FACTORS HINDERING WOMEN'S PARTICIPATION IN THE RWANDAN MINING WORKFORCE: A CASE STUDY OF COMIKAGI, GAKENKE DISTRICT

BY

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Supervisor: Rev. Dr. HATEGEKIMANA Celestin

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DECLARATION

I, Nkundibiza Aline Providence, do declare that this dissertation is my own work. I have to the best of my knowledge acknowledged all authors of sources from where I got information. I further declare that this work has not been submitted to any university or institution for the award of a degree or any of its equivalent.

Signed 

Date 03/09/2020

APPROVAL

This is to acknowledge that the dissertation of Nkundibiza Aline Providence (Registration No. 219014973) entitled: "FACTORS HINDERING WOMEN'S PARTICIPATION IN THE RWANDAN MINING WORKFORCE: A CASE STUDY OF COMIKAGI, GAKENKE DISTRICT" has been submitted with my approval

Supervisor's name: **Rev. Dr. Hategekimana Celestin**

Signed  :

Date : 7/09/2020

DEDICATION

To my family as a whole, especially my husband Me Nsanzimana Bernard and my children Imfura Nsanzimana Mozart Jean de Prado, Inyamibwa Nsanzimana Yseult de Zoé and Inyamamare Nsanzimana Maël Tristan;

To female mine-workers;

To all that fight for women's rights in general, and gender mainstreaming in the mining industry in particular, including members of the Rwanda Women In/And Mining Organization (WIAMO).

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Mrs Nkundibiza Aline Providence

ACRONYMS AND ABBREVIATIONS

3Ts : Tantalum, Tin and Tungsten minerals
AfDB : African Development Bank
AMV : African Mining Vision
ASM : Artisanal and Small Scale Mining
AU : African Union
AWIMA : Association of Women In Mining in Africa
BCEA : Basic Conditions of Employment Act
CDAs : Community Development Agreements
CNF : *Conseil National des Femmes* / National Women Council
COMIKAGI : *Cooperative Minière Kababara – Gikingo*
CSOs : Civil Society Organizations
CSR : Corporate Social Responsibility
GBV : Gender Based Violence
GMO : Gender Monitoring Office
GoR : Government of Rwanda
ILO : International Labour Organization
IWIM : International Women In Mining
MINIRENA : Ministry of Natural Resources
No : Number
NWC : National Women Council
OHCHR : Office of the High Commission for Human Rights
OHS : Occupational Health and Safety
PPEs : Personal Protective Equipment
RDB : Rwanda Development Board
RMB : Rwanda Mines, Petroleum and Gas Board
SDMR : Sustainable Development of Mining in Rwanda
SGBV : Sexual Gender Based Violence
UDHR : Universal Declaration of Human Rights
UN : United Nations
WEE : Women Economic Empowerment
WIAMO : Rwandan Women In/And Mining Organization
WIM : Women In Mining

ABSTRACT

The present study treated factors hindering women's participation in the Rwandan mining workforce, with a case study of Cooperative Minière Kababara – Gikingo (COMIKAGI), located in the Northern Province, Gakenke district, Ruli sector. The study had as objectives to find out factors for the poor women's representation in the mining workforce in COMIKAGI, to examine existing mechanisms within the elimination of the same factors and to suggest other mechanisms for the increment of women's participation in mining. The reviewed literature revealed that common factors for the poor women's participation in the mining workforce include the historical male-dominance and discrimination, cultural norms and misconceptions, women's physiological status, skills gaps, unfavourable physical and social environment, lack of a friendly legal and policy framework, absence of interests for mining investors to employ women and the weak women's movement. General mechanisms for the elimination of the same factors include friendly legal and policy framework, recruitment and retention strategies, formal education and capacity building and women's associations. In order to learn about the situation of Rwanda, the study chose a descriptive research design, with both the quantitative and qualitative approaches. The mining cooperative – COMIKAGI, was targeted as the study population due to its location, where the majority of blue-colour employees work in mining. The study population is the Cooperative's workforce totalizing 538, of whom 87, that is 16.17%, were women. With the Slovin's formula, 99.8 (≈100) respondents were sampled, where purposively 50 were men and other 50 female mine workers, who provided information by responding to the questionnaire. Interviews were also organized with the cooperative's senior management representative and members of the local government in different capacities. In terms of findings, men supersede women in the mining workforce because women delayed to join the mining workforce, as confirmed by all 100% respondents. The study also found that the idea that women have no required energy to perform mining activities or because they have no mining related skills compared to men, is not the case for COMIKAGI, as 83% of the study participants highly disagreed with the statement. However, the study found that the lack of facilities and alternative placements for pregnant and breastfeeding women negatively impact on the number of women in the mining workforce, among others, as confirmed by 71% of respondents. For the assurance of effective and remarkable integration of women in mining, the study recommended the establishment of a policy to have a given minimum of women in the mining workforce in all departments of mining companies and cooperatives, to build women's capacities, to have facilities and alternative placements for pregnant and breastfeeding women and to have and implement internal Gender Based Violence (GBV) related policies. Further researches are recommended to treat more topics beyond the mining workforce, including topics pertaining female members of mining cooperatives and female shareholders of mining companies.

Key words: Factors, hinder, women, participation, ASM, mining workforce, gender equality and COMIKAGI

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CHAPTER ONE
GENERAL INTRODUCTION

1.0 Introduction

The first chapter of the study on factors hindering women's participation in the Rwandan mining workforce with COMIKAGI as a case study; presents the background to the study, problem statement, objectives of the study, research questions, scope of the study, significance of the study, research design and the structure of the study.

1.1 Background to the study

The 18th century marked the beginning of human rights principles with the French and American revolutions. They mainly targeted the civil and political rights and liberties including right to life and dignity, freedom of expression, freedom from the cruel, inhuman and degrading treatment (Jeffrey & al, 2000). However, these efforts remained the business of certain countries in the world. It is within the 20th century that more steps got made, not only enlarging the scope of human rights, but also awakening the whole world to guarantee them. In that context, after the creation of the United Nations (UN) in 1945, the Universal Declaration of Human Rights (UDHR) got welcomed in 1948 (UN1, 2020). On 16th December 1966, the International Covenant on Civil and Political Rights (OHCHR, 2020) and the International Covenant on Economic, Social and Cultural Rights (OHCHR2, 2020) got adopted by the UN. More international legal instruments got adopted even on continental level, including the African Charter on Human and Peoples Rights (AU, 2020) and the Convention on the Elimination of All Forms of Discrimination against Women (UN2, 2020). Movements to assure effective assurance of women's rights, rights also recognized by same instruments, played a big role until the 1995 Beijing International Conference on women's rights (UN3, 2020).

The adoption of women's rights is a step, but the assurance of the same rights is another step. The latter might be associated with different factors, including the level of civilization of the community to which concerned women belong and the area of economic activities when it comes to the cultural and socio-economic rights. These ones include rights to religion, education, health, as well as right to equal work, equal working conditions and equal pay (OHCHR2, 2020).

The idea of equality reminds about efforts towards the respect of women's rights which got known under the "gender equality" principle (UN4, 2020). Across the world, different countries and organizations are managing to integrate women in different sectors of life with remarkable successes, though there are other places of the world, especially in Africa, where a lot still need to be done for the assurance of gender equality (Lohini, 2019).

However, when it comes to the mining sector, gender equality becomes questionable. It is not only a matter of Africa, Rwanda included; it is rather an issue that still preoccupies the whole world. Originally, different role players blame the nature of mining as economic activity, whereas others consider it as a journey of integration of women, in a sector which was historically dominated by men (Fitsum & al, 2018). For instance, in Canada, one of the countries considered as champions of women's rights, women still choose to work in manufacturing, banking and public service, and do not present interests to sufficiently join the mining industry, which is still viewed as an "old boys" club (WIM Canada, 2016). Similarly, in Sweden, another world champion in gender equality, the country still struggles to assure proportion of women in the mining industry to increase, through improving working conditions and attracting more women, through different means, including supporting the Swedish Women In Mining (WIM) organization (SveMin, 2020).

