better accomplishment of the job. Together they develop a group of specific goals, measures of achievement, and time frames in which the subordinate commits himself or herself to the accomplishment of those goals. The subordinate is then held responsible for the accomplishment of the goals.

In other words MBO is participative goal setting, choosing course of actions and decision making. Despite the critical importance of project completion timeliness, organization practices today remain inadequate in addressing the persistent problem of project completion tardiness. Performance of projects in a timely manner is often a critical factor and measure of project success. However, in many cases, delays plague the delivery of projects in many developing countries where such projects are often implemented**.**

Resource Based View Theory

The theory guided the study in investigating the relationship between project funding and the performance of artisanal and small scale mining projects. Initiated in the mid-1980s, the resource-based view (RBV) has since become one of the dominant contemporary approaches to the analysis of sustained competitive advantage (Barney, 2005). Penrose (1959) provided initial insights of the resource perspective of the firm. However, the resource-based view of the firm (RBV) was put forward by Wenerfelt (1984) and subsequently popularized by Barney's (1991) work. Many authors for example Nelson & Winter (1982); Dierick & Cool (1989); Mohoney & Pandian (1992); Eisenhardt & Martin (2000); Zollo & Winter (2002); Zahra & George (2002) and Winter (2003) made significant contribution to its conceptual development.

The theory emphasized the importance of organization resources and their influence on performance and competitive advantage in the market. The Resource Based View (RBV) explains that each project has resources and capabilities, and that there are resources that can be exploited and become sources of competitive advantage under certain conditions. A resource is an observable (but not necessarily tangible) asset that can be valued and traded such as a brand, a patent, a parcel of land, or a license. A capability, on the other hand, is not observable (and hence necessarily intangible), cannot be valued, and changes hands only as part of its entire unit (Makadok, 2009).

According to RBV, every organization has its own unique resources that enable it to remain competitive in the market, by addressing the rapidly changing environment (Helfat, 2007). These resources may be financial, human, physical, technological and information. The resources may be valuable, rare and non-substitutable (Crook, Ketchen, Combs & Todd, 2008). Every organization should have such resources to have the ability to improve the organization's effectiveness and efficiency by sufficiently majoring on opportunities and neutralizing the threats from competitors.

Project Management Competency Theory

This theory guided the study in investigating the relationship between technology application and the performance of artisanal and small scale mining projects. The work of McClelland & McBer in the 1980s established the competence theory. The authors defined competency as the underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation. Since then a number of competency frameworks have been developed by different project management institutes. Crawford (as cited in Boyatzis, 1982 & Spencer, 1993), puts a model of competence that integrates knowledge, skills, demonstrable performance, and core personality characteristics, noting the last, personality characteristics, as challenging to develop and assess through training.

Crawford, (2010) study found out that project managers "do not necessarily have the required competence or perform the full activities required to promote and implement the changes that they are leading as part of their projects. Interest in project management competence stems from the very reasonable and widely held assumption that if people who manage and work on projects are competent, they will perform effectively and that this will lead to successful projects and successful organizations (Beer, 1990; Smith, 1976). Competence is generally accepted, however, as encompassing knowledge, skills, attitudes and behaviors that are causally related to superior job performance. Crawford (as cited in Boyatzis, 1982 & Spencer, 1993), stated that professional competence in project management is attained by combination of knowledge acquired from training and its subsequent application and other skills developed in the course of work.

Previous management studies have investigated the impact of competency on performance. Dainty,(2004) have argued for a competency based performance model for construction project managers where managerial behavior input is appraised and nine performance indicators for PM competency are developed to comprise team building, leadership, decision-making, mutuality and approachability, honesty and integrity, communication, learning, understanding and application, self-efficacy, and maintenance of external relations. In the context of construction project management; it is assumed that if the project manager and the project team have all the required competence (technological skills) for the performance of projects, then it leads to successful projects.

Conceptual framework

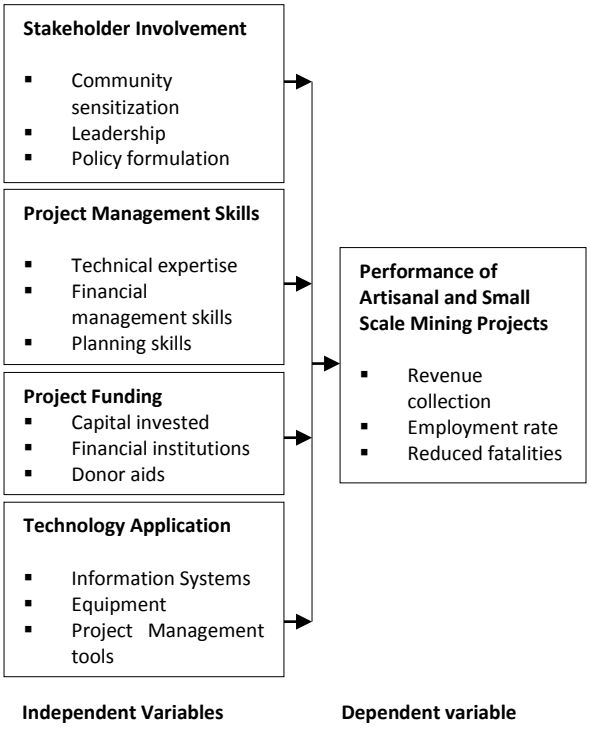

Figure 1: Conceptual framework

Stakeholder Involvement

According to Hilson and Qiulken (2014) community participation is essential in ensuring sustainability of community projects since local people and their legitimate organizations are able to develop the needed capacities to transform community development process beyond the short-term interventions. Community participation is therefore a means through which local self-reliance is stimulated thus reducing dependency on the outside agencies (Spiegel & Veiga, 2010).). According to Hilson (2011) what we observe when communities participate in their own projects include empowering communities improve efficiency, local participation yields better projects, better outcomes as well as greater transparency and accountability enhances service delivery. Community participation can kick start local, private contractors, service providers and it also encourages donor harmonization. Communities who are the beneficiaries of the projects should not be seen as targets of poverty reduction efforts but should be seen as assets and partners in the development process.

