An Assessment of Pricing of Minerals among Artisanal and Small Scale Miners in Tanzania**A. G. Tegambwage¹ and P. Benard²**¹Department of Marketing and Entrepreneurship, the University of Dodoma, Tanzania.²Geological Survey of Tanzania (GST).**Received: 13 July 2017; Revised: 31 July 2017; Accepted: 18 August 2017**

Abstract: The implementation of the 1985 structural adjustment programs in Tanzania caused many sectors of the economy including mining to be privatized. Peasants flocked to the mines in numbers as artisanal and small scale miners (ASMs). As time passed, complaints emerged that, ASMs were selling their minerals through dealers, who were paying them low prices relative to market prices. This study was conducted to assess the pricing of minerals among ASMs. Using a qualitative approach, data were collected by interviews and focus group discussions. Findings have revealed that ASMs did not have a command on the prices of their minerals. As such, their pricing objective was survival and their pricing strategy was going rate pricing. The study recommends that the government should assist ASMs to conduct formal mining activities in order to improve their access to information, capital, formal markets and better prices.

Keywords: Pricing, Artisanal and Small Scale Miners, Tanzania.

INTRODUCTION

All across the globe, mining has featured among the main income generating activities for mankind thousands of years well before modern economic systems. Hartman and Mutmanský [1] observe that, mining is the second earliest humankind's endeavour after agriculture. Mining parallels the history of civilization -laying at the very heart of human development transitions from the Stone Age, throughout the Steel Age to the modern Nuclear Age [1]. Madigan [2] concurs that, mining has played an important part in human existence from prehistoric times.

With modern world economic systems, the sector has continued burgeoning and now accounts for an interesting proportion in Gross Domestic Product (GDP) and employment creation. The International Council of Mining and Metals (ICMM) [3] provides a lengthy glossary of these statistics. In Zambia, for instance, mining accounted for 84.2% of all exports and 23.8% of the GDP in 2010. The Democratic Republic of Congo had 78.3% of all exports attributed to mining and contributing 16.7% of the GDP in 2010. The statistics show further that in 2010, 43.0% of Tanzania's exports were minerals, with a contribution of 5.8% on the Nation's GDP.

While large multinational companies such as African Barrick Gold, Resolute Mining Limited and AngloGold Ashanti continue to command the industry, small scale mining has been gaining pace. Deborah and Jesper [4] observe that, while Tanzania's artisanal mining has a

[DOI:10.24214/ARJBM/5/1/5258](https://doi.org/10.24214/ARJBM/5/1/5258)**Research Article**

smaller output compared with large scale mining; it has a larger labour absorption. In concurrence, Buxton [5] asserts that, global artisanal and small scale mining employs 10 times more than large scale mining. According to the United Nations Environment Programme (UNEP) [6] and Buxton, Tanzania artisanal and small scale miners' population ranges between 500,000 to 1,500,000. The miners generally earn three to five times higher than the average farmer [4, 5]. This explains why the sector has attracted millions of Tanzanians.

Whilst small scale mining has that great contribution to both employment creation and income generation, it is not without challenges [7]. Financing, sluggish government formalization processes, frequent displacement by large scale miners, poor mining policies and frequent conflicts with large scale miners have at one time or another hit headlines. Coupled with the smallness and informality associated with the sub industry, these challenges have made it hard to reach formal markets. In response to these challenges, measures have been taken by the government of Tanzania and other stakeholders to try to make the sub industry play a better role in job creation and income generation. In effect, several legislations and laws have been introduced. These include the 1979, 1998 and 2010 Mining Acts and the 1997 Mining Policy [7]. Other efforts include the formation of the Bomani Presidential Mining Sector Review Committee in 2008 [6]. Another recent measure has been the formation of TANSORT; a department in the Ministry for Energy and Minerals tasked with overseeing the valuation of gemstone minerals and competitive pricing by small scale miners in the global marketplace.

Despite the above mentioned efforts, many small scale miner shave not managed to secure better deals for their minerals. In other words, there has been the long standing price disparity between ASMs and large scale miners in Tanzania, where ASMs sell their minerals at a lower price compared to the market price. While a little research has been conducted on pricing practices among ASMs, the government efforts to support ASMs on the issue have been limited. Likewise, the government's promise (in the 1997 Mining Policy) to provide mineral marketing extension services, particularly in grading and valuation and offering short term training programmes in mineral marketing was not implemented [7]. This has left ASMs chained in a vicious cycle of poverty. The aim of this study is to assess pricing of minerals among ASMs in Tanzania, particularly to explore the pricing objectives and strategies among ASMs in Tanzania.