Experiences from Australia and South Africa, some of the countries where there is high exploitation of minerals in the world, women are still poorly represented. In Australia, statistics reveal that mining is still the most male-dominated industry in the country, with women comprising just 16.1% of all employees. The gender pay gap and misconception on the mining industry are key factors that Australia aims to tackle in order to completely close the gender gap by 2025 (Cecilia & David, 2020). In South Africa, 2009 reports showed that women were still 10%, and recent statistics show that the number doubled and remains insignificant compared to men. This is due to lack of skills, children and other households' affairs, as well as considering mining as the "man's world" (Halo, 2019).

In Rwanda, the first official report on the level of women's participation in mining got published in 2012 where female employees of the sector were only 9.4% of the total labour (RDB, 2012). The second and latest official survey got published in 2017, showing that women had reached 22% in the mining workforce (Okwach, 2017). However, after the publication of the new mining act of 2018,

other documentations showed that number reduced again and went under down to approximately 16% (SDMR, 2020), as mining companies and cooperatives were also reducing in number, due to the failure to comply with new rules and regulations, where the total number of mineral license holders reduced from more than 300 to 116 (Nkurunziza, 2020). Yet, article 36 of the mining act had introduced a legal provision in the hostory of mining legislation in Rwanda, for mineral and quarry licenses holders to assure gender equality in Mining (GoR, 2018).

As it is well explained by the problem statement presented here below, the above-introduced poor representation of women in mining, in spite of the Government and its stakeholders' efforts to assure gender equality in mining; led the researcher to learn about actual factors that hinder the effective integration of women in the mining workforce, in order to come up with solutions that could enable the country to also write a good history in the gender equality struggle, within the mining sector.

1.2 Problem statement

The worldwide experience shows that mining is a historically male-dominated sector. But this is not only for mining, because, before the introduction of gender equality principles, inspired by the French and American revolutions of the 18th century and emphasized by the Human Rights instruments of the 20th century, as discussed above, and before successful struggles of women's movements of the 20th century for their human and labour rights (UN5, 2020); women were generally working in domestic and caregiving services (Randstard, 2020).

Though there is political will that can be observed through different policies and visions, including the African Mining Vision (AMV) which got adopted by heads of states and governments in 2009, with a component to promote gender equality in mining, among others; there are still factors that hamper women's participation in mining. As reported by the International Women In Mining (IWIM) organization, myths and taboos for some cultures, do not allow women to work in mines, and some mines operators find no interests in integrating women in their businesses (IWIM, 2014).

Similarly, whereas Rwanda has so many success stories to tell within the journey to assure gender equality in different sectors including agriculture, entrepreneurship, education, health, media, public service and public decision-making institutions (GMO, 2019); when it comes to mining as an economic activity; the male-dominance becomes the feature of the industry.

Therefore, if other sectors managed to effectively integrate women in their workforces across the world, Rwanda included; one can wonder why this is not the same with the mining sector. Again, if there is political will in Rwanda, as expressed both in the mining law, where article 36 of the mining law requires mines operators to assure gender equality in their enterprises (GoR, 2018) and the mining policy, where the latter had set in 2009 a target to increase the participation of women in minerals industry activities to a rate ranging between 20 and 30% in 2013 (MINIRENA, 2009); one can wonder why this failed as the latest statistics show that women are under 16% (SDMR, 2020).

Therefore, the researcher was obliged to carry out a study and find clarifications to the above doubts in a scientific manner, in order to reach the objectives of the study, which guided the whole research journey.

1.3 Objectives of the study

The study has a general objective and specific objectives.

1.3.1 General objective

The general objective of the study is to assess factors hindering women's participation in the mining workforce in Rwanda with COMIKAGI as a case study.

1.3.2 Specific objectives

Specific objectives of the study are:

1. To find out factors for the poor women's representation in the mining workforce in COMIKAGI;
2. To examine existing mechanisms within the elimination of factors hindering women's participation in the mining workforce in COMIKAGI;
3. To suggest other mechanisms for the increment of women's participation in mining workforce in COMIKAGI.

1.4 Research questions

The study has the following as research questions:

1. What are the factors for the poor women's representation in the mining workforce in COMIKAGI?

2. What are the efforts to eliminate factors hindering women's participation in the mining workforce in COMIKAGI?
3. What would be the mechanisms for the increment of women's participation in the COMIKAGI's mining workforce?

1.5 Scope of study

The scope of the study is divided into content scope, geographical scope and time scope.

1.5.1 Content scope

As the title of the dissertation reveals it, the study was limited to the mining workforce with full attention to women, their level of participation in mining among other workers, with factors that determine grounds for their poor representation. This said, the study did not include female investors in terms of female owners of mining businesses or mining companies' female shareholders and female members of mining cooperatives. However, it did not forbid the researcher to consider information provided by male workers, and both male and female members of communities neighbouring mines.

1.5.2 Geographical scope

The study was conducted in COMIKAGI as a mining cooperative located in Ruli Sector, Gakenke District, Northern Province.

1.5.3 Time scope

The study considered the participation of women in mining at COMIKAGI between 2018 and 2020, while referring to the new mining law which compels mining companies and cooperatives to promote gender equality in their specific enterprises, a law which got published in 2018.

1.6 Significance of the study

The study is important to the society, the University and the researcher.

1.6.1 Importance to the public

As introduced above, Rwanda is commended for its efforts to promote gender equality. However, the same efforts in the mining sector seem to be hampered by different factors that needed to be investigated on, in order to come up with solution mechanisms that would enable the mining sector to go in the same wake as other sectors in assuring sufficient representation of women in their workforce.

Therefore, the whole society will benefit from this study, as the findings and recommendations will serve as foundation to the gender promotion in mining. Policymakers and implementers, and their stakeholders, are inspired on how to strengthen existing policies and to sharpen them for an effective increment of women in the mining workforce. Mining companies and cooperatives, mining communities and women will also benefit from the positive effects of sufficient women's representation in mining.

1.6.2 Importance to the University

The universal role of universities it to teach, carry out researches and impact on communities through community outreach initiatives. Therefore, the present study contributed to the mission of the University of Rwanda, especially for the research layer. Again, future researchers including university students will refer to this study in their future researches, as areas of further studies got recommended.

1.6.3 Importance to the researcher

The study is very important to the researcher as it is one of the requirements to be awarded a master's degree in gender and development studies. It also enabled the researcher to keep increasing research capacities, which shall in turn enable her to carry out similar works, for non-commissioned researches and commissioned ones like consultancies. Being a human rights activist in the area of women's rights in mining, the study also enabled the researcher to learn more about problems of women in mining and related solutions; which shall enable her to reach her goals pertaining the promotion of gender in mining.

1.7 Research design

As an overall strategy to integrate the different components of the study in a coherent and logical way, in a way ensuring the effective addressing of the research problem, and in a manner that enables the study to obtain the relevant information (Kassu, 2020); the present study chose a descriptive research design to learn about factors that hamper the women's participation in mining and how they can be contained.

Assessing factors hindering women's participation in mining, with COMIKAGI as a case study, also inspired the researcher to conduct the research while considering both the quantitative and qualitative approaches. The qualitative research has enabled the researcher to identify the same factors, whereas the qualitative research helped to acquire statistical information on how the mining industry is impacted by the same factors, and what can be done to contain them.

Using COMIKAGI as a case study, as it is deeply discussed in the methodology, the researcher wanted to learn about the status of factors hindering women in an area where mining activities dominate all other economic activities, like Ruli Sector of Gakenke District. Among 538 total employees of the cooperative, the study sampled 99.8 (≈ 100) who provided their information responding mainly quantitatively to questions gathered in a questionnaire. In order to cross-check their information, the study collected more qualitative data from the cooperative's senior management, and local leaders with responsibilities pertaining gender and social affairs. Collected data got treated through presenting and analysing them using figures, tables and chats, as well as narrated texts in both a quantitative and qualitative manner to match with the study design.