Project Management Skills

The required project management skills can include: communication and feedback systems, quality, safety, risk and a conflict management system, supervisory skills, experience, coordination and leadership, communication skills, organizational structures, control mechanisms of subcontractors' works, and the overall managerial actions in planning, organizing, leading and controlling (Nixon, Harrington & Parker, 2012). Pemsel and Wiewiora (2013) convey that planning and management of a project, irrespective of its complexity require the opinions of a system based on the number of stakeholders involved. Mutual communication between these stakeholders enhances division of labour, development of individual competencies and responsibilities for effective decision making.

Project Funding

Although project delivery process does not have a stage called funding, budgetary constraints affect each stage of the process (Sullivan & Mayer, 2010). Mansfield et al (2014) reviewed the correlation between cost overruns and project delays and realized that a good agreement exists between the two factors. Adequate and timely funding is essential for project success. Inadequate funding and untimely funding may interfere with implementation schedule of projects. Gatti (2013) identifies contractors' financial difficulties as major causes of delays in government sponsored construction projects. He further defines contractors' financial difficulties as the contractor not having sufficient funds to carry out the construction works. This includes payment for the

materials, laborers' salaries and equipment to be used for the construction work.

Technology Application

Technology application is simply the use of technology tools and devices in project activities. It involves the usage, skills, knowledge and competence in the usage of technology in performing specific project functions or in solving problems in projects. According to Oke (2011) many organizations invest in technology to improve organizational performance and to gain competitive advantage. Technology's role in project performance depends on how technology systems are designed in organizations. (Goh, 2011) after identifying measures of effectiveness for technology (IT) and project performance and studying the relationship among these measures suggested that organizations should develop technology systems to meet specific business and project needs, and they should not be designed in isolation with the assumptions that people will use it for productive purposes. Mureithi (2011) concluded that technology systems must be developed to meet specific business and project needs.

Empirical Review

Stakeholder Involvement

Ndaro (2017) sought to examine the strategies for effective implementation of small-scale mining projects in Kenya. The study was guided by how community participation strategy influences the implementation of small-scale mining projects in Kenya. The study adopted a descriptive research design. The target population was 280respondents from the registered mines in Taita Taveta and 13 employees in the county in charge of mining. The study established that 77.2% of the respondents agreed with the idea that community involvement/participation strategy influences the performance of small-scale miners in Kenya.

Okoth (2013) did a study on the effects of ASM to the community members and why such community members must be involved in every step of minerals extraction in Migori and Kakamega counties where gold is mined. He found out that, ASM operations tend to stimulate demand for locally produced goods and services, tools, equipment, housing, and various types of infrastructure. Therefore, community participation in the ASM activities is one such strategy that can lead to attaining sustainability of the activities of the artisan miners.

Project Management Skills

Nyaga (2014) sought to investigate the role of construction project management skills on performance of construction projects with reference to construction firms based within Mombasa. The survey targeted selected construction firms within Mombasa County and especially the ones that deal with the major projects that have high impacts to the country economy currently being undertaken within the County. The study employed both quantitative and qualitative research in its data analysis. Data was presented using tables. The study found out that Projects are constrained by inadequate planning skills that are required for effective planning for project success; Project planning is complicated and risky, hence requires varying skills sets for successful project implementation and management.

Project Funding

Siborurema, Shukla and Mbera (2015) sought to investigate the Effects of Projects Funding on their Performance in Rwanda; they considered a case study of Construction of Bukomane-Gikoma Road in Gatsibo District, Rwanda which represented all the

projects having the problems that are similar to those found in typical projects of this research's interest. Such projects in Rwanda have common problems related to financial resources, project technical designs which affect the project implementation time. The general objective of this research was to evaluate the effects of projects funding on their performance. The project funding factors which had been considered during this research were: the project cost estimation, the project technical design, and the project funding policy applicable in Rwanda which influenced the project budgeting. These three factors were the research independent variables on one hand; and the project performance which had been measured in matter of project implementation time and was considered as the dependent variable for this research on the other hand. The target population was composed of two groups; one group was formed by the personnel involved in the projects planning and funding. On analysis of the data, it was found that both the cost estimation and technical design interfered with the projects funding policy and affect negatively the scheduled projects implementation time.

Technology Application

Kang *et al*. (2013) conducted a study on interaction effects of information technologies and best practices on construction project performance. Building from considerable empirical research in the general business literature, this paper quantitatively explores the view that the benefits of information technologies manifest themselves through improvement in work processes. In turn, better work processes lead to increased project performance. Using an overall sample of 133 projects (missing data make specific correlation sample sizes smaller) from the Construction Industry Institute Benchmarking and Metrics database, the paper analysed correlations between technology use and integration, best practices, and project performance measured with cost, schedule, and rework metrics. Data was also collected to assess the complementary interaction between technology use, work processes as measured by best practices, and performance.

