

Employee Perception on Sustainable Environmental Practices at Mining Firms in Zimbabwe

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Abstract

The rise in environmental degradation that is attributable to a rise in mining activities in Zimbabwe has forced many mining firms to re-craft their operational strategies or face the wrath of fines by Environmental Management Agency (EMA) on their quest to preserve the planet earth and its inhabitants. The main stakeholder affected by negative mining activities is the employee as they are at the centre of the mineral extraction process. Many employees in the mining sector have developed incurable respiratory diseases, with some losing their lives due to work related infections and unsustainable mining practices especially in the Zimbabwean economy where artisanal mining is the backbone to National Development Strategy of converting Zimbabwe to becoming a middle-income economy by 2030. The Zimbabwean economy's main anchor is agriculture and mining with both contributing about 65% of the country's foreign earnings. The major criticism to mining is its adverse effects to the environment and its components such as air, water and land pollution which were the major motives of the research. The research objective was to determine the perception of mine employees as part of stakeholders in the creation of green mines in Zimbabwe. The Environmental Management Act of 2012 and the stakeholder theory of corporate governance founded the research theoretical framework. A quantitative research design was used with a sample size of 100 mine employees in Zimbabwe that have been employed for at least one year, regardless of the positions they hold in the mines, 96% response rate was achieved. Questionnaires were used as data collection instrument and data analysis was done using SPSS statistical software. Research findings indicated the need for employees to change perceptions towards environmental practices to ensure sustainable mining environmental practices. The research findings will help to foster Sustainable mining practices that will alleviate environmental ills, protect employees from unsustainable mining practices, and accelerate the preservation of the environment and the conservation of the country's minerals for the current and the future generation.

Key words: Employees, Environmental sustainability practices, Mining, Stakeholder theory, Environmental Management Act

Introduction

One of the key contributors to Gross Domestic Product in Zimbabwe is the mining sector; the major resources mined in Zimbabwe vary with province. Most of the medium to small scale mines have been taken over by the artisanal and Chinese companies under the country's look east policy to facilitate trade and increase foreign direct investment. The mining sector as one of the huge employers in Zimbabwe like any other sectors has an obligation to protect the environment it operates in and at the same time balance the needs of its various stakeholders

including employees. The study determined the perceptions various employees hold towards environmental sustainability issues in the mining sector.

According to Stiftung (2016), research carried out on climate change, green jobs and the role of trade unions in Zimbabwe. The major highlights were that climatic change is on the rise with low to high rainfall, and many often, droughts and hunger continue to occur. The research noted that it is now the duty of trade unions and employees to preserve the environment as climate change now affects employment and the labour market. It is the obligation of the employees to become proactive than reactive and answer questions such as, what are the effects of continued environmental ills on long term employment and what are the alternative ways of preserving the environment and preserving jobs and employee welfare. The findings further noted that the major environmental effects such as land degradation, pollution, landfills, and climate change are mainly caused by human activities than natural factors and employees need to preserve the environment if they want to preserve their jobs today and in future (Asproudis et al, 2021).

In the Zimbabwean economy, mines are involved in the extraction of minerals such as gold, diamond, platinum, nickel, zinc coal among other minerals and during the extraction they discharge vast amounts of contaminated effluents that are harmful to the environment and its constituent parts (Muchaendepi et al, 2019), the mining sector has brought many losses of the marine life, mortality of the flora and fauna (Adler et al, 2007), the society is now more conscious about the mining impacts on the environment and seeks refuge from the Zimbabwe government through the Environmental Management and Coordination Act (Chapter 20:27) to adopt green strategies (Zhu, 2009). There are numerous published studies in developed countries on how to preserve the environment; with many movements in the developed economies having started to view the relationships that exist between organisations, employees, and trade unions positively, as a sign to preserve wealth for the future generations. Many employees in the minerals extraction sector now seek work in mines with low work-related fatalities. The struggle to protect employees dates back to the formation of trade unions who always view employee protection at work from injury, hazardous exposure as a way of protecting nature. However, in the developing economies, environmental stewards have always accused employees of preserving their jobs at the expense of the environmental preservation needs, (Rathzel & Uzzell, 2012). Employees with a positive view towards the environment have always placed the environmental issues first than the security of their jobs. The movement by these employees usually leads to low company profitability and job losses or compromised welfare, (Fanti & Buccella, 2016). These misconceptions that cloud the duties the employees have towards the environment as they undertake their mining roles have not been fully explored which has led the researcher to conduct the research and discover the hidden employee perceptions towards being environmental stewards while maintaining productivity.