1.8 Structure of the study

Apart from the starting part of declaration, approval, dedication, acknowledgment, acronyms and abbreviations, list of figures, list of tables, table of contents and the abstract, as well as the ending part of references and appendices; the present study is structured as follows:

- Chapter 1: General introduction
- Chapter 2: Literature review
- Chapter 3: Methodology
- Chapter 4: Data presentation and analysis
- Chapter 5: Conclusion and recommendations

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

Chapter two of this study reviews the existing literature on women's participation in mining. Before venturing into the status of women in COMIKAGI as the case study, it is worthy to first learn about the meaning of key words of the dissertation as well as the theoretical framework establishing the relationship between factors faced by women and the level of women's participation in mining. It is also necessary to learn from what happened elsewhere in terms of challenges and how they were handled, while referring to what got recorded in writings and published, in terms of literature review. Therefore, after theoretical and conceptual matters, the chapter reviews common factors hindering women's participation in the mining workforce, general efforts within the elimination of factors hindering women's participation in the mining workforce, challenges within the elimination of factors hindering women's participation in the mining workforce and existing mechanisms for the increment of women's participation in mining workforce.

2.1 Definition of key terms

Key terms of the present study include factors, hinder, women, participation, mining and workforce.

2.1.1 Factors

According to Cambridge English dictionary, a factor is a fact or a situation that influences the result of something (Cambridge Dictionary, 2020). In this study, factors looked for are the ones that influence the level of women's participation in mining.

2.1.2 Hinder

Referring to the Oxford English dictionary, hinder means "to make it difficult for somebody to do something or for something to happen" (Oxford English Dictionary, 2020). In the context of this study, the verb hinder is linked to factors that make it difficult for women to participate in the mining workforce as their male peers.

2.1.3 Women

Women is the plural of "woman" which means an adult female person (Merriam-Webster, 2020). In the context of this study, women are female workers who are at least 18 years old as the majority age to be employed is 18, especially in worst forms of labour that include mining, as provided for by article 6 of the Rwandan labour law (GoR2, 2018).

2.1.4 Participation

Participation is the action of taking part into something (Lexico, 2020). In this study, participation evokes the taking part of women in mining activities as workers.

2.1.5 Mining

Mining refers to the process or industry of obtaining coal or other minerals of different types, quarry included (Lexico2, 2020). In this study, mining is limited to the exploitation of ore deposits that exclude quarry.

2.1.6 Workforce

Collins dictionary defines "workforce" as the total number of people in a country or region or any given industry who are physically able to do a job and are available for work (Collins Dictionary, 2020). Therefore, in this piece of work, the workforce represents the total number of people who are employed in the mining industry, men and women.

2.2 Theoretical framework

This section brainstorms on the theories likely to be associated with the impediment of women's participation in the mining workforce. They include gender equality, gender equity, gender empowerment, women empowerment and gender mainstreaming.

2.2.1 The theories of gender equality and gender equity

The evocation of women's participation in the mining workforce insinuates on the assurance of gender equality in mining. But before reaching that step, it is worth to review first the theory of gender equality itself.

Gender equality is interchangeably used together with gender inequality. One side, gender equality is referred to as the state of having the same rights, status, and opportunities as others, regardless of one's gender as female of mail. In other words, it is the act of treating women and men equally. Gender equality does not imply that women and men are the same, while considering human anatomy and physiology. It rather implies that they have equal value and should be accorded equal treatment (Cambridge Dictionary, 2020b). On the other side, gender inequality is the social process by which people are treated differently and disadvantageously, under similar circumstances, on the basis of gender (Oxford Dictionary, 2020).

Gender equality, and eventually gender inequality, is surrounded by different theories including stereotypes, patriarchal conceptions, masculinity and femininity, gender equity, gender and modernization, as well as gender and development. For instance, gender stereotypes are baseless ideas or judgments whereby males and females are arbitrarily assigned characteristics and roles determined and limited by their sex, as man or woman, as boy or girl, as wife or husband, or as further or mother (Council of Europe, 2020). Stereotypes go together with patriarchal beliefs has for so long dominated different societies of the world, characterized by the devaluation of girls and women (API-GBV, 2020). Masculinity and femininity come in to promote men or women, respectively, regardless of the other gender's inclusion (Dale B. , 2005).

If gender equality is the end, gender equity is the means. This is due to the fact that gender equality does not mean that women and men will become the same. It rather means that their rights, responsibilities and opportunities will not depend on whether they are born male or female. Therefore, gender equity is all about fairness of treatment for both sexes, according to their respective needs, given that to some extent, they cannot be the same, but still need to be satisfied (Katica, 2017). The modernization theory backs the gender equity in blaming cultural factors, myths, norms and even religious ideas that lead to women's subordination in the developing world or undermine the role of women in development (Karl, 2017). Hence, the modernization theory backs the gender and development theory which preaches that economies will become more resilient and productive, once they reduce gender inequalities, but rather actively support the equal participation of women in all spheres of life (OECD, 2020).

As it was emphasised by researchers, one can consider that gender equality practically depends on equal control over surplus resources and, theoretically, as per the modern society; it depends on the full abolition of the gender segregation of all social roles, especially work roles, whether performed in the private sphere or in the public sphere, whether paid or unpaid (Judith, 1989).

Gender equality in mining is a concept at its infant age, when it is considered that the mining industry has been male-dominated for so long. As it is discussed in the chapter, there are persisting theories in different regions of the world, according to which, mining as a blue-colour industry would remain dominated by men; thoughts that are associated with gender stereotypes, the patriarchal conceptions, as well as the masculinity and femininity theories, on one side.

On the other side, the end of the 20th century was marked by movements of both men and women fighting for gender equality in mining advancing all positive gender theories, including the gender equity, the modernization and gender and development. For instance, though women cannot become men, gender activists in the mining sector managed to prove that when treated fairly, paid same salary with men for same performed jobs and protected against cases of Gender Based Violence; women enjoy equal rights and opportunities and contributed to the development of businesses, families and countries (Nsanzimana & Nkundibiza, 2020). Again, studies demonstrated that the modernization theory is gradually helping societies to forget about cultural myths and norms, and tolerate the integration of women in mining (Carleton University & al, 2020). Similarly, roles of women in mining corporations' successes are being recorded and therefore proving the interests for investors to welcome more women in their workforce (Lonmin, 2010).

Therefore, in the framework to promote a descent and inclusive working environment, gender equality and gender equity should be considered, in order to effect social and institutional change that leads to sustainable development with equity and growth. For the workforce side, this implies equal rights, responsibilities and opportunities that all persons should enjoy, regardless of whether one is born male or female. They should be equality of opportunity and treatment in employment, equal remuneration for work of equal value, equal access to safe and health working environments and social security, equality in association and collective bargaining, in obtaining meaningful career development. They should also be a balance between work and home life that is fair to both women and men, as well as equal participation in decision-making at all levels (ILO, 2020).

2.2.2 The theories of gender empowerment and women's empowerment

The empowerment itself constitutes a progression that helps people gain control over their own lives and increases the capacity of people to act on different issues, while applying acquired ability to make their own choices. While gender empowerment is about empowering people of any gender, in general, women's empowerment applies specifically to the building of women's capacities as a generally marginalized gender, in political and socio-economic contexts (Anke & Al, 2009).

Given the historical male-dominance of the mining workforce, the gender empowerment that interests the present study is women – oriented, that is, women's empowerment. The first step to empower women in mining is to boost their mining related skills, because an effective mining workforce both in formalized ASM and industrialized mining need skills. Basing on the gender equity theory as discussed above, though women can be employed in all departments; the women's empowerment in mining also implies the creation of women-focused services (IISD, 2017). This goes together women-friendly facilities including Personal Protective Equipments (PPEs), availing alternative placements for pregnant and breastfeeding women, putting in place childdcare facilities, female change rooms and bathrooms. The last element of women's empowerment in mining is about protecting women about challenges that would prevent them from freely performing their works, including myths and misconcetions, sexual and gender based violences, and similar other challenges. For women who are eager to invest in mining, their empowerment also includes access to finance and capacity building initiatives (Tolonen, 2017).