The findings showed that there were significant beneficial correlations between information technology use like intranet and internet and performance and slightly more significant beneficial correlations between best practice use and performance. Interaction effects of the combined use of information technologies and best practices against performance was assessed, finding several positive correlations, although limited data availability prevented robust statistical evaluation. Overall, the paper concluded there was evidence that the benefits of information technology in construction could be experienced through changes in work processes.

RESEARCH METHODOLOGY

This study employed a descriptive research design to establish factors influencing performance of artisanal and small scale mining projects in Taita Taveta County, Kenya. The target population comprised of 155 artisanal and small scale mining projects in Taita Taveta County, Kenya as per the records at Taita Taveta County by December, 2017. The Multiple Regression model that aided the analysis of the variable relationships was as follows:

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon,}$$

Where; Y= Performance of Artisanal and small scale Mining Projects (dependent variable);

β_0= Constant (coefficient of intercept);

X_1= Stakeholder Involvement (independent variable);

X_2= Project management skills (independent variable);

X_3= Project Funding (independent variable);

X_4= Technology application (independent variable);

ε = Error term;

$\beta_1 \ldots \beta_4$= regression coefficient of four variables.

RESULTS AND DISCUSSIONS

Performance of Artisanal and Small Scale Mining Projects

The study sought to examine the factors influencing performance of artisanal and small scale mining projects in the study area. The study sought to determine performance of artisanal and small scale mining projects with reference to Taita Taveta County, attributed to the influence of stakeholder involvement, project management skills, project funding and technology application. The study was particularly interested in three key indicators, namely revenue collection, employment rate and reduced fatalities, with all the three studied over a 5 year period, running from 2013 to 2017. Table 1 below presented the findings.

Findings in Table 1 revealed improved performance of artisanal and small scale mining projects across the 5 year period running from the year 2013 to 2017. Revenue collection recorded positive growth with a majority affirming to less than 10% in 2013 (42.3%) and 2014 (37.7%), to 10% in 2015 (36.1%) then more than 10% in 2016 (41.1%) and 2017 (37.5%). A similar trend was recorded in employment rate, growing from less than 10% (44.1%) in 2013 and (35.2%) in 2014, to more than 10% in 2015 (36.4%), 2016 (40.4%) and 2017 (37.3%). Reduced fatalities further recorded positive growth with a majority affirming to less than 10% in 2013 (37.9%) and 2014 (35.9%), to 10% in 2015 (35.9%) then by more than 10% in 2016 (39.0%) and 2017 (36.2%). It was deduced from the findings that key performance of artisanal and small scale mining projects indicators have considerably improved as influenced by, among other performance of artisanal and small scale mining projects' drivers, stakeholder involvement, project management skills, project funding and technology application.

Table 1: Performance of Artisanal and Small Scale Mining Projects

Revenue Collection	**2013**	**2014**	**2015**	**2016**	**2017**
Increased by less than 10%	42.3	37.7	31.6	30.7	29.5
Increased by 10%	31.8	32.9	36.1	28.2	33
Increased by more than 10%	25.9	29.4	32.3	41.1	37.5
Employment Rate	**2013**	**2014**	**2015**	**2016**	**2017**
Increased by less than 10%	44.1	35.2	33.4	25.7	27.1
Increased by 10%	31.7	32.6	30.2	33.9	35.6
Increased by more than 10%	23.5	32.2	36.4	40.4	37.3
Reduced Fatalities	**2013**	**2014**	**2015**	**2016**	**2017**
Increased by less than 10%	37.9	35.9	31.2	25.7	33.1
Increased by 10%	36.2	31.3	35.9	35.3	30.7
Increased by more than 10%	25.9	32.8	32.9	39.0	36.2

Stakeholder Involvement

The first objective of the study was to establish the influence of stakeholder involvement on performance of artisanal and small scale mining projects in Kenya. Respondents were thus asked to indicate the extent to which they agreed with various statements relating to stakeholder involvement and its influence on performance of artisanal and small scale mining projects in Kenya. Responses were given on a five-point scale where: 1= Very small extent; 2= Small extent 3= Moderate extent; 4 = Great extent; 5= Very great extent. The scores of 'Very small extent' and 'Small extent' have been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'Moderate extent' has been taken to represent a statement agreed upon moderately, equivalent to a mean score of 2.6 to 3.4. The score of 'Great extent' and 'Very great extent' have been taken to represent a statement agreed upon to a great extent equivalent to a mean score of 3.5 to 5.0.

The study findings in Table 2, with a grand mean of 3.261 majority of the respondents indicated to a moderate extent that there was stakeholder involvement to enhance engagement initiatives in the projects (3.234); there was a donor involvement in mobilization of the resources for implementation of the project activities (3.230); The stakeholder involvement yields expected implementation projects (3.788); The stakeholder involvement enhance transparency and accountability in the projects (3.220); The stakeholder involvement encourage ownership of the project activities (3.218) and there were implementation problem solutions from the problem identification in the projects (2.880). The study findings imply that stakeholder involvement influence performance of artisanal and small scale mining projects in the study area.

