

American Journal of **Public Policy and Administration** (AJPPA)



Institutional Policy Implementation and Uganda's Mineral Resources Management

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Article History

Submitted 28.08.23; Revised Version Received 15.12.23; Accepted 28.12.23

Abstract

Purpose: This study examines the Mediating effect of Institutional Policy Implementation on Uganda's Mineral Resource Management.

Materials and Methods: The study uses a crosssectional design suggested by Bell et al., (2018) to examine Mediating effect of Institutional Policy Implementation on Uganda's Mineral Resource Management. This design involves data collection at a single point in time to identify patterns between variables. The study population consisted of 39 institutions that are involved in the management of mineral resources in Uganda (Ministry of energy and mineral development, 2022). The study targeted a sample size of 34 institutions, determined using the sample determination table developed by Krejcie and Morgan (1970).

Findings: The results in this study indicate that Managerial Competence has a direct and significant impact on Uganda's Mineral Resource Management. This means that competent managers are better equipped to make informed decisions, efficiently allocate resources, and implement best practices in the mining sector. The study also reveals that the relationship between Managerial Competence and Mineral

Resource Management outcomes is not entirely independent of external factors.

Implications to Theory, Practice and Policy: The Institutional Theory, developed by Meyer and Rowan in 1977, provides a theoretical framework to understand how institutions and organizational structures influence behavior and decision-making within organizations and it helped to introduced Institutional policy implementation which acted as a mediator in this relationship, meaning that the effectiveness of policies set by relevant institutions can influence how managerial competence translates into actual outcomes in Uganda's mining industry. The policy implication in this study is that Uganda's policy makers should prioritize strengthening institutional capacity utilization through targeted training programs and capacity-building initiatives as this would promote the achievement of sustainable and responsible Mineral Resource Management in the country.

Keywords: *Institutional Policy Implementation, Management Competence, Mineral Resource Management*

1.0 INTRODUCTION

Management of mineral resources is important for ensuring sustainable economic growth and development while minimizing negative environmental and social impacts (Smith, 2021; Johnson et al., 2022). These resources contribute significantly to global economies by serving as key inputs for various industries such as manufacturing, construction, energy, and technology (World Bank, 2020; International Council on Mining and Metals, 2021). Moreover, mineral resources play a vital role in African economies, including those in East Africa, where they have contributed to revenue generation, infrastructure development, and job creation (African Development Bank, 2021; UNCTAD, 2022). According to the World Bank, (2020), mineral resources make a substantial contribution to the GDP of both global and African economies. The mining sector globally, accounts to approximately 10 percent of the world's GDP, with mineral resources being a significant driver of economic growth (World Bank, 2020). In Africa, the mineral sector contributes significantly to GDP growth but with mining activities contributing to around 20 percent of the continent's GDP in certain countries (UNCTAD, 2022).

Nevertheless, East African countries, such as Kenya, Tanzania, and Uganda, have experienced notable contributions from the mineral sector to their respective economies' GDP. For instance, in Tanzania, mining alone contributes to around 5 percent revenue to the country's GDP, while in Kenya, the mining sector contributes to approximately 1 percent revenue to GDP (African Development Bank, 2021). These figures highlight the economic importance of mineral resources to East Africa countries. The extraction and utilization of mineral resources in East Africa have also led to infrastructure development and employment opportunities. For example, mining activities in Tanzania have spurred the growth of related industries, contributing to job creation and infrastructure improvements such as roads, ports, and power supply (African Development Bank, 2021).

Similarly, in Kenya, the mining sector has the potential to create employment opportunities and support the development of infrastructure, particularly in regions with significant mineral deposits (World Bank, 2020). These contributions demonstrate the significant role that mineral resources play in driving economic growth and development in East Africa. Management competence and institutional policy implementation are critical factors in the effective management of mineral resources and ensuring sustainable extraction, utilization, and socio-economic benefits (Smith, 2021; Johnson et al., 2022). Competent management teams possess the necessary skills, knowledge, and expertise to implement best practices in resource exploration, extraction, and processing, while also addressing environmental and social impacts (Hilson, 2020; International Council on Mining and Metals, 2021).

Institutional policies, regulations frameworks guide the governance of mineral resources, providing a foundation for responsible and transparent practices (UNECA, 2020; UNEP, 2023). Effective policy implementation ensures compliance with environmental standards, community engagement, revenue management, and sustainable development objectives (World Bank, 2022; UNCTAD, 2022). Furthermore, strong institutions with robust monitoring and enforcement mechanisms play a pivotal role in preventing corruption, ensuring accountability, and promoting equitable distribution of benefits from mineral resource extraction (Transparency International,

2021; African Union, 2022). The combination of management competence and institutional policy implementation fosters responsible and sustainable management of mineral resources, leading to long-term socio-economic development, environmental protection, and improved livelihoods (United Nations, 2021; African Development Bank, 2021). Nevertheless, although strong institutions with robust monitoring and enforcement mechanisms may play a pivotal role in preventing corruption, ensuring accountability, and promoting equitable distribution of benefits from mineral resource extraction, such contributions of strong institutions on management competence has never been investigated in Uganda. This study therefore investigates the contributions of strong Institution Policy Implementation on the Management Competence of Uganda's Mineral Resources.