2.2.3 The theory of gender mainstreaming

Gender mainstreaming is an approach to policy-making that takes into account both women's and men's interests and concerns. It is a new approach officially introduced by the 1985 Nairobi World Conference on women. It was also adopted as a strategy in international gender equality policy by the 1995 Beijing women's international conference. Therefore, gender mainstreaming got universally adopted within the perspective to assure the integration of gender principles in all stages and levels of policies and programmes, by the actors involved in policy-making. The approach of gender mainstreaming helps to solve hidden gender inequalities, as a transformative approach with a great potential for social change (Council of Europe, 2020)

When it comes to the mining industry which a historical male-dominance, gender mainstreaming as an approach serves as the foundation to the gendering of mining policies both at national and company levels, as well as the gendering of mining visions at regional and international level (Adriana & Al., 2009). This is the case for example, of the African Mining Vision (AMV) adopted by African Heads of Sates and Governments, with an aim to boost the African economy with support from mineral resources, while also assuring women's involvement in the vision both as role-players and beneficiaries. With the approach, gender issues are analysed and addressed in different mining strategic instruments and projects (UN Women, 2012).

This study assesses if gender imperatives are therefore considered in the mining workforce, if the level of female mine-workers is not negatively impacted by the failure to safeguard principles and best practices of gender equality, gender equity, gender empowerment and gender mainstreaming, in the mining workforce.

2.3 Conceptual framework

This section treats research variables in terms of independent variable and dependant variable, as well as their "cause – effects" relations, within the framework of factors that hinder women's effective participation in the mining workforce.

2.3.1 Research variables

The research is made of independent variable and dependent variable as hereunder presented, together with their relation, in terms of cause and effect of the variables. In research design, independent variables are those that a researcher can manipulate, whereas dependent variables are the responses to the effects of independent variables (Neil, 2020). In other worlds, a dependent variable is a variable that is explained by one or more other variables, which are referred to as independent variables. The decision to treat a variable as a dependent variable may also imply a claim that an independent variable does not merely predict this variable, but also shapes the dependent variable (Paul, 2020).

Therefore, in our study, the variable which the researcher can manipulate as an independent one, is all about those factors, which can be many or few, positive or negative, that can affect the level of women's participation in mining. The latter cannot be manipulated by the researcher, but rather, it constitutes a response to the same changes in factors, as it is well discussed in the developments below. In other words, the independent variable is the assessment of factors, whereas the dependent variable is the women's participation in the mining workforce.

2.3.2 Cause and effect in the research variables

While establishing the relationship between independent and dependent variables, in the social sciences; independent variables are typically thought of as being the cause, and dependant variables being the effect. Therefore, the independent variable affects the dependent variable (UTAH, 2020).

In the study on factors hindering women's participation in the mining workforce, the relationship can be observed from the fact that the level of participation of women depends on different factors as discussed all along the study. Though the research scope focuses on challenges like cultural barriers, the historical male-dominance of the mining industry, absence of skills and favourable environment; it also reviews some solutions that can positively impact on the increment of women in the mining workforce, like good policies and laws, women's facilities, capacity building initiatives for skills acquisition, and others.

2.4 Common factors for the poor women's participation in the mining workforce

Common factors for the poor women's participation in the mining workforce as discussed in this section include historical male-dominance and discrimination, cultural norms and misconceptions, pregnancies, births, breastfeeding and child care, other responsibilities in families and households, skills gaps, unfavourable physical environment, Gender Based Violence, lack of the political will, absence of business cases for gender equality in mining and the weak women's movement for gender equality in mining.

2.4.1 Historical male-dominance and discrimination

Mining has been dominated by men for so long. The idea for some miners to refuse the integration of women in mining via not establishing a friendly environment for women or protecting their rights result in a direct and indirect discrimination, whereby pro-women advance the idea that women are not physically fit to be employed in the mining industry (Oxfam Australia, 2020).

Again, the oil, gas, and mining extractive ventures have truly been male-ruled at all levels, from positions of authority in significant organizations to occupations working in mines and on oil-rigs. For instance, in the 500 biggest mining organizations, ladies make up only 5% of sheets of chiefs. Under portrayal of ladies in these enterprises blocks open doors for a more fair, comprehensive, and practical normal minerals administration scene. Natural resources extraction is a key income stream for some nations around the globe. Today, such huge numbers of nations over the world, are financially subject to products, for example, copper, oil, and gas. At the point when represented well, characteristic assets can add to monetary development advancement. In any case, research has shown that the advantages of extraction, including open doors for work and pay, stream lopsidedly to men, where women are left behind (Kelsey & Robin, 2020).

Conversely, ladies are bound to shoulder the damages of extractive businesses without receiving the rewards. For instance, ladies excessively suffer extraction-related automatic resettlement, ecological harm, and food instability since they are bound to be answerable for resources, cultivating and regularly fill in as essential overseers inside their families and networks. Ladies are additionally less inclined to be utilized inside extractive enterprises. The World Bank affirms that organizations in extractive businesses once in a while utilize ladies at a rate under 10%. Since ladies' monetary cooperation is a significant element for financial development and advancement, these lopsided work numbers influence not exclusively ladies' vocations, yet additionally the prosperity of their networks. Business cases show however that the increment of women’s participation in mining can drive profitability and development, improve organization commitment with nearby networks, and at last raise benefits of mining companies (Oxfam Australia, 2020).

In spite of the roles that women can play in mining, they still face discrimination, which discourages more women to join the industry. Women reported that working on remote mining sites, in some companies, there is little respect for women in blue-collar positions by their male counterparts, and that mining has its own culture and when you are on site, there are unspoken differentials in performance standards. However, women chose to remain silent, and do not report discrimination for fear their claims will not be taken seriously by their male superior. This is also an issue because the majority of white-collar positions where decisions are taken and conflicts are resolved, are occupied by men, who would end in deciding in favour of their fellow men, or who would receive no discrimination queries from female workers, because the latter do not feel comfortable to report such cases (IWIM, 2014).

In South Africa, things became during apartheid, as gender discrimination in mining got related to the apartheid where the movement and residency of Africans, especially women, were restricted; mechanization, geographical location of mines, single sex hostels and the migrant labour system guaranteed the exclusion of women from mines. The minority female white people were employed in white-collar jobs, and black women were refused to work in mines. Therefore, there were only personal protective equipment (PPEs) for men, change rooms, wash rooms and even hostels built in male-friendly structure. There were exceptions, however, mainly in asbestos mines, where women were almost half of the workforce from the 1890s until the 1980s (Asanda-Jonas, 2020).

As it can be seen, discrimination associated with the historical male-dominance of the mining sector, constitute key factors that do not allow women to freely join the mining sector across the world.

2.4.2 Cultural norms and misconceptions

Cultural norms and misconceptions are associated with the poor representation of women in some countries. They are centred to some myths that women in menstruation brings bad luck to the site, that no woman can where overalls in forms of trousers which are naturally made for men, that therefore a woman wearing a skirt cannot enter the mine site, and that a woman who enters the mine has no family education, is a prostate and cannot get married to any man.

For instance, in Zimbabwe, although hundreds of thousands of women are involved in the mining industry; there are traditional beliefs that women bring bad luck. This often prevents some from thriving in the field. Many female miners are pushing back, saying that their participation is necessary for economic growth, but others say it is not worth the effort. The presence of some women leaders in the mining industry does not mean that they are immune to traditional beliefs. They have rather managed to defeat myths and beliefs to earn a living in mining. However, this female vulnerability backs men who sometimes even use these myths and beliefs as a way to steal profits from their female co-workers. In any case, there are some women who have successfully ventured into mining just like some men, regardless of these traditions and who are contributing to the elimination of traditional and cultural factors that hinder effective women's participation in mining (Evidence, 2019).

There exist other myths that the employment of women in mining leads to accidents and deaths. These myths remain however alive in so many countries including high income ones like USA and India. In the latter for example, they have an old tale: the rock is a whimsical woman who does not accept the competition of other women, and this jealousy causes falls and accidents in the mine. Related to this tale was the prejudice that all miners are "macho men" and that women do not belong in the mine. These legends still circulate in the workplace and it is shameful that mining unions still disseminate this outdated image, take advantage of old prejudices, and use these tales to scare women away from working underground (Lena & al, 2014).

In the same angle, in the South African mining sector of 1990s, there were myths that women's bodies are weak and thus unsuitable for mine work. These misconceptions in some instances, still exist and men think that women's bodies, due to menstruation, are believed to not only be 'leaky' and 'polluted' but to have powers to influence seismic events underground leading to rock falls, and even to cause minerals to disappear (Asanda-Jonas, 2020).