Table 2: Stakeholder Involvement

Statement	Mean	Std
Do you have stakeholder involvement to enhance engagement initiatives in the projects?	3.234	1.832
Is there donor involvement in mobilization of the resources for implementation of the project activities?	3.230	1.802
Does stakeholder involvement yield the expected implementation projects?	3.788	1.226
Does stakeholder involvement enhance transparency and accountability in the projects?	3.220	1.790
Does stakeholder involvement encourage ownership of the project activities?	3.218	.998
Are there implementation problem solutions from the problem identification in the projects?	2.880	1.345
Average mean	**3.261**	

Project Management Skills

The second objective of the study was to establish the influence of project management skills on performance of artisanal and small scale mining projects in Kenya. Respondents were thus asked to indicate the extent to which they agreed with various statements relating to project management skills and its influence on performance of artisanal and small scale mining projects in Kenya. Responses were given on a five-point scale where: 1= Very small extent; 2= Small extent 3= Moderate extent; 4

= Great extent; 5= Very great extent. The scores of 'Very small extent' and 'Small extent' have been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'Moderate extent' has been taken to represent a statement agreed upon moderately, equivalent to a mean score of 2.6 to 3.4. The score of 'Great extent' and 'Very great extent' have been taken to represent a statement great extent upon equivalent to a mean score of 3.5 to 5.0.

Table 48 below presents the findings. With a grand mean of 2.963, a majority of respondents said to a moderate extent that the project team possess adequate project financial management skills (2.876); The project stakeholders are satisfied with management skills of the project personnel (3.290); The project team possess planning, communication and technical skills (3.219); The project resources managed properly during the implementation of the projects (2.908); The project managers possess budgeting and auditing skills to enhance completion of the projects (2.458); The project managers financial management skills has enhanced timeliness and quality of the projects (3.114). The study results imply that project management skills influence performance of the artisanal and small scale mining projects in the study area.

The study findings were in line with literature review by Kaliba, Muya, & Mumba (2009 who observed that the required project management skills can include: communication and feedback systems, quality, safety, risk and a conflict management system, supervisory skills, experience, coordination and leadership, communication skills, organizational structures, control mechanisms of subcontractors' works, and the overall managerial actions in planning, organizing, leading and controlling. Zami, (2011) convey that planning and management of a project, irrespective of its complexity require the opinions of a system based on the number of stakeholders involved. Mutual communication between these stakeholders enhances division of labour, development of individual competencies and responsibilities for effective decision making. Winch (2010) puts competencies into threshold or surface and differentiating or core competencies. Threshold competencies need to be practical while core competencies are yardsticks for top performers for successful complement of the projects.

Table 3: Project Management Skills

Statements	Mean	Std. Dev
The project team possess adequate project financial management skills	2.876	1.562
The project stakeholders are satisfied with management skills of the project personnel	3.290	1.853
The project team possess planning, communication and technical skills	3.129	1.742
The project has adequate communication and problem solving skills to manage projects properly during the implementation of the projects	2.908	1.238
The project managers possess budgeting and auditing skills to enhance completion of the projects	2.458	1.258
The project managers financial management skills has enhanced timeliness and quality of the projects	3.114	1.654
Average mean	**2.963**	

Project Funding

The third objective of the study was to establish the influence of project funding on performance of artisanal and small scale mining projects in Kenya. Respondents were thus asked to indicate the extent to which they agreed with various statements relating to project funding and its influence on performance of artisanal and small scale mining projects in Kenya. Responses were given on a five-point scale where: 1= Very small extent; 2= Small extent 3= Moderate extent; 4 = Great extent; 5= Very great extent. The scores of 'Very small extent' and 'Small extent' have been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'Moderate extent' has been taken to represent a statement agreed upon moderately, equivalent to a mean score of 2.6 to 3.4. The score of 'Great extent' and 'Very great extent' have been taken to represent a statement great extent upon equivalent to a mean score of 3.5 to 5.0.

Table 4 below presented the findings. With a grand mean of 3.034, a majority of respondents can be said to have agreed to a moderate extent that there were adequate financing mechanisms in the project to enhance timely completion of the project (3.120); The project financing mechanisms have been enhanced for the reduction of cost overruns (2.786); The financial management of the capital invested in the project is meant for the delivery of a quality project (2.908); The capital invested in the project is adequate to ensure the project is completed within the stipulated time and cost. (3.291); There is transparency and accountability on the management of the project funds from the agreed financing mechanisms (2.886); There was a continuous budgeting and auditing of the projects funds to enhance transparency and accountability in the projects (3.210). The study findings imply that project funding influence completion of the artisanal and small scale mining projects in the study area.

The study findings were in agreement with the findings of Aiyetan, Smallwood, & Shakantu (2011) found that financial difficulties were the most important cause of poor performance of projects. Kaliba et al. (2009) postulated that insufficient capital is one of the major causes of financial difficulties among projects. Poor financial control can lead to insufficient capital (Auma, 2014). Hence, the project will have excessive debt which causes them to face financial difficulties as they cannot pay back the debt. Mahdavinejad, & Molaee (2011) found that financial shortages are due to poor materials planning, inefficient communication, unreliable suppliers and late delivery. Chirisa (2014) stated that poor financial planning is mistake number one in project management. He contends that financial issues to be factors influencing performance of projects

Table 4: Project Funding

Statements	Mean	Std. Dev
There are adequate financing mechanisms in the project to enhance performance of the project	3.120	1.459
The project financing mechanisms have been enhanced for the reduction of cost overruns	2.786	1.236
The financial management of the capital invested in the project is meant for the delivery of a quality project	2.908	1.085