Mines are given a green status if they improve energy and raw materials efficiency, limit greenhouse gases (GHG) emissions, produce minimum waste and pollution, safeguard and restore ecosystem and adapt to climatic changes, (Fanti & Buccella, 2016). The ability of firms and employees to work together for a good environmental cause has been rarely researched in literature (Barcena-Ruiz, 2011), and employees have always been viewed as advocates for job security even at the expense of environmental negative externalities, (Asproudis & Gil Molto, 2015). Also on another angle, employees that react towards the environment if their work operations are negatively exposed and risk losing their jobs if the firm does not adopt green strategies and they are labelled as sell-outs by their counter parts, (Fredriksson & Gaston, 1999). Several studies have documented many various issues on the negative effects of mining on the environment and mixed ideas about employee reactions towards environmental ills

caused by mining activities. This research closes the gap of analysing perceptions employees hold towards these environmental ills and their after effects on firm performance and employee welfare.

Environmental legislation issues in Zimbabwe

According to Stiftung (2016) the Environmental Management Act (EMA) was introduced in 2002, the body was meant to safeguard the abuse of the environment through resource protection legislation, it was amended again in 2006 because of an increase in the environmental ills by various stakeholders in Zimbabwe, in 2009, it was also amended also considering the forest act of 1949. In detail, Environmental Management Act (EMA), Act No. 13 of 2002 (Chapter 20:27), revisions under Act No. 5 of 2004 (s.23) and Act No. 6 of 2005 (s.28). The Act created provisions for sustainable use and preservation of natural resources of the future generation. The act allows various agencies such as the National Environmental Council, Environmental Management Agency, Environment Management Board, Environment Fund, Environmental Quality Standards and the Standards and Enforcement Committee. The drafting of the act was pinned on the reduction of greenhouse gases (GHS) emitted by various economic sectors inclusive of mines. The major thrust is environmental preservation through environmental planning and management.

Stakeholder Theory

The stakeholder theory dates back to Freeman (1984) on the objective that a company must satisfy the needs of the owner, employees and their unions, suppliers, customers, and the environmentalists (Dao and Tran, 2017) and to satisfy these needs, all stakeholders should have a single unity of purpose and interest (Buchholz, 1989) and the links that exist between the company and its stakeholders affect company performance (Donaldson & Preston, 1995). Corporate governance is always viewed as procedures, process and systems according to which an organisation is directed (OECD, 2004) controlled and supervised by the directors to ensure guaranteed advantages of all stakeholders, including suppliers, managers, customers, employees, government, financial institutions, trade unions among other stakeholders (Dao & Tran, (2017) The research determines the level of influence the employees as stakeholders hold on mines performance and ability to embrace sustainable green investment to improve employee welfare and overall firm performance.

Conceptual Framework



Researcher Construct

Research Objectives

To identify the sustainable environmental practices embraced by mining employees.

To examine the impact of employees’ perceptions on sustainable environmental practices on mines performance.

To analyse the extent to which embracement of sustainable environmental practices has on employee welfare.

To analyse challenges faced by employees in implementing sustainable environmental practices at workplaces.

Sustainable environmental practices embraced by mining employees.