Cultural norms and misconceptions do therefore limit the number of women in the mining workforce, where women do now want to breach on their culture to avoid further related consequences, on one side. On the other side, myths remain theoretical and with the actual technological trends and transformational approaches from artisanal and small scale mining (ASM)

to industrial mining; there is not provable evidences of myths that hamper women's participation in mining (Mining Index, 2020). Maybe, issues pertaining pregnancies, births, breastfeeding and child care may persist in case companies, the regulator and their stakeholders do not take appropriate mechanisms.

2.4.3 Women's anatomy, physiology and family responsibilities

According to the International Labour Organization (ILO), women have right to work while pregnant and after their maternity leaves. Again, breastfeeding is not an obstacle to productivity: researches show that women are more likely to stay in their job in the longer term, if they can breastfeed at work – which is a good way of retaining skilled workers. Supporting breastfeeding among employees only involves limited costs for employers, both in terms of the employee's time and the infrastructure that it requires, including places and means for child care (ILO, 2020).

Given the nature of mining activities, especially for women working in the blue-collar sections; it is hard for women to keep performing same works as before, while pregnant and during their breastfeeding period. This will automatically lead to the reduction of female numbers in mining and will prevent other women from joining the industry (Casper, 2009).

In so many ASM systems, mine workers leave their families and settle in the mining sites, especially for illegal or informal miners of African and South-American (Latin) American regions. In these circumstances, it is hard to talk about women's rights pertaining pregnancy, breastfeeding and child care. For countries where ASMs are being formalized however, there are no formal child care places, where women can leave their children while on duty and use hours designated for breastfeeding to care for their children. For this reason, many women choose to leave the mining industry after births and hence, negatively impact on the representation of women in the mining workforce, besides other families and households responsibilities that fall under women's duties (Emily, 2015).

2.4.4 Families and households responsibilities

Single or married, young or adult, women remain the primary caregivers in families. In Rwanda, nuclear families receive little help with care from outside the household. Older children – both boys and girls – help with care tasks, often more than their fathers, although girls tend to help more than their brothers. Though there is remarkable progress in assuring gender equality in families and for households chores and similar unpaid works, women are still behind in regards to the involvement in paid works. Yet, where women manage to enter different economic activities sectors, women's paid work is important for meeting household needs, and is vital in female-headed households. In some families, unpaid care works done by women in their families, do not allow them to deal with paid works, outside their households (Brigitte & al, 2017).

Things become worse when it comes to the balancing of household works and paid mining activities, where the latter are not yet welcomed in different communities, and where women themselves prefer dealing with unpaid care work to working in mining. In fact, once married, women are discouraged from working at the mine site by their communities and their husbands. Researches in the eastern and central Africa showed that roles of women as wives and as miners are incompatible whereby women who work in mining are thought to be disorganized in their homes. Though efforts are being made for women economic empowerment (WEE), family and household responsibilities prevent women to integrate the mining sector at the same level as men, besides other reasons that include lacking skills relating to mining activities compared to men's skills (Carleton University & al, 2020).

2.4.5 Skills gaps

Apart from countries which have high level of technology and industrialization of their mining industries like developed countries in general, mining activities in Africa and Latin America are still ASM-dominated. This said, the majority of miners have no formal education in mining. Contrarily, they acquired mining skills on job. As the mining sector has been male-dominated for so long, this will immediately justify the reason why men are highly represented all departments of mining companies, compared to women (Ana María, 2020).

For instance, in Colombia, besides changes observed in younger miners, gender stereotypes and the sex-based division of work still respond to classical patriarchal patterns, with skills related aspects. In this country, there is a remarkable urgent need of education and specialized trainings, as central strategy to overcome existing gender gaps, supported by stereotypes and prejudices that limit women's opportunities. Note that in some places, even traditional manual and unskilled work in the mining sector is denied to women. Because of this, there are a few women carrying out security, administrative and supervision duties scattered across various mines, along with others that work on different crafts (Ana María, 2020).

In any case, mining related skills will not enable many women to integrate the mining workforce as it would be, and will therefore negatively impact on the level of women's participation in mining, together with the unfavourable physical environment and facilities specific to women, among other factors.

2.4.6 Unfavourable physical environment and facilities specific to women

Women are known to like working in clean environments. Given that mining related works are classified among blue-collar jobs, in case there is no favourable physical environment and facilities specific to women; the latter may lose the interests to join the sector. All workers require access to adequate facilities. However, it may be reasonably practicable to provide women with specific facilities fitting their anatomical and physiological body structures (Dineo, 2020).

If women go to the mine site and go back home dirty, fellow women will feel discouraged to join the mining workforce. Mine sites with tunnels that are not friendly to women, will compel them to leave the mine and those ones who do not work in mines, will have information about what happens there, and will choose not to join the industry. Therefore, women needs all other facilities meant to assure a descent work at the workplace as their male workmates. However, they also need special facilities like specific washrooms and bathrooms, change rooms, as well as PPEs and other facilities (Botha & Cronjé, 2015).

Technically, if workers have to change in and out of clothing due to the nature of their work, access to private changing areas with secure storage for personal belongings should be provided.

This includes workers who need to wear personal protective clothing or uniforms while they are working and leave their work clothing at the workplace. As men should have theirs and women theirs, the latter's change rooms should be conveniently located and equipped with seating to enable the numbers of workers changing at one time to sit when dressing or undressing, with mirrors, either within the changing room or directly outside it and an adequate number of hooks and/or shelves. This the same for shower facilities, toilets and others (Minsitry of eduction and industrial relations, 2012).

Women-friendly physical working environment does not only enable more women to join the mining industry as workers, but also would contribute to the prevention of some GBV cases in mining. Absence that friendly environment and presence of GBV, will therefore commonly hinder the effective integration of women in the mining workforce.

2.4.7 Gender Based Violence

Some authors treat GBV as inclusive of acts of sexual harassment, some others treat both of them as separate. In this study, sexual harassment and other sexual abuses are treated together with other elements of GBV. Forms of GBV include physical, psychological, economic and sexual acts of GBV. Physical GBV is when a person is physically abused because he/she a man or woman. Psychological GBV includes insults, denigration and any other emotional harm against someone because of her/his sex. Economic GBV is about harming someone through economic affairs, like refusing him/her right to a property or to the co-management of co-owned property, money and other economic assets, because of her/his gender. Sexual harassment is all about sexual abuses against someone due to her/his gender (EIGE, 2020).

The same acts are likely to take place in the mining industry and to discourage women from abundantly joining the mining industry, in case no efforts are invested in their containing, with most cases relating to sexual and economic GBV. For instance, it was revealed that women are paid less salaries compared to men, whereas they have performed same works. Similarly, in mining, there is a common practice to place women in less paying positions, which is both discrimination and GBV. Moreover, some women in mining are sexually abused for them to get and maintain their jobs, which they perform without any peace of mind.

The major problem is that, in addition to cases of sexual GBV, these cases are under-reported, because women chose to be silent. The fact to represent the minority of the mining sector, makes it easier for women to be victim of sexual harassment, among other contributing factors that include lack of security, lack of policies and political will to protect women in mining (Mining Review Africa, 2020).

2.4.8 Lack of the political will

The history reveals that political will is one of the key tools to assure gender mainstreaming in mining. The Government can express this will in different legal and regulatory instruments, including mining laws, gender and mining national level policies. Instead of make such steps, there countries which do not adopt a similar system. For instance, in certain territories, women were not encouraged historically (or allowed) to work underground in the mining industry. As well as it being illegal in 1960s Australia for women to work underground, in South Africa it was considered bad luck to have women underground. This historical legacy takes time to change and can lead to unconscious bias and micro inequities, and limit the integration of women in the mining workforce (WIM UK and PwC, 2020).