The capital invested in the project is adequate to ensure the project is performance within the stipulated time and cost.	3.291	1.542
There is transparency and accountability on the management of the project funds from the agreed financing mechanisms	2.886	1.236
There is a continuous budgeting and auditing of the projects funds to enhance transparency and accountability in the projects	3.210	1.563
Average mean	**3.034**	

Technology Application

The fourth objective of the study was to establish the influence of technology application on performance of artisanal and small scale mining projects in Kenya. Respondents were thus asked to indicate the extent to which they agreed with various statements relating to technology application and its influence on performance of artisanal and small scale mining projects in Kenya. Responses were given on a five-point scale where: 1= Very small extent; 2= Small extent 3= Moderate extent; 4 = Great extent; 5= Very great extent. The scores of 'Very small extent' and 'Small extent' have been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'Moderate extent' has been taken to represent a statement agreed upon moderately, equivalent to a mean score of 2.6 to 3.4. The score of 'Great extent' and 'Very great extent' have been taken to represent a statement great extent upon equivalent to a mean score of 3.5 to 5.0.

Table 5 below presented the findings. With a grand mean of 3.152, a majority of respondents said to a moderate extent that the project has invested in the information systems for documentation of the defined project roles and implement the related process. (3.210); the project management tools enhances formal and consistent processes (2.986); the information systems are used for communication of process and roles (3.228); the project information systems communicate openly among the all the team members including virtual teams (3.220); Project management tools to monitor and manage the project outcomes (3.118). The study findings can be deduced that technology application is an important factor on performance of artisanal and small scale mining projects in the study area.

Table 5: Technology Application

Statements	Mean	Std. Dev
The project has invested in the information systems for documentation of the defined project roles and implement the related process	3.210	1.238
The project management tools enhances formal and consistent processes	2.986	1.322
The information systems are used for communication of process and roles	3.228	1.903
The project information systems communicate openly among the all the team members including virtual teams	3.220	1.285
Project management tools to monitor and manage the project outcomes	3.118	1.228
Average mean	**3.152**	

Multiple Regression Analysis Model

The study adopted a multiple regression analysis so as to establish the relationship of independent variables and the dependent variable. It is notable that there existed strong positive relationship between the independent variables and dependent variable as shown by R value (0.851).

Analysis of Variance (ANOVA)

F-test was done to test the effect of independent variables on the dependent variable simultaneously. F-statistic test basically shows whether all the independent variables included in the model jointly influence the dependent variable. Based on the study results of the ANOVA Test or F-test, obtained F-count (calculated) value was 9.687. This was greater than the F-critical (table) value (2.568) with significance of 0.000. Since the significance level of 0.000< 0.05 we concluded that the set of independent variables influence the performance of artisanal and small scale mining projects in the study area and this showed that the overall model was significant.

Regression Coefficients

The study conducted a multiple regression analysis so as to determine the relationship between the dependent variable and independent variables. From the study findings on the regression equation established, taking all factors into account (independent variables), constant at zero performance of artisanal and small scale mining projects was 23.908. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in stakeholder involvement will lead to a 0.788 increase in performance of artisanal and small scale mining projects; a unit increase in project management skills will lead to a 0.723 increase in performance of artisanal and small scale mining projects, a unit increase in project funding will lead to 0.658 increase in performance of artisanal and small scale mining projects and a unit increase in technology application will lead to 0.599 increase in performance of artisanal and small scale mining projects. This infers that stakeholder involvement contributed most to performance of artisanal and small scale mining projects.

Further, based at 5% level of significance, stakeholder involvements was found to have a calculated t = 4.780 (greater than the tabulated value of t = 1.96) and a significance level of 0.000 thus the value of less than 0.05; Project management skills showed a calculated t =3.832 (greater than the tabulated value of t = 1.96) and a significance level of 0.002 thus the value of less than 0.05, Project funding was found to have a calculated t =3.220 (greater than the tabulated value of t = 1.96) and a significance level of 0.003 thus the value of less than 0.05, technology application was found to have a calculated t =2.123 (greater than the tabulated value of t = 1.96) and a significance level of 0.007 thus the value of less than 0.05 hence the most significant factor was stakeholder involvement.

With the aid of model $\mathbf{Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta 4X4+\varepsilon;}$ Y = Dependent variable (performance of artisanal and small scale mining projects); α = Constant (The intercept of the model), β = Coefficient of the X variables (independent variables); X1= Stakeholder involvement; X_2= Project Management Skills; X_3= Project Funding; X_4= Technology application; ε= is the error term. Therefore, the general form of the equation was to predict performance of artisanal and small scale mining projects from X1= Stakeholder involvement; X_2= Project Management Skills; X_3= Project Funding; X_4= Technology application is: ($\mathbf{Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 +\varepsilon}$) becomes: $\mathbf{Y= 23.908+ 0.788X_1+ 0.723X_2+ 0.658X_3+ 0.599X_4}$.This indicates that X1= Stakeholder involvement; X_2=

Project Management Skills; X_3= Project Funding; X_4= Technology application = 23.908 + 0.788*Stakeholder Involvement + 0.723*Project Management Skills + 0.658*Project Funding+ 0.599* Technology application.