METHODS

Data Collection

A qualitative approach was adopted. This is because the main subject under study, pricing practices of ASMs remains largely unexamined, particularly in Tanzania. According to Cooper and Schindler [8], exploratory studies are useful when the area of investigation is so new or so vague and important variables are not yet known or thoroughly defined. The study was carried out at Sambaru gold mine in Ikungi district, Singida region and Winzagemstone mine in Mpwapwa district, Dodoma region. Mining activities in these two area are

[DOI:10.24214/ARJBM/5/1/5258](https://doi.org/10.24214/ARJBM/5/1/5258)**Research Article**

dominated by ASMs. In addition, gold and gemstones, presented by the two mines, are the most widely extracted minerals by ASMs in Tanzania (UNEP, 2012). The population was comprised of all ASMs in Sambaru and Winza mines and their association leaders. A total of 50 respondents participated in this study. That is, 34ASMs who were interviewed (14 from Sambaru mine and 20 from Winza mine) and 16 leaders of two miners' associations (SIREMA and DOREMA) who participated in the two focus group discussions with 8 participants each (8 leaders from each of the two associations). According to Malhotra [9], the relatively smaller number of the sample is optimal given the exploratory qualitative nature of the study. Non probabilistic snowball sampling was used to obtain samples for both groups of participants. It should be noted that the informal nature of ASMs made it difficult to find sampling frame in place. According to Greener and Martelli [10], snowball sampling is used when there is no sampling frame and it is difficult to predefine the population.

Data Analysis

In a qualitative research, data collection and data analysis is a simultaneous process. According to Creswell [11], qualitative researchers identify and describe patterns from participants. The researcher then attempts to understand and explain these patterns and themes. This study employed thematic analysis as a method for analysing notes and transcripts generated through field interviews and focus group discussions. Data analysis involved back and forth approach in the conjunction with field interviews and focus group discussions. The analysis involved the identification of themes which were eventually communicated back to the research participants while the field research was going on for approval as to whether the themes identified captured the actual scenarios of the story they presented to the researcher about their understanding and experiences of pricing practices of minerals. This process of validating themes to the research participants was necessary in order to increase the internal reliability and internal validity of the research findings [11]. For the case of the descriptive statistics, Microsoft excel was used to generate them.

RESULTS AND DISCUSSION

Demographic Characteristics of Respondents

The demographic characteristics of respondents include sex, age, marital status, number of children and other dependants, mining experience and level of education. Other characteristics are formalization status and nature of markets where minerals are sold (Table 1).

Table1: Demographic Characteristics of Respondents (ASMs)

Demographic Characteristic	Frequency	Percent
Sample Size	34	100
Sex		
Male	29	85
Female	5	15
Age (Years)		
20 - 29	2	6
30 - 39	7	20
40 - 49	16	47
50 - 59	7	21
60 and above	2	6
Marital Status		
Single	2	6
Married	31	91
Widow/Widower	1	3
Number of Children		
1 - 2	5	15
3 - 4	16	47
More than 4	13	38
Number of other Dependants		
1 - 2	12	35
3 - 4	9	27
More than 4	13	38
Level of Education		
No Formal Education	1	3
Primary	20	59
Secondary	6	18
Tertiary	7	20
Mining Experience(Years)		
Below One	1	3
1 – 2	1	3
3 – 4	3	9
5 – 6	3	9
More than 6	26	76
Licensing Status		
Licensed	6	18
Not Licensed	28	82
Nature of Market		
Formal	5	15
Informal/Dealers	29	85

Table 1 shows that 85% of ASMs who were interviewed were male while only 15% were female. This implies that the mining activities are dominated by men. The reason could be the rudimentary nature of the tools used by ASMs. Majority of respondents (47%) were aged

between 40-49 years. People in this age group have established families and corresponding responsibilities. This is supported by the fact that 91% of respondents were married. In terms of number of children, the majority of respondents (47%) had between 3-4 children, while 38% had more than four children. This means that 85% of ASMs who were interviewed had 3 or more children, suggesting that they are shouldering heavy family responsibilities. In addition to their own children, 35% of the respondents had either one or two other dependents, 27% had 3 or 4 other dependents while 38% had more than 4 other dependents. This means that the majority (65%) of ASMs who were interviewed had three or more dependents along their own children. This might be the reason for selling their minerals immediately at the mining sites to meet their basic needs.

In terms of education, Table 1 indicates that the majority (77%) of ASMs who were interviewed had a primary school level to secondary school level education. Few respondents (20%) had a tertiary level of education. With regards to mining experience, the majority of respondents (76%) had more than 6 years of experience. Only one respondent (3%) had less than one year of mining experience. In terms of level of formalization, the majority (82%) of ASMs who were interviewed did not have mining licenses. Only (18%) were licensed. This implies that the majority of ASMs are illegal miners. This makes it difficult for them to access formal markets which offer better prices. Furthermore, Table 1 indicates that the majority (85%) of ASMs sell their minerals to middlemen (dealers) while only 15% sell to formal markets.