The biggest myth in the goal gender equality is that it means superiority, as opposed to genuine equality. Strong leadership, commitment and prioritization by stakeholders, including governments, is essential in debunking this myth, and therefore assuring good representation of women in mining. Coordination across government at all levels as well as with non-mining institutions, is one of the means of expression of the political will. Through constructive engagement with other government institutions and decision making, integrating gender into mining legislation makes that little bit easier. To ignore the relevant institutions involved in the regulation sector, and the power and influence the yield, would be foolish. Gender institutions are often isolated from decision-making, something that needs to change in order to enable progress (Dale, 2020). The remaining burden would be the monitoring of legal and regulatory systems put into place, and where possible, developing a business case, to justify economic interests to integrate more women in mining.

2.4.9 Poor justification of the economic interests to integrate more women in mining

Also known as business case, some mining companies have not yet seen interests in integrating more women in mining. Business cases constitute a set of justification for a proposed project or undertaking on the basis of its expected commercial benefit. Mining companies especially operating under ASM features, view women as a burden instead of seeing them as role players in their companies' successes. Therefore, investors will see first the work of men as the one that leads to the company's profit, instead of the work prejudice (WIM UK and PwC, 2020).

In the UK, the Government itself published interests of employing women in mining, known as business cases, for also diversity because, whether discrimination and bias is conscious or unconscious, it is likely to impact negatively on the working lives of those who experience it and ultimately lead to negative impacts on performance and commitment at work. Some mining companies are now addressing unconscious bias through training in their diversity efforts to help workplaces be better ready to understand and accept differences (Ana María, 2020).

Note that in the study of the International Finance Corporation and Lonmin in 2010, it was found that there is growing evidence that integrating women into the workforce leads to an increase in productivity, efficiency, profitability and reliability for mining companies. The company leaders see the potential for women to be better and more reliable workers; increasing their numbers would positively affect the bottom-line. For example, studies have shown that women take better care of equipment, hence increasing the life span of the equipment and saving costs for companies. Women are just shown to cause less wear and tear on equipment. Therefore, while there is always the option of sending women home on paid maternity leave packages, there is a strong business case for finding alternative placement for the women. Not only is it financially beneficial for the woman and her family if she continues earning a good salary in view of the upcoming birth, but it is also a way for the company to retain the woman as an employee and reduce the possibility of her quitting the job (Lonmin, 2010).

But, women's movements would contribute in advocacy for the business cases in mining to be known and developed by mining companies in partnership with women's associations and similar organizations as stakeholders.

2.4.10 Lack of or weak women's movement for gender equality in mining

Women's movements have been playing a role in insuring effective integration and retention of women in the mining workforce. The same movements led to the elimination of laws that were prohibiting women to work in mine sites in general and in the underground tunnels, in Australia and South Africa. They can be international, regional and national women's platforms, as well as internal women's bodies, that may include saving groups for women working in the same mining companies, trade-unions, and other formal or informal associations (Halo, 2019). In fact, women play a key role in mining associations and 'bottom-up' movements. The successful combination of the two approaches will be driven by women organizing and working together to collaborate for change. Civil society groups and mining cooperatives targeted at women must be recognized and supported as key drivers of women's visibility in the mining industry (Dale, 2020).

Women's movements will help them to join efforts, disclose GBV and related abuses cases, set channels for communication, do advocacy for themselves, build their capacities against their skills gaps, build a physical friendly environment, and advocate for the fighting against all the factors that hinder their effective integration and retention in mining, as discussed under this section. Therefore, the challenges can turn into mechanisms for elimination of factors hindering women's participation in the mining workforce, as discussed in the next section.

2.5 General mechanisms for the elimination of factors hindering women's participation in the mining workforce

Existing documentations as reviewed under this chapter, reveals that existing general mechanisms for the elimination of factors hindering women's participation in the mining workforce include friendly legal and policy framework, recruitment and retention strategies, formal education and capacity building, women's associations, community's awareness raising and workplace women's rights protection.

2.5.1 Friendly legal and policy framework

The leading mechanism to increase the participation of women in mining is the friendly legal and policy framework. In spite of the historical male-dominance of the sector as above discussed, legal and policy instruments contributed to the situation. The ILO itself, in its 1935 act, article 2, was an obstacle. It read: "no female, whatever her age, shall be employed on underground work in any mine" (ILO, 2020). Because of the same ILO agreement, many countries delayed to assure the equal opportunities in mining. For instance, Germany did not withdraw from that agreement until 70 years later, in 2008, when the European Court of Justice ruled that it contravened the principle of equal opportunities for men and women in terms of access to employment. Women have worked in mining, after the repealing of the women's banning provision, in the USA, since the early 70s, in Canada, since 1978 and in South Africa, since 1994. However, the proportion of women in mining is will remain low, until more legal and policy efforts become successful (Dräger, 2020).

Today, in the both the common law system (UK and its colonies) and the civil law legal system (other European countries and their colonies), there are no more laws and policies prohibiting women from working in the mining industry. It is only in some Islamic legal system countries, based on religious and cultural norms, that women are not yet allowed to work underground and on extractive sites (AfDB, 2020). But again, though the laws and policies at issue do not openly discriminate women, a few of mining laws and policies clearly make it an obligation to integrate women in their mining workforce. Moreover, some laws and policies cater for gender mainstreaming in mining, without indicating the percentage of women that are supposed to be recruited and retained, compared to fellow male miners. This is the case for Malawi and Sierra Leone, for instance (Sophie & al, 2020). This is the same for the Rwandan case where the mining act which remains silent regarding the percentage of women to employ (GoR, 2018).

Apart from laws emanating from the parliament, policies from the Government in terms of ministries, departments and other government agencies, including those ones having gender or mining in their attributions, play a big role in assuring gender mainstreaming in the mining sector.

The laws and policies can also be detailed or centred to a given factor that hinder women's participation in the mining workforce, like the Occupational Health and Safety (OHS), as it is the case for example of the Basic Conditions of Employment Act (BCEA) of South Africa, which yielding good fruits since 1997, in terms of contributing to the increment of women's participation in mining, with a descent work assurance for men and women as the primordial objective (Casper, 2009).

According to the BCEA, for instance, the Government established a Code of Good Practice on the Protection of Employees during Pregnancy and after the Birth of a Child. According to section 5 about the protection of the health of pregnant and breastfeeding Employees, the BCEA prohibits employers from requiring or permitting a pregnant employee or an employee who is breast-feeding to perform work that is hazardous to the health of the employee or the health of her child. This requires employers who employ women of childbearing age to assess and control risks to the health of pregnant or breast-feeding employees and that of the foetus or child. This therefore motivate women to abundantly join and stay in the workforce (ILO2, 2020).

In the same angle, employers are required to identify, record and regularly review potential risks to pregnant or breast-feeding employees within the workplace, protective measures and adjustments to working arrangements for pregnant or breast-feeding employees. Where appropriate, employers are also required to maintain a list of employment positions not involving risk to which pregnant or breast-feeding employees could be transferred. Employers are moreover required to inform employees about hazards to pregnant and breast feeding employees and of the importance of immediate notification of pregnancy. Workplace policies should encourage women employees to inform employers of their pregnancy as early as possible to ensure that the employer is able to identify and assess risks and take appropriate preventive measures. The employers are furthermore required to keep a record of every notification of pregnancy (Casper, 2009).

Note that according to the BCEA, when an employee notifies an employer that she is pregnant her situation in the workplace should be evaluated. The evaluation should include an examination of the employee's physical condition by a qualified medical professional, the employee's job, workplace practices and potential workplace exposures that may affect the employee.

If the evaluation reveals that there is a risk to the health or safety of the pregnant employee or the foetus, the employer must inform the employee of the risk, after consulting the employee and her representative, if any, determine what steps should be taken to prevent the exposure of the employee to the risk by adjusting the employee's working conditions. The employee should be given appropriate training in the hazards and the preventive measures taken. If there is any uncertainty or concern about whether an employee's workstation or working conditions should be adjusted, it may be appropriate in certain circumstances to consult an occupational health practitioner. If appropriate adjustments cannot be made, the employee should be transferred to an alternative position. Employers must keep the risk assessment for expectant or new mothers under regular review. The possibility of damage to the health of the foetus may vary during the different stages of pregnancy (Lexis Nexis South Africa, 2020).