Table 6: Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.851	.724	.702	.001

ANOVA

Model	Sum of Squares	D.f	Mean Square	F	Sig.
Regression	12.632	4	3.158	9.687	.000
Residual	30.972	95	.3260		
Total	43.604	99			

Coefficient Results

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		β	Std. Error	**B**		
1	(Constant)	23.908	4.870		4.909	.000
	X_1-SI	.788	.164	.585	4.780	.001
	X_2-PMS	.723	.188	.655	3.832	.002
	X_3-PF	.658	.204	.485	3.220	.003
	X_4-Te	.599	.270	.609	2.123	.007

a. Dependent Variable: Performance

CONCLUSION AND RECOMMENDATIONS

From the descriptive statistics the study established that to a moderate extent that they had stakeholder involvement to enhance engagement initiatives in the projects. There was donor involvement in mobilization of the resources for implementation of the project activities and yields expected implementation. The stakeholders' involvement enhances transparency and accountability in the projects and encourages ownership of the project activities.

From the descriptive statistics a majority of respondents indicated to a moderate extent that the project team possesses adequate project management skills. The project stakeholders are satisfied with management skills of the project personnel. The project team possesses planning, communication and technical skills. The project resources are managed properly during the implementation of the projects. The project managers possess budgeting and auditing skills to enhance completion of the projects. The project

managers' financial management skills have enhanced timeliness and quality of the projects.

The study established that a majority of respondents indicated to moderate extent that there were adequate financing mechanisms in the project to enhance timely completion of the project. The project financing mechanisms have been enhanced for the reduction of cost overruns. The financial management of the capital invested in the project is meant for the delivery of a quality project. The capital invested in the project is adequate to ensure the project is completed within the stipulated time and cost. There is transparency and accountability on the management of the project funds from the agreed financing mechanisms. The project personnel take care of the available financial resources. There was a continuous budgeting and auditing of the projects funds to enhance transparency and accountability in the projects.

From the descriptive statistics a majority of respondents indicated to a moderate extent that the project has invested in the information systems for documentation of the defined project roles and implement the related process. The project management tools enhance formal and consistent processes. The information systems are used for communication of process and roles. The project information systems communicate openly among the all the team members including virtual team. Project management tools to monitor and manage the project outcomes. The study findings can be deduced that technology application is an important factor in the performance of artisanal and small scale mining projects in the study area.

Conclusions of the Study

The study concludes that stakeholder involvement influence performance of artisanal and small scale mining projects in Kenya. The regression coefficients of the study show that stakeholder involvement has a significant positive influence on performance of artisanal and small scale mining projects in Kenya. This implies that increasing levels of stakeholder involvement would increase the levels of performance of artisanal and small scale mining projects in Kenya.

The study concludes that project management skills influence performance of artisanal and small scale mining projects in Kenya. The regression coefficients of the study show that project management skills has a significant positive influence on performance of artisanal and small scale mining projects in Kenya. This implies that increasing levels of project management skills would increase the levels of performance of artisanal and small scale mining projects in Kenya.

The study concludes that project funding influence performance of artisanal and small scale mining projects in Kenya. The regression coefficients of the study show that project funding has a significant positive influence on performance of artisanal and small scale mining projects in Kenya. This implies that increasing levels of project funding would increase the levels of performance of artisanal and small scale mining projects in Kenya.

Finally, the study concludes that technology application influences performance of artisanal and small scale mining projects in Kenya. The regression coefficients of the study show that technology application has a significant positive influence on performance of artisanal and small scale mining projects in Kenya. This implies that increasing levels of technology application would increase the levels of performance of artisanal and small scale mining projects in Kenya.

Recommendations of the Study

Based on the study findings, the study found out that stakeholder involvement, project management

skills, project funding and technology application as the major factors that mostly influence performance of artisanal and small scale mining projects in Kenya and suggest the following recommendations. The study recommends for enhancement of stakeholder involvement in the projects. There is need to develop stakeholder plans that describe the project stakeholder requirements.

The study recommends for the project management skills to be further instilled in project teams to enhance performance of artisanal and small scale mining projects in Kenya. The planning, communication, leadership and management skills of manager should be adequate. The project manager should be competent enough to manage the project and should also possess ability for decision making and conflict resolution.

There is need to ensure that there is adequate project financing to boost the performance of artisanal and small scale mining projects in Kenya in time. This will reduce budgetary constraints, cost overruns, reduce interference with implementation of project schedules, and reduces insufficient capital to run project activities. The internal controls and record keeping are important to boost performance of artisanal and small scale mining projects in Kenya.

Knowledge Gained for Policy and Practice

The study contributes to the body of knowledge by examining the factors influencing the performance of artisanal and small scale mining projects in Kenya is greatly affected by stakeholder management, project management skills, project funding and technology application. The study contributes to the existing literature in the field of project management by elaborating exiting theories, models and empirical studies on performance of artisanal and small scale mining projects in Kenya

Areas for Further Research

A review of literature indicated that there is limited of research on the factors influencing performance of artisanal and small scale mining projects in the Kenyan context. Thus, the findings of this study could serve as a basis for future studies on other factors influencing performance of artisanal and small scale mining projects, in their implementation, in Kenya. The effects of the factors influencing performance of artisanal and small scale mining projects in Kenya, has not been widely studied which presents gaps in African and Kenyan contexts. This study confined itself to factors influencing performance of artisanal and small scale mining projects in Taita Taveta County in Kenya. A comparative study should be carried out to compare whether the findings also apply for other projects in different regions in order to validate whether the findings can be generalized in Kenya.

REFERENCES

Agot J. S. (2012). The Glittering Facade: Effects of Mining Activities on Surrounding Communities. Third World Network—Africa (TWN—Africa); Nairobi, Kenya.

Aiyetan, O. A., Smallwood, J. J., & Shakantu, W. (2011). Influences on construction project delivery time performance. *In the proceeding of Third Built Environment conference*, Cape Town, South Africa.