2.0 LITERATURE REVIEW

Theoretical Background

The Resource Dependence Theory, developed by Johnson (1995), provides a theoretical framework that emphasizes on how organizations are influenced and are dependent on external resources, including institutions, to survive and thrive. Nonetheless, in the context of the mediating effect of institutional policy implementation on management competence of mineral resources, this theory postulates that management competence alone may not be sufficient to achieve effective mineral resource management in the mining industry. Instead, the extent to which management competence translates into improved mineral resource management practices is contingent upon the mediation of institutional policy implementation. According to the Resource Dependence Theory, organizations rely on external resources to secure necessary inputs and overcome uncertainties. In the mining sector, management competence represents an internal resource that influences how mineral resources are managed (Delke, 2015).

However, the implementation of institutional policies, such as environmental regulations, safety standards, and community engagement guidelines, serves as a mediating mechanism that facilitates or hinders the actualization of management competence into sustainable mineral resource management outcomes (Hillman, Withers & Collins, 2009). The institutional policies act as external influences that shape the boundaries and constraints within which management competence can be effectively applied. According to Zhou et al (2021) the Resource Dependence Theory suggests that the relationship between management competence and mineral resource management is mediated by the extent to which institutional policies are adopted, adhered to, and effectively implemented within mining companies.

Companies with strong management competence may achieve better mineral resource management outcomes when they align their practices with institutional policies, as these policies provide guidance, legitimacy, and accountability in the management of mineral resources (Natcher, Davis, & Hickey, 2005). They emphasize the pivotal role of institutional policies and regulations in influencing mining companies' practices, particularly in areas related to environmental protection, social responsibility, safety, and sustainability. Companies that effectively align their policies and practices with institutional norms are more likely to achieve long-term success in

mineral resource management and build positive relationships with stakeholders. Therefore, the study was informed by institutional theory because it helped to introduce.

3.0 MATERIALS AND METHODS

Research Design

In this study, there is the need to test the research hypotheses, a cross-sectional design has been deemed appropriate for the study (Bell et al., 2018). This design involves data collection at a single point in time to identify patterns between variables (Taris and Kompier, 2014). These are; resource-intensive, time-consuming, and susceptible to validity threats such as participant attrition or loss of interest over time (Spector, 2019). The study population consisted of 39 institutions that are involved in the management of mineral resources in Uganda (Ministry of energy and mineral development, 2022). 37 of them were district local governments with mining activities. 2 were Ministry of Energy and Mineral Development and NEEMA.

Where the ministry of Energy and Mineral Development is a key regulatory agency (Uganda mineral policy, 2001) and serves as a reliable source of information as it officially registers mining companies that comply with the legal requirements for operation in Uganda. While NEEMA is responsible for approving the doing environmental impact assessment which is a key requirement before companies are awarded exploration contracts (Mining regulations, 2003). The unit of analysis institutions that are involved in the management of mineral resources in Uganda and the key individuals of interest included the district natural resource committee, NEEMA staff from environmental impact assessment department and upper and lower stream department of ministry of energy and mineral development. The study targeted a sample size of 34 institutions, determined using the sample determination table developed by Krejcie and Morgan (1970).

Population

The study population consists of 39 institutions (Ministry of Energy and Mineral Development, 2022) that are involved in the management of mineral resources in Uganda. These are 37 district local governments with mining activities; 2 Ministries (Ministry of Energy and Mineral Development and National Environmental Management Authority-NEMA). Ministry of Energy and Mineral Development is a key regulatory agency and serves as a reliable source of information since it officially registers mining companies that comply with the legal requirements for operation in Uganda. While NEMA is responsible for Environmental Impact Assessment which is a key requirement before any company is awarded exploration contracts. It is also necessary to understand the demographic characteristics of the respondents that provide the usable data for the study. This study targets a sample size of 34 institutions which are determined using the sample determination table developed by Krejcie and Morgan (1970).

Sampling Design and Procedure

Stratified random sampling technique has been used in this study to select the districts which are to participate in the study. For the case of the Ministry of Energy and Mineral Resources and NEMA, have been chosen for this study based on strata. The reason for using stratified random sampling has been a requirement to ensure that each category of the institution gets a proportionate chance to participate in the study (Sharma, 2017).

4.0 FINDINGS

Presentation of the Results

Demographic Characteristics of the Respondents

The results below show that majority of the respondents are between 41-50 years. In addition, most of them are bachelors' degree holders (60.1 percent), followed by masters' degree holders (38.1 percent). The results also show that the male is the majority with 55.5 percent participation rate followed by female with 44.5 percent. On the length of experience of the respondents, majority of them had spent 6-10 years' experience (79.1 percent) followed by those that spent 11-20 years (14.9 percent) with those that spent 31 years and above (0.6 percent) being the least number of respondents and lastly majority of the respondents came from the District Natural Resource Committee (84.5 percent) and the least number of respondents came from Staff of NEMA (4.2 percent). The details are presented below.