Just Transition's major focus is now a reduction of greenhouse gases and emissions with employees being the major focus of concentration (UNFCCC, 2015). Sustainable environmental management always begins with greening of jobs at work places. Basically, green jobs usually result in low carbon emissions that reduce climatic change and have less risk on health of workers. It is the duty of the organisations in conjunction with trade unions to fight for employee welfare through advocating of green work places and educating workers on the advantages and disadvantages of embracing transition from current practices to green employment and work practices (Rutzell & Uzell, 2012), through the use of worker movement guidelines (International Labour Organisation (ILO), 2015). Employees, through trade unions, should advocate for the following: according to ILO (2015):

- Innovative policies that will play a central role in making a mitigation strategy affordable.
- Identifying the conditions necessary for well-functioning local emissions permits, markets, and policies to meet the challenges of deforestation and reforestation.
- Carefully priced renewable energy technologies, which are critical for ensuring that new technologies, once developed, are rapidly deployed where they are most needed.
- Promoting the use of renewable energy such as use of biofuels as alternatives to fossil fuels.

ILO (2002) supports the above argument that the duty of employees is to demand a workplace that harnesses employee capacity and knowledge and brings in improvements at workplaces.

The influence of the employees to push for the adaptation of sustainable environmental working practices in the mining sector lies in the historical development background of the trade union, sectoral anchoring, strength in terms of membership, political convictions, and they closeness to the ruling government. Usually, international trade unions have a broad vision towards environmental sustainability policies based on wide exposure and local trade unions are more pressured with day-to-day interests of their workers that advocate for social movement unionism. The power of the trade union in terms of membership and affiliations has a bearing on the uptake of the trade union movement to green technology. For example, the International Trade Union Confederation has 308 affiliated member organisations in 153 countries and territories, with a total membership of 175 million workers. The ability of manipulation of such a body and its constituent members is huge, and if it can be mobilised to take collective action, (Rutzell & Uzzell, 2012)

According to Asproudis et al (2021), the need for employees to adopt reciprocal solidarity between the organisation and the environmental practices makes firms choose abatement technologies prior to bargaining over wages and employment welfare. On the other end, when employees bargain for wage increases prior to the firm's abatement and employment decisions, the firms are manipulated to adopt the dirtiest available environmental practice. It is important to establish reciprocal contracts that balance both employees and organisational interests, many firms now advocate for a change in plant productions to safeguard employees at work

(Sweeney & Treat, 2018). There is now a noticeable rise in employees supporting the green sustainable practices as long as they reduce emissions and environmental negative impacts that affect their welfare in the long run (ILO, 2002), although they will be need for training and re deployment after green environmental sustainability practices embracement. ILO (1999) notes that workers are resistant to accept sustainable environmental practices if the movement affects their job security and welfare, which in turn hinders corporate performance.

According to Bussella & Fantina (2016), in a monopoly, if employees believe in green sustainable work practices, a trade-off between employment and environmental regulations exist and employees support prior practices to preserve welfare while balancing organisational interests without reducing profits.

Impact of employee perceptions on sustainable environmental practices on firm performance

Employees have always been a centre of interest since the onset of industrial revolution, where firms were seeking to maximise production at the cost of employee welfare; many employees were exposed to dangerous working conditions and work-related diseases (Taylor's scientific study) and death of employees were on the rise which later gave rise to collective bargaining by workers. (ILO, 2002)

Many employees seek freedom at all cost, they bargain for better environmental conditions that increases employee salaries and wages within a company, employees can drive the wage bill above the equilibrium, eating away all the surplus firms can channel to long-term investment, (Cote, 2013), employees' move towards green investment is seen as employee revitalisation strategy to gain long lost firm recognition and dominance, (Gold et al, 2019), employees seek participation in green society as corporate social responsibility (Harvey et al, 2017), they guard against job losses through supply chain modifications, (Egels- Zandén & Hyllman, 2006), the rise to green investment as corporate social responsibility is always seen as weak to implement by employees as they view the strategies benefiting the management than the entire work force and this resistance to transitions stifles organisational performance (Bartley, 2018).