Amutabi, M. (2011), Gender and Mining in Kenya. *A Journal of Culture and African Women Studies*. African Resource Centre.

Anfara, V. A., & Mertz, N. T. (Eds.). (2006). *Theoretical Frameworks in Quantitative Research*. Thousand Oaks, CA: Sage.

Auma, E. (2014). Factors Affecting the Performance of Construction Projects in Kenya: A Survey of Low –Rise Buildings in Nairobi Central Business District. *The International Journal of Business & Management, 2 (12), 115.*

Babbie, E. (2010). *Survey research methods* (2nd ed.). Belmont: Woodsworth.

Bailey, J., & Burch, M. (2011). Ethics for behavior analysts, Routledge.

Barney, J. (1986). Strategic factor markets: Expectations, luck, and business strategy. Management Science, 32, 1231-1241.

Bordens, K. S., and Abbott, B. B. (2008). *Research design methods:* A process approaches (7th ed.). New York, NY: McGraw-Hill.

Bruijn , D. H. (2002). Performance Measurement in the Public Sector: Strategies to cope with the Risks of Performance Measurement. *International Journal of Public Sector Management.*

Chan, M., & Kumaraswamy, M. (2007). A comparative study of causes of time overruns in Hong Kong construction projects*. International Journal of Project Management* 15(1), 55-63.

Chan, M., Scott, D., & Chan, L. (2004). Factors affecting the success of a construction project: *Journal of Construction Engineering and Management* 130 pp. 153.

Chen, H. X. (2009). Approaches to Quantitative Research: A Guide for Dissertation Students, Ireland: Oak Tree Press.

Chirisa, I. (2014). Building and urban planning in Zimbabwe with special reference to Harare: Putting needs, costs and sustainability in focus.

Conner, K. R. (1991). A historical comparison of resource-based theory and five schools of thought within the industrial organization economics: Do we have a new theory of the firm? Journal of Management, 17, 121-154.

Cooper, D. R., & Schindler, P. S. (2010). *Business Research Methods.* (8th ed.). Mc Graw-Hill, New Delhi, India.

Creswell, J. W. (2003).*Research design: Quantitative, qualitative, and mixed methods approaches* (2nd Ed.). Thousand Oaks, CA: Sage.

Cronbach, L. J. (1971). *Test validation*. In R. L. Thorndike (Ed.). Educational Measurement (2nd Ed.). Washington, D. C.: American Council on Education.

Crook, T. R. (2011). Strategic Resources and Performance: A Meta-analysis.

Field, K. (2006). The Use of Quantitative Content Analysis in Case Study Research.

Flyvbjerg, B. (2005). Policy and Planning of Large Infrastructure Project Problems, Causes, Cures. *World Bank Policy Research Working Paper 3781*, Cambridge University Press, Cambridge.

Fraenkel, J. R., & Wallen, N. E. (2008). *How to design and evaluate research in education*. Boston: McGraw-Hill.

Freeman, R. E (2004). "A Stakeholder Theory of Modern Corporations", Ethical Theory and Business, 7th edn

Fudge, N., & Wolfe, C. D. A. (2008). Assessing the promise of stakeholder involvement in health service development: ethnographic study. *BMJ,* 336, 313.

Gall, M. D., Gall, J. P., & Borg, W. R. (2007). Educational Research: An Introduction. (8th edn), Pearson.

Gatti, S. (2013). *Project finance in theory and practice: designing, structuring, and financing private and public projects*. Academic Press.

Hansen, K. T. (2012). Managing Africa's Natural Resource Endowments. New Dispensation and Good-fit Approaches.

Hartman, H. L. (2011). *SME Mining Engineering Handbook*, Society for Mining, Metallurgy, and Exploration.

Heemskerk, M. (2015). Collecting data in artisanal and small-scale mining communities: Measuring progress towards more sustainable livelihoods. Nat. Resour. Forum

Hilson, G. (2011). Child labour in African artisanal mining communities: Experiences from Northern Ghana. *Development and Change*, *41*(3), 445-473.

Hilson, G. (2013). Small-scale Mining and its Socio-economic Impact in Developing Countries. Nat. Resour. Forum.

Hilson, G., & McQuilken, J. (2014). Four decades of support for artisanal and small-scale mining in sub-Saharan Africa: a critical review. *The Extractive Industries and Society*, *1*(1), 104-118.

Hruschka, F., & Echavarria, C. (2011). *Rock-Solid Chances: For Responsible Artisanal and Small Scale Mining, in Series on Responisble ASM, No. 3* 2011, Alliance for Responsible Mining [ARM].

Ika, L. A. (2012). Project management for development in Africa: Why projects are failing and what can be done about it. *Project management journal*, *43*(4), 27-41.

Kaliba, C. Muya, M. & Mumba, K. (2009). Cost Escalation and Schedule Delaying Building Construction Projects in Zambia, International Journal of Project Management, (27), 5, 522-531.

Kerzner, H. (2013). A Systems Approach to Planning, Scheduling and Controlling. John Wiley & Sons.

Koh, H. C., & Tan, G. (2011). Data mining applications in healthcare. *Journal of healthcare information management*, *19*(2), 65.

Kothari, C. R. (2004). *Research methodology: Methods and techniques.* New Delhi: New Age International (P) Limited Publishers.

Kumar, C. (2006). *Research Methods. (*2nd edn.). New York: Harper and Row.