There are also different risks to consider for workers who are breast-feeding. Arrangements should be made for pregnant and breast-feeding employees to be able to attend antenatal and postnatal clinics as required during pregnancy and after birth. Arrangements should be made for employees who are breast-feeding to have breaks of 30 minutes twice per day for breast-feeding or expressing milk each working day for the first six months of the child's life (Casper, 2009).

Whereas the section on factors hindering women's participation in mining shows that pregnancies, births and breastfeeding lead to the prevention of the increment of women in mining, the BCEA has brought in solutions to the same problems, which solutions can be adopted anywhere, as they can inspire mining companies in retaining recruited female workers.

2.5.2 Attraction, recruitment and retention strategies

Another commonly reported mechanism to increase the participation of women in mining is the attraction, recruitment and retention of women which starts by setting related strategies and thereafter implement the same strategies. In all cases, women represent a large pool of untapped resources that could become very interested in joining and staying in the mining industry, which makes their attraction and retention significant (Nyabeze & Espley, 2020).

Among other strategies, there is the practice of providing scholarships and support for vacation students or for graduate programmes, which are specific to women. There is also using gender-specific recruitment strategies. Examples included ensuring that women are represented in the recruitment shortlist for all manager level positions, and setting targets for female workforce participation. Another example includes rebranding to increase focus on attracting women into non-traditional roles through redesign of a company website, the main source of recruitment advertising. Other strategies include featuring images of women in media releases to the local press and in internal and external advertisements. Advertisements outlining company values and culture and promoting diversity and work-life balance are also part of the strategies. Other companies may choose to target university career fairs and industry events promoting benefits such as paid maternity leave, career planning and flexible work conditions. One of the more frequent gender-specific recruitment strategies is to include an Equal Opportunity statement in job advertisements (Linley & Judy, 2011).

Not surprisingly, the survey identifies that one of the key ingredients for retention of women in mining is the provision of mentors and sponsors. Another key aspect for retention is the provision of progressive employment policies that address the need for a degree of flexibility in work hours and a culture of balance between work and personal life demands. Nyabeze and Espley (2010) argue that retention strategies for women would be those reasons that compelled them to join the mining workforce, which also burn in hearts of women who have not yet joined the industry. They include scholarships and mentorships, outreach efforts via high schools, summer student employment exposure, networking and travel opportunities due to global nature of the job, regular professional development and training, attractive salaries and benefits and excellent networking characteristic of the industry (Nyabeze & Espley, 2020).

Other strategies for women's retention include assuring their privacy in mines, through availing separate washrooms and exchange rooms for men and women, having alternative placements for pregnant women who cannot enter tunnels due to their health conditions, as well as providing child care rooms for breastfeeding women who resume services after their maternity leave.

When combined with other mechanisms, including education and capacity building, women feel welcomed and well treated in mining and decide to stay, while welcoming fellow women to join the industry (Lonmin, 2010).

2.5.3 Formal and informal education and capacity building

As discussed above, the male-dominance of the mining industry is due to lack of mining skills on the side of women, given that many of men's skills acquired them on job, when women had not started venturing into blue-collar jobs and were still busy with the unpaid care works in their families and households, besides laws and policies which were prohibiting women to work in mines, for some countries. As today, doors are open to women to join the industry, they need to be equipped with skills to perform mining activities, which skills need to be regularly updated to meet new trends and technologies in mining, hence, their capacity building in their different forms (Carleton University & al, 2020).

Capacity building has different forms including formal education in terms of scholarships and study that can be awarded to miners on duty, on-job and off-job trainings, attending conferences and workshops, and participating in study-tours, as well as benefiting from success stories by successful workers and mining companies. Women's formal and informal education and capacity building, for them to contribute to the increment of women's participation in mining should not be limited to only governance aspects. They have rather to include mining and processing techniques in order not only to encourage small scale miners to improve their mining techniques from artisanal to semi- mechanized or mechanized level, but also in order to enable women occupy better paying positions in mining companies. Moreover, this helps miners to improve their technical know- how to overcome the traditional methods of mining and increase productions and hence the financial capacities of mining companies, which in turn contribute to the increment of salaries and benefits of workers, female miners included (Immaculate & Paulina, 2020).

2.5.4 Women's associations

The role of women in their own promotion towards gender mainstreaming in mining is played in all levels and layers of the mining industry across the world, in both a downstream – upstream and vice versa approaches. It is also a role to be played by women in civil society organizations (CSOs), associations of female investors of the mining sector, as well as female workers of the industry, alone or in trade-unions, together with their fellow male miners.

For instance, the International Women In Mining association (IWIM) is a global organisation committed to advancing women in the mining sector. Founded in 2007 in UK, it is growing network for women in the mining industry, with more than 40 national Women In Mining (WIM) members and having focal persons across 100 countries. With IWIM, the voiceless women of the mining industry across the world have got a channel to communicate their challenges and find responses (IWIM2, 2020). Continentally, the Association of Women In Mining in Africa (AWIMA) was created in 2015 in Nairobi, Kenya during the African Women Business Linkages Forum organised by the African Union Commission. This network of associations from the Southern, Central, Western, Eastern and Northern regions of Africa advocates for the participation, representation, leadership and inclusive empowerment of women in the extractive sector in Africa (AWIMA, 2020). Locally, there is the Rwandan Women In/And Mining Organization (WIAMO), which got created in 2014 to assure gender maintreaming in mining and mitigate negative effects of mining on women and other vulnerable people (Carleton University & al, 2020).

Besides these examples of WIM organizations in there different territorial capacities, reports prove that internal organization of women working in different companies, contribute a lot to the protection, attraction and retention of women in the same companies. They do self-advocacy to occupy leadership positions in the companies, to fight, report and therefore contain Sexual GBV (SGBV) cases, to be given facilities specific to women, including PPEs, change rooms, bathrooms, child care rooms. Above all, internal women's associations help them to fight for their labour rights including the maternity leave, breastfeeding hours, and alternative placements during pregnancies, and other rights. They go further through creating saving groups to improve on their socio-economic conditions at work and in their families, and inspire their leaders to prepare gendered Corporate Social Responsibility (CSR) projects (IMPACT, 2020).

While internal associations of women in mining companies help to tackle internal matters, external issues are dealt with by CSOs in terms of WIM associations and their stakeholders. Among other contributions they bring to the struggle to assure gender mainstreaming in mining, there is the raising of the community's awareness on the life of female mine workers.

2.5.5 Community's awareness raising

As discussed before, historically, women stayed at home and looked after families, but that all changed since women's rights became a priority. Even for those women who managed to join the industry, social responsibility remains a big challenge for women because the majority of women in mining are single mothers, and often these women have limited schooling. It is however reported that women working underground potentially earn up to two-thirds more money in wages than compared had they been employed as maids in households or as farm workers, which started pushing fellow women to stop resisting to change and enter the mining industry.

According to the same history, the community surrounding mine sites, has been believing that mining and hard manual labour must always be associated with masculinity, because of the physiological issues to be taken into consideration. For instance, the community knows that women are not physically identical to men; specifically for mining, and the differences in physiological make-up must be accommodated. On this basis of deeply embedded practices the industry will therefore be very reluctant to change certain practices with specific reference to the female employment in this historical male-dominant arena of the mining industry. Some researchers described the phenomenon of stereotype male beliefs, indicating that women do not pass the mental and physical endurance to perform the inherent job requirements of underground work because women are too weak and thus promulgate legislation to exclude women from the underground workings (Dräger, 2020).

All these wrong beliefs, including myths that women play the curse role to the minerals production while in their menstrual period, have to be forgotten, especially in Latin American and African countries, where more ASM with uncivilized communities are still available. Awareness raising campaigns, success stories telling, study tour in mines, the recruitment of their female relatives, and other similar strategies, contributed to the change of community beliefs and enabled the increment of women's participation in mining. These strategies included other direct involvements of community members in the mining, through Community Development Agreements (CDAs) signed with mining companies with support from the Government and CSOs. Again, CSR projects changed lives of communities surrounding mines, and therefore their members, women included, got convinced about learning a lot about mining, through fully joining the sector (Ian, 2012).

In sum, the conjugation of efforts by a sensitized community, law and policy makers, mining companies, female mine workers and their associations; have proved that there is possibility to boost the participation of women in mining.