Effect of sustainable environmental practices on employee welfare

The need for firms to strike a balance between green environmental practices without harming the employee job security, wages and salaries and health and safety at work is very important. Drawing back to the 1960s Canadian uranium mining dispute where there was lack of community health care, need to promote wage rationalisation while reducing global warming (Galgóczi, 2020). Firms always embrace what they value for the organisation; the trade unions were left to grasp the understanding of green sustainable practices when firms had already implemented globalisation and automation of plants, (Azzellini & Kraft, 2017). It is important to understand that the path to economic growth is innovation than employee welfare (Eurofound, 2017), with supporting network forces, (Mazzucato, 2016), Trade unions represent the firms' ability to embrace green environmental practices although their force has always been on labour directly, (Wang & Xie, 2020), trade unions can pursue firms to be innovative and develop new products if in the long run it leads to employee welfare (Zhou et al, 2011), sustainable firm innovation requires organisational commitment, (Hall & Soskice, 2001) and employee buy in through trade union involvement, (Grady & Simms, 2019).

Challenges faced by employees in implementing sustainable environmental practices at work places.

The major challenge in the mining sector, especially gold mining, is the dominance of the sector by the illegal miners, 'amakorokoza' who undertake mining for daily survival and leave open shafts, (Mazvimavi & Gambara, 2006), about one million Zimbabweans survive as artisanal or small-scale miners in Zimbabwe (Akesson et al, 2016). These miners have unregulated work as they seek daily bread, and many have died due to mercury poisoning.

The mining sector is facing many challenges in its effort to implementing sustainable environmental practices. Firstly, the price of its minerals is dropping, low capital investment due to lack of government support, electricity shortages, high costs of infrastructure, short term mine leases, sub-optimal royalties, low international commodity prices, money generated by mines is spent on domestic expenses such as infrastructure development, health and education sector than into greening the sector first, (AfDB et al, 2015); Utrikepolitiskainstitutet & Professor Tony Hawkins, 2016); Commercial Farmers Union of Zimbabwe, 2016)

Lack of regulation supporting both legal and illegal miners to conserve the environment has led to acute damage to the environment and employee welfare, with 99% of miners death attributable to mine work related illnesses, Drawing back to the mining act of 1961, its main thrust is on extraction of raw materials not environmental preservation, the new environmental management act of 2002, values environmental rights as human rights but lacks government support to implementation, the minerals act of 2014, advocates for accountability and transparency to solving environmental ills caused by the mining sector, as major drawbacks are lack of good governance and cross sectoral liaison and coordination, (Dhliwayo, 2014: AFDB et al, 2015: Akesson et al, 2016).

The environmental concerns are a major debate in most of the industrialising countries, (Fanti & Buccella, 2016). Most of the negative externalities are caused by firms in the manufacturing and mining sectors of an economy and companies in these sectors increase the exposure of employees to hazardous working environment and damage to the societal land all in the name of making profits. The current trends has shown that, trade unions are divided into two distinct groups, firstly, those that care about the environment and believe environmental preservation is for employee benefit directly and indirectly, (Fanti & Buccella, 2016), secondly those that believe that a movement to preserve the environment will lead to job loses especially when cleaner technology is adopted as they continuously raise alarm on the social and environmental problems caused by the firms, (Brecher, 2018).

Research Methodology

A descriptive research design was used to discover the employees' perceptions on sustainable environmental practices at mining firms in Zimbabwe. The use of descriptive research design helped the researcher to discover why certain variables behave the way they do and aided in answering research questions, (Zimund et al, 2013). The researchers focused on the employee perceptions that are built during the extraction of minerals and the environmental impact after the extraction. The sample size chosen was 100 mine employees through random sampling (Kothari, 2008), regardless of size and depth of the mining company where the employee works as environmental impact of mining is universally in all mines, as all mines extract minerals from the planet earth, (Akesson et al, 2016). The random sample frame constituted mine employees with more than a year work experience in the mining sector to ensure the validity

of results. The research instrument chosen was the close ended questionnaires to ensure easy analysis of data and restriction of data validity. The researcher adopted a quantitative approach to data analysis through the use of Statistical Package of Social Sciences (SPSS). Descriptive statistics was used to report findings.