Laurence, D. (2011). Establishing a sustainable mining operation: an overview. *Journal of Cleaner Production*, *19*(2-3), 278-284.

Leary, M. R. (2011). Introduction to Behavioral Research Methods, Books a La Carte. (7th edn). Pearson Publishers.

Lin-lin, X., Yang, Y., Hu, Y., & Chan, A.P.C. (2014). Understanding project stakeholders' perceptions of public participation in China's infrastructure and construction projects: Social effects, benefits, forms, and barriers", Engineering, *Construction and Architectural Management*, 21(2), 224 – 240.

Marcelino-Sádaba, S., Amaya, P., Angel, M. Echeverria, L. & Pedro, V. (2014). Project Risk Management Methodology for Small Firms.

Mahdavinejad, M., & Molaee, M. (2011). The result of delayed projects on publics' satisfaction in Tehran. *In 2nd International Conference on Construction and Project Management IPEDR*. Singapore (pp. 16-18).

Marchewka, J. T. (2006). *Information Technology Project Management: Providing Measurable Organizational Value*, 2nd ed., Wiley, New York, NY.

Ministry of Mining. (2016).*Annual Report on the Performance of Artisanal and Small Scale Mining Operations in Kenya.*

Mugenda, O. M., & Mugenda, A. G. (2003). *Research Methods, Quantitative & Qualitative Approaches*. Acts Press: Nairobi.

Müller, R., & Jugdev, K. (2012). Critical success factors in projects Pinto, Slevin, and Prescott – the elucidation of project success. *International Journal of Managing Projects In Business*, *5*(4), 757-775.

Musa, G. H. (2009). "Determination of Factors Influencing Projects Delays in Water Projects in Kenya: The Case of County government Funded Projects". Unpublished MBA Thesis, University of Nairobi.

Mwandali, D. (2006). "Analysis of Major Factors that Affect Projects Management: A Case of Kenya Railways Projects", Unpublished MBA Thesis, University of Nairobi.

Nana, A. (2010). Delays in building construction projects in Ghana.

Ndaro, T. V. (2017). Strategic Practices Influencing the Implementation of Small-Scale Mining Projects In Kenya: A Case Of Artisan Miners In Taita Taveta County.

Nyandika. (2014). *Influence of stakeholders' participation on performance of road projects at Kenya National Highways Authority* ; A Research Project Submitted in Partial fulfillment for the award of degree of master of science in project management of Jomo Kenyatta University of Agriculture and Technology

Nixon, P., Harrington, M., & Parker, D. (2012). Leadership performance is significant to project success or failure: a critical analysis. *International Journal of productivity and performance management*, *61*(2), 204-216.

Ondieki, W. M. (2011). *Factors influencing stakeholders' participation in monitoring and evaluation of Local Authority transfer fund projects in Kisii municipality, Kenya.* Available at http://erepository.uonbi.ac.ke:8080/handle/123456789/3906.

Onions, W. (2007). A Knowledge Based Theory of Project Management: McGraw-Hill, pp 61-72.

Orotho, J. A. (2009). Essentials of Educational and Social Science Research Methods. Nairobi: Masola Publishers.

Pemsel, S., & Wiewiora, A. (2013). Project management office a knowledge broker in project-based organisations. *International Journal of Project Management*, *31*(1), 31-42.

Project Management Institute. (2012). A Guide to the Project Management Body of Knowledge. 5th edn.

Salthouse, T. A. (2012). Robust Cognitive Change. *Journal of the International Neurosychological Society, 18, 749-756.*

Särndal, V. S., Swensson D., & Wretman, E. W. (2011). Sample Survey Principles and Methods. New York: Oxford University Press.

Sampson, B. (2007). Get with the project. Professional Engineering, 20 (12), 41-42.

Saunders, M. (2011). *Research Methods for Business Students*.(4thedn.). Harlow: Financial Times Prentice Hall.

Serdar, S. D. (2009). The role of top management team's information technology (IT) infrast9999ructure view on new product development: Conceptualizing IT infrastructure capability as a mediator. *European Journal of Innovation Management*, *12*(3), 364 – 385.

Spiegel, S. J., & Veiga, M. M. (2010). International guidelines on mercury management in small-scale gold mining. *Journal of Cleaner Production*, *18*(4), 375-385.

Sawang, S., & Unsworth, K. (2011). Success Traits for a Construction Project. *Journal of Construction Engineering & Management*,*138*(10), 1131-1138.

Spiegel S. J. (2011). Governance Institutions, Resource Rights Regimes, and the Informal Mining Sector:

Winch, G. M. (2010). Managing construction projects. John Wiley & Sons.

World Bank. (2013). *Artisanal and Small Scale Mining*. Artisanal Mining Focus.

Yin, R. K. (2013).*Case Study Research: Design and Methods, (3rd edition)*. Sage Publications, London.

Zami, M. S. (2011). Potentialities of contemporary earth construction addressing urban housing crisis in Africa –A lesson from Zimbabwe. Plenary Paper Session I: Water, 66.

Zhang, Z. H. (2000). *Implementation of Total Quality Management: An Empirical Study of Chinese Manufacturing Firms.* Unpublished doctoral dissertation, University of Groningen, Groningen, Netherlands.

Zou, P. X. W., Zhang, G., & Wang, J. (2006). *Identifying key risks in construction projects: life cycle and stakeholder perspectives.* www.prress.net/papers/Zou_risks-construAccessed 4/9/2012.