Pricing Objectives by ASMs

Respondents were asked to identify the objectives that guided them in setting price for their minerals. The findings indicate that the only pricing objective for ASMs was subsistence. This is because ASMs did not set price, but largely took the offered price. This fact is revealed by the following quotations:

When I get minerals, my aim is to sell and get back in the pit (A male interviewee from Winza mine).

I sell quickly so that I get money to eat (An interviewee man from Sambaru mine).

Purchasing gold follows a certain chain, there is a broker, a super dealer and the market. How is a small scale miner going to plan when he doesn't know the price? After all, many don't even have money to eat, so they can't dictate the dealer to buy on the price of their own wish (A female participant in focus group discussion from Sambaru mine).

Thus, given the current circumstances, ASMs are only subsistence price takers with limited options for negotiations. As such, ASMs have only one pricing objective, that is, subsistence or survival. This could be due to the fact that the majority of ASMs have large families with many dependants, forcing them to strive for survival (subsistence). In addition, the informality of their mining activities make it difficult for them to reach formal markets, where better prices are offered. These findings are consistent with pricing theories which indicate survival as one of the pricing objectives (Keller & Kotler, 2008)[12]. Other pricing objectives include

DOI:10.24214/ARJBM/5/1/5258

Research Article

market share, return on investment, competition and profit maximization (Keller & Kotler, 2008).

Pricing Strategies for ASMs

Respondents were asked to identify the strategies they used to set price. The general findings show that, going rate pricing was virtually the only pricing strategy used by ASMs. This was evident from the focus group discussions with the association leaders and interviews with ASMs. For instance, some respondents had the following views:

I am asking how much my fellow sell their minerals and I am content with the available price because I don't know the market price (An interviewee man from Sambaru).

We have problems with money, so the dealer offers the price depending on how they see the miner is in need (An interviewee man from Winza).

ASMs sell their minerals based on the price offered by dealers who evaluate the grade and weight of the mineral and set price at that time (A male participant in focus group discussions in Sambaru).

These findings imply that ASMs do not have command over price of minerals. They only sell their minerals at a price offered by dealers, regardless of whether the price is fair or not. In business terms, this pricing strategy could be termed as “going rate pricing” [13]. This is not surprising because the pricing objective is survival.

CONCLUSION

Based on the findings of this study, it can be concluded that ASMs conduct their mining activities informally, as they don't possess mining licenses and are not registered with the Government authority. The pricing objective of ASMs is survival and thus, their pricing strategy is going rate pricing. As such, the economic condition of ASMs is likely to remain unchanged for many years to come. This calls for government intervention to save ASMs. For instance, formalization of ASMs could give them more access to information, capital, formal markets and better prices. This in turn, could improve the lives of ASMs and government revenues through taxation.

REFERENCES

1. H. Hartman & J. Mutmanský, *Introductory mining engineering*. New Jersey: John Wiley and Sons, 2002.
2. R. Madigan, *Of minerals and man*. Australian institute of mining and metallurgy, 1981.
3. International Council of Mining and Metals (ICMM) *The role of mining in national economies: Mining's contribution to sustainable development*. ICMM, 2012.
4. F. Deborah & B. Jesper, *Tanzanian artisanal gold mining: Present and future*: Paper presented at the Britain - Tanzania seminar in London, on 15th March, 2012.
5. A. Buxton, *Responding to the challenge of artisanal and small-scale mining: How can knowledge networks help?*. London: IIED, 2013.

[DOI:10.24214/ARJBM/5/1/5258](https://doi.org/10.24214/ARJBM/5/1/5258)**Research Article**

6. United Nations Environment Programme (UNEP), *Analysis of formalization approaches in the artisanal and small scale gold mining sector: Based on experiences in Eduardo, Mongolia, Peru, Tanzania and Uganda*. United Nations Environment Programme (UNEP), 2012.
7. R. Mwaipopo, W. Mutagwaba, D. Nyange & E. Fisher, *Increasing the contribution of artisanal and small scale mining to poverty reduction in Tanzania*. A report prepared for the department of international development (UK), 2004.
8. D. Cooper & P. Schindler, *Business research methods*. Pennsylvania: McGraw-Hill Irwin, 2006.
9. N. Malhotra, *Marketing research: An applied orientation*, 3rd ed. New Jersey: Prentice Hall, 1999.
10. S. Greener & J. Martelli, *An introduction to business research methods*, 2nd ed. Bookboon.com, 2012.
11. J. W. Creswell, *Research design: Qualitative, quantitative and mixed methods approaches*, 2nd ed. Thousand Oaks, CA: Sage, 2003.
12. K. Keller & P. Kotler, *Marketing management*, 13th ed. Edinburgh Gate, England: Pearson education limited, 2008.
13. Lancaster & Reynolds, *Management of marketing*. Elsevier Butterworth-Heinemann Linacre house, Jordan hill, Oxford, 2005.

Corresponding Author: A. G. Tegambwage
Department of Marketing and Entrepreneurship, the University of
Dodoma, Tanzania