Results and Discussions

The study findings in respect of the sustainable environmental practices embraced by mine employees are tabulated below:

Table 1: Sustainable environmental practices embraced by mine employees.

	N	Mean	Std. Deviation
Employees know the recommended sustainable environmental work practices in the mining sector	96	3.38	.487
Employees protest for high salaries and working conditions even when a healthy green working environment is compromised.	96	4.49	.523
Employees care about the negative externalities caused by mining activities to the environment and their well being	96	3.71	.794
Employees lack the ability to bargain for the implementation of sustainable environmental working practices	96	3.97	.606
Valid N (listwise)	96		

The findings in Table 1 indicate that employees know the recommended sustainable environmental work practices in the mining sector as the findings had a mean score of 3.38 and standard deviation of 0.487. This clearly shows that employees are aware of the transition mines should implement and should advocate for green workplaces and be further educated on the advantages and disadvantages of embracing transition from current practices to green employment and work practices. The study findings also show that employees protest for high salaries and working conditions even when green health working environment is compromised with a mean of 4.49 and standard deviation of 0.523, and for mines to meet up with salary increases they become manipulated to adopt the dirtiest available technology, (Mo et al, 2021), this is also necessitated by worker contracts that are not beneficial to both the employer and the employee if green technology is adopted by firms as supported by (Sweeney & Treat, 2018). Furthermore, the findings also indicate that employees care about the negative externalities caused by mining activities to the environment and their wellbeing as shown by a mean of 3.71 and standard deviation of 0.794, although they lack management support to curing the environmental ills (ILO, 2002). Lastly, findings show that Employees lack the ability to bargain for the implementation of sustainable environmental working practices (Rutzell & uzell, 2012) especially when the trade union is not a monopoly (Bussella & Fantina, 2016) as employees may terminate membership if they do not have confidence in the trade union's ideas of going green, findings are depicted by a mean of 3.97 and standard deviation of 0.606.

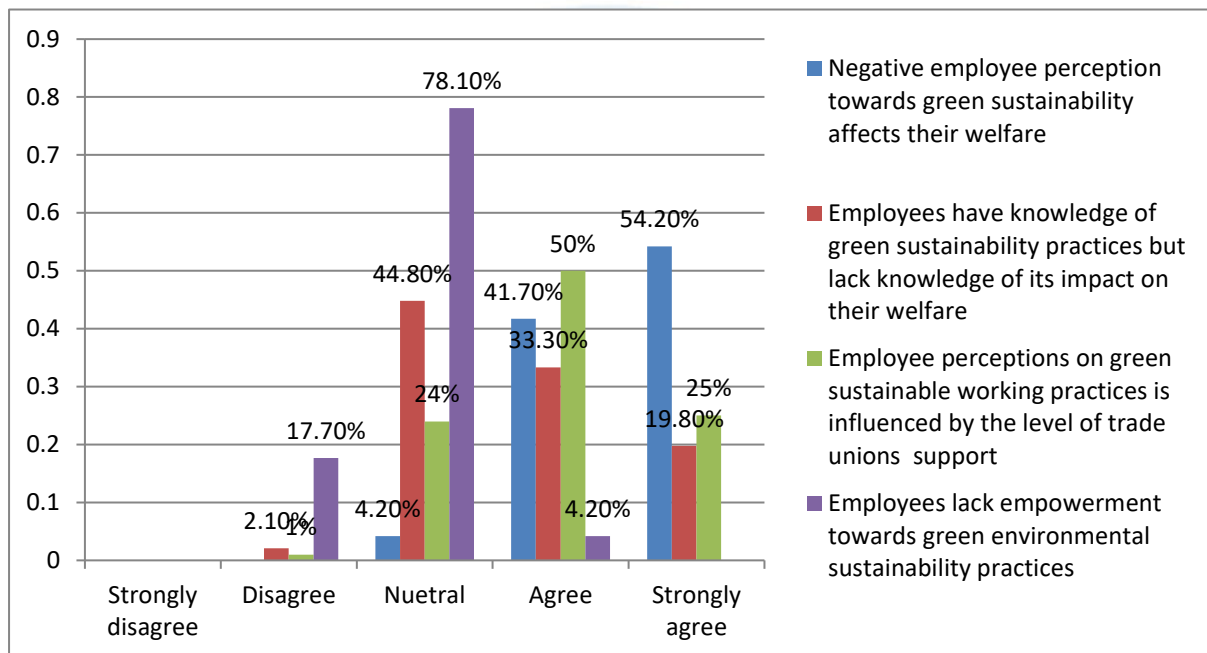
The responses to the impact of employees' perceptions on sustainable environmental practices on mines performance are indicated in table 2 below.