Table 1: Demographic Characteristics of Respondents

Item	Frequency	Percent
Gender Male		
	93	55.5
Female	75	44.5
Total	168	100.0
Age range in Years Below		
30	8	4.8
31-40	69	41
41-50	86	51.2
50 and above	5	3
Total	168	100.0
Education standards		
Bachelors	101	60.1
Masters	64	38.1
PhD	3	1.8
Total	168	100.0
Length of service/experience 0-5		
years	3	1.8
6-10 years	133	79.1
11-20 years	25	14.9
21-30 years	6	3.6
31 years and above.	1	0.6
Total	168	100.0
Category of Respondents		
District Natural Resource Committee	142	84.5
Staff of MEMD	19	11.3

Staff of NEMA	7	4.2
Total	168	100.0

Sample Characteristics of the Institutions

The sample characteristics of the Government Institutions in the study reveal valuable insights regarding their likely implications for Mineral Resource Management. Among the institutions under the study, a significant majority (87.5 percent) have been in existence for 10 years or more, indicating a considerable level of institutional stability and experience in dealing with mineral resource management. The long-standing institutions are likely to have well-established policy frameworks, and expertise in place to effectively manage Mineral Resources.

Additionally, when examining the number of employees within the sample institutions, a notable finding emerges. The majority (84.4 percent) of the institutions have 20 or more employees, suggesting a relatively larger workforce dedicated to Mineral Resource Management. Thus; the larger workforce can contribute to enhanced capacity within these institutions, enabling better coordination, implementation, and enforcement of policies and regulations related to Mineral Resource Management. With specialized personnel and increased manpower, these institutions are better positioned to address the complexities and challenges associated with the Management of Mineral Resources.

Overall, the findings in this study imply that the government institutions included in the study exhibit promising characteristics for effective Mineral Resource Management. The combination of institutional experience and a relatively larger workforce provides a foundation for sustainable management practices. The well-established policy frameworks, and expertise of these institutions, along with their increased capacity are likely to contribute to improved decisionmaking, efficient allocation of resources, and the enforcement of regulations which aimed at promoting responsible and sustainable use of mineral resources. These sample characteristics provide insights into the potential strengths and capabilities of government institutions in the context of Mineral Resource Management.

Table 2: Sample Characteristics of the Institutions

Item	Frequency	Percent
Age of the institution		
5- 10 years	4	12.5
10 and above	28	87.5
Total	32	100.0
Number of employees		
Less than 10	1	3.1
10 -20	4	12.5
20 and above	27	84.4
Total	32	100.0

Mediating effect of Institutional Policy Implementation (IPI), Management Competence (MC) and Mineral Resource Management (MRM)

There is a significant direct effect of Managerial Competence on Mineral Resource Management (Beta=.625; $p<.05$). There is also a significant direct effect of Managerial Competence and Institutional Policy Implementation (Beta=.376; $p<.05$). There is also a significant direct effect of Institutional Policy Implementation and Mineral Resource Management (Beta=.468; $p<.05$).

Nevertheless, when controlling for Institutional Policy Implementation, the direct effect Managerial Competence and Mineral Resource Management reduces from Beta=.625 to Beta=.523 and remained significant. This is an indication that the relationship between Managerial Competence and Mineral Resource Management in Uganda is partially mediated by Institutional Policy Implementation. This is further indicated by the indirect effect of $(0.162/0.625 \times 100)$ percentage. 26.1 percent meaning that direct effect is explained by 73.9 percent in the model.

Table 3: Mediation Effect of Institutional Policy Implementation (IPI), Management Competence (MC) and Mineral Resource Management (MRM)

Steps	Regressions	B	SE	Beta
IV&DV	Managerial Competence—Mineral Resource Management	.767	.053	.625
IV&MV	Managerial Competence –Institutional Policy Implementation	.570	.078	.376
MV&DV	Institutional Policy Implementation---Mineral Resource Management	.379	.040	.468
IV, MV&DV	Managerial Competence and Institutional Policy Implementation—Mineral Resource Management	MC =.641	MC=.054	MC=.523
		IPI=.220	IPI=.036	IPI=.272
		Part correlations	MC =.484	
			IPI=.252	
		R Square	.451	
		n	44	

5.0 CONCLUSION AND RECOMMENDATIONS

The study's results indicate that Managerial Competence has a direct and significant impact on Mineral Resource Management in Uganda. This means that competent managers are better equipped to make informed decisions, efficiently allocate resources, and implement best practices in the mining sector. This perhaps highlights the importance of investing in training and development programs for managers to enhance their skills and knowledge.

Nonetheless, the study also reveals that the relationship between Managerial Competence and Mineral Resource Management outcomes is not entirely independent of external factors. Institutional policy implementation acts as a mediator in this relationship, meaning that the effectiveness of policies set by relevant institutions can influence how managerial competence translates into actual outcomes in the mining industry. **Policy Implication**

The policy implication in this study is that Uganda's policy makers should prioritize strengthening institutional capacity utilization through targeted training programs and capacity-building initiatives as this would promote the achievement of sustainable and responsible Mineral Resource Management in the country.

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