Table 2: Impact of employees' perceptions on sustainable environmental practices on mines performance

	N	Mean	Std. Deviation
Employees bargain for salaries and wages has a negative impact on green minerals productivity	96	4.00	.290
Employees resist green environmental practices if it does not directly increase their salaries and disrupt future productivity	96	4.83	.474
Employees and trade unions bargain only when green sustainable environmental practices benefit the employees than the organisation.	96	4.04	.845
Employees challenge green sustainability movement if it does not yield direct returns on productivity-based returns	96	3.29	.579
Valid N (listwise)	96		

The findings in Table 2 indicate that employees' bargain for salaries and wages has a negative impact on green minerals productivity with a mean score of 4.00 and standard deviation of 0.290. This evidently shows that employees can drive the wage bill above the equilibrium, eating away all the surplus money firms can channel to long term investment, (Cote, 2013). The study findings also indicate that employees resist green environmental practices if it does not directly increase their salaries and disrupt future productivity with a mean of 4.83 and standard deviation of 0.474, the results indicate that according to ILO (1999), workers are resistant to change to green sustainable environmental movement if the movement affects their job security and welfare, which in turn hinders corporate performance. Furthermore, the findings also indicate that employees and trade unions bargain only when green sustainable environmental practices benefit the employees than the organisation as shown by a mean of 4.04 and standard deviation of 0.845. This shows that trade unions fight employers that seek to maximise productivity at the expense of worker welfare, (ILO, 2002). Lastly, findings show that employees challenge green sustainability movement if it does not yield direct returns on productivity-based returns, this is supported by (Bartley, 2018) that the rise to green investment as corporate social responsibility is always seen as weak to implement by trade unions as they view the strategies benefiting the management than the entire work force, findings are depicted by a mean of 3.29 and standard deviation of 0.579.

Figure 1: Extent to which the embracement of sustainable environmental practices has on employee welfare.



Research findings in Figure 1 above indicate that negative employee perception towards green sustainability affects their welfare in the mining industry; this is indicated by 41.7 % and 54.2% respondents who agree and strongly agree respectively with a mean score of 4.50. These findings are supported by Galgóczi (2020), who says that firms and labour unions need to strike a balance on the adoption of sustainable environmental practices without harming employee welfare. The study also noted that employees have knowledge of green sustainability practices but lack knowledge of its impact on their welfare as indicated by findings that 19.8% strongly agree, 33.3% agree, 44.8% were neutral while just 2.1% disagreed. Also noted is that employee perceptions on green sustainable working practices is influenced by the level of trade unions support as 50% agree, 25% strongly agree, with 24% being neutral and just 1% disagreed. Lastly findings noted that employees lack empowerment towards green environmental sustainability practices, findings show that 17.7% strongly disagree; with an addition of 78.1% that are neutral and only 4.2% agree. These findings are supported by (Azzellini & Kraft, 2017) that firms have embraced green technology and also require employee support to implement green strategies for the benefit of both the employer and the employees.

The findings in Table 3 indicate that employees lack positive perception towards green environmental practices with a mean score of 4.20 and standard deviation of 0.535. This shows that employees are divided into two distinct groups, those that care about the environment accept green investment and those that believe that a movement to preserve the environment will lead to job losses resist the go green movement, (Brecher, 2018).

Table 3: Challenges faced by employees in implementing sustainable environmental practices at work places.

	N	Mean	Std. Deviation
Employees lack positive perception towards green environmental practices	96	4.20	.535
Employees lack management support to embrace green sustainable practices.	96	3.94	.350
Mines suffer from depreciating mineral prices to balance employee welfare and green technology investment	96	3.84	.998
Mines lack capital to finance employee safety and welfare movement towards green environmental practices.	96	4.11	.694
Mines have short term leases that hinder long term employee training and development subscriptions towards environmental sustainability practices	96	1.95	.622
Valid N (listwise)	96		

The study findings also indicate that employees lack management support to embrace green sustainable practices with a mean of 3.94 and standard deviation of 0.350, the results indicate that firms lack management support that fails to regulate mining activities as mines have limited interest on green technology as is deemed expensive, (Dhliwayo 2014; AfDB et al, 2015; Akesson, 2016; ILO 1999). Furthermore, the findings also indicate that mines suffer from depreciating mineral prices to balance employee welfare and green technology investment as shown by a mean of 3.84 and standard deviation of 0.998. These findings are supported (AfDB et al, 2015) that some mineral prices are dropping and some commodity prices are low in the international world market. The research also noted that mines lack capital to finance employee safety and welfare movement towards green environmental practices with a mean of 4.11 and standard deviation of 0.694. These findings are supported by AfDB et al, (2015). Commercial Farmers Union of Zimbabwe (2015) believes that money generated by mines in Zimbabwe is spent on country local expenditure than green investment towards mining. Lastly, findings show that mines have short-term leases that hinder long-term employee training and development subscriptions towards environmental sustainability practices, findings are depicted by a mean of 3.29 and standard deviation of 0.579. These findings are supported by Akesson, (2016), Mazvimavi & Gambara, (2006), who believe that many of these mines are illegal and flooded with small artisanal miners that have short term goals towards mining and government lack tight regulation towards mining in Zimbabwe.

Conclusion

The study was set to determine employees' perceptions on sustainable environmental practices at mining firms in Zimbabwe. Results indicated that employees are aware of the need to adopt sustainable environmental practices but lack organisational empowerment to embrace them. Also of recognition is that the ability of mines to positively implement sustainable environmental practices can yield increased productivity and sound employee welfare. Finally, employees face vast challenges that inhibit them to embrace environmentally sustainable practices, with one of the challenges being lack of organisational, government and trade union support towards sustainable mining practices in Zimbabwe.

Recommendations

- i. The study recommends that for mines to embrace green environmental sustainability practices there is need for stakeholder teamwork with the trio, employer, employees, and trade unions agreeing that there is need to embrace green technology to ensure long term preservation of nature, jobs, and profits.
- ii. Employees need training to change their perceptions about the benefits of embracing sustainable environmental practices in the mining sector to fight against environmental ills and preserve nature for future generations.
- iii. There is also need for trade unions representing mine employees to collaborate than just competing for membership subscriptions and share resources and knowledge to create green working environment for mine workers.
- iv. There is need for mining firms to understand life preservation and adopt green technology for sustainable mining practices today and in future and mines should abide with the environmental laws and regulations that have been set for them.
- v. Lastly, the government has to ensure clarity of laws and regulations governing mines, support mines with grants to facilitate green mining, ensure clear long-term contracts on mining leases and offer training to small artisanal miners that lack resources and knowledge of sustainable environmental practices among other recommendations.

Acknowledgements

Special thanks to mine employees who participated in this research.

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