2.6 Conclusion of chapter two

Chapter 2 reviewed the existing documentations on factors hindering women's participation in mining. It also reviewed the literature on mechanism to contain the dame factors. Both factors and mechanisms are assessed with the study's case study – COMIKAGI in chapter 4 and 5.

In terms of factors, the review of the literature revealed that common factors that lead to the poor women's representation in mining, they include historical male-dominance and discrimination, cultural norms and misconceptions, pregnancies, births, breastfeeding and child care, other responsibilities in families and households, skills gaps, unfavourable physical environment, Gender Based Violence, lack of the political will, absence of business cases for gender equality in mining and the weak women's movement for gender equality in mining, on one side.

On the other side, the literature review helped to learn about existing general mechanisms for the elimination of the same factors, in terms of friendly legal and policy framework, recruitment and retention strategies, formal education and capacity building, women's associations, community's awareness raising and workplace women's rights protection. The same mechanisms are effective when all role players use their powers and commitment to fight for women's rights in mining, including attracting them to stay in the mining industry. They include law and policy makers and regulators, mining companies, as female mine workers and their associations, as well as their stakeholders, public or private.

CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction

In this chapter, the study on factors hindering women's participation in mining present used tools and techniques to determine the case study, to have the sample, collect data, treat and present them in next chapters. The chapter includes the chosen research design, its population as per the case study, sample and sampling technique, techniques for data collection, techniques for data treatment, data validity and reliability, as well as ethical considerations.

3.1 Research approach

As an overall strategy to integrate the different components of the study in a coherent and logical way, in a way ensuring the effective addressing of the research problem, and in a manner that enables the study to obtain the relevant information (Kassu, 2020); the present study chose a descriptive research design to learn about factors that hamper the women's participation in mining and how they can be contained.

Assessing factors hindering women's participation in mining, with COMIKAGI as a case study, also inspired the researcher to conduct the research while considering both the quantitative and qualitative approaches. The qualitative research has enabled the researcher to identify the same factors, whereas the qualitative research helped to acquire statistical information on how the mining industry is impacted by the same factors, and what can be done to contain them.

Data were collected by use of questionnaire and semi-structured interviews and treated in a both quantitative and qualitative manner, by figures and tables, their analysis and by presentation and assessment of narrative responses from the study informants' interviews. This helped to cross-check information provided by mine-workers with expertise of local leaders, decision-makers and policy implementers.

3.2 Population of the study

The researcher has chosen to assess factors hindering women's participation in mining with support from the Cooperative Minière Kababara – Gikingo (COMIKAGI), located in the Northern Province, Gakenke District, Ruli Sector. This sector has so many mining corporations including EPROCOMI, Ruli Mining, MM Gekenke Mining Company, SPEAK Ltd and many other small scale mining companies. COMIKAGI is also located in the same direction with Gifurwe mines which is also a historical mining concession of the northern region, but which used to belong to the Government, in a remote area without close neighbouring communities.

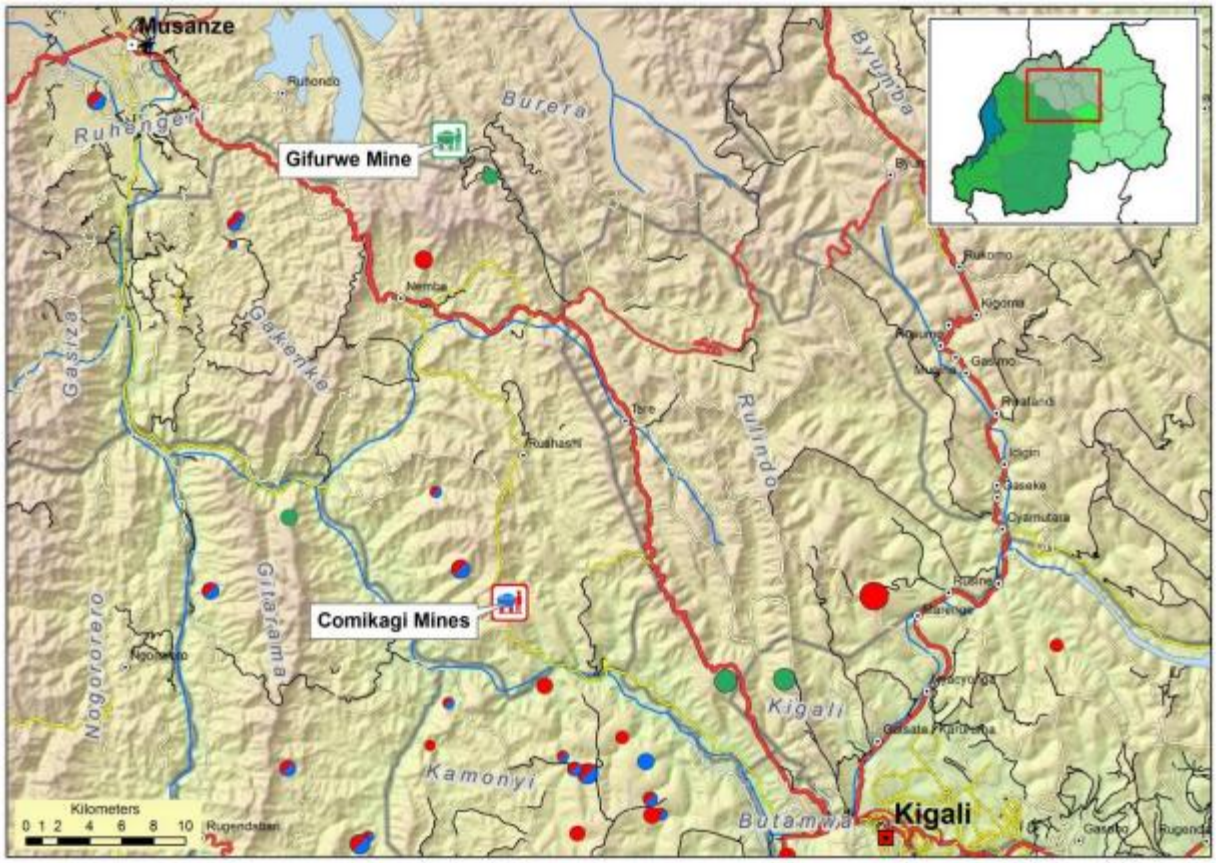
Most importantly, COMIKAGI was targeted as the study population due to its location and the history of mining in Ruli area, Gakenke District. Ruli sector and its surroundings is known to accommodate many miners to the extent that more than a half of the population work in mines as confirmed by local leaders. Moreover, all mining companies and cooperatives, COMIKAGI included, operating in the area, exploit small scale mine sites with less mining technologies. This said, any member of the community with required age and health conditions may work in the mines. Contrarily to historical mining concessions which used to belong to the Government, with more advanced mining tools and technologies, and which are likely to limit members of communities to be their employees, as the same tools and technologies require formal skills which are likely missing in the same community members.

Before the publication of the new 2018 mining law, Nsanzimana, B. et al (2020) embarked on searching on efforts and obstacles within the promotion of gender equality in the Rwandan mining sector, in form of a journal article, not a dissertation, but their case study targeted areas with less mining activities compared to other economic activities. The study was conducted in Kamonyi district of Southern Province and Burera District of the Northern Province. The study found that in such areas, women do not join the mining sector as men due to the poor enforcement of laws and policies on gender and mining, women's skills gaps, the women's triple burden, gender norms and taboos and the stronger gender division of labour, where women occupy the least remunerated jobs.

This study was also not limited to gender equality, but was rather considering other issues like the tantalum, tin and tungsten minerals (3Ts) related socio-economic aspects (Nsanzimana & Nkundibiza, 2020).

With the current study, the researcher targeted an area where mining dominates other economic activities, to see factors hindering women's participation in mining, factors specific to such areas, where some obstacles like gender norms and taboos would be rare, because women of the area grew up in a mining environment, where there should be possibilities to be familiar with mining activities at younger age. This study was also conducted within the time when the new mining act which compels mine operators to employ women is being implemented, which helps to learn about cases of resistance to the law and its interpretation and implementation.

Figure 1: COMIKAGI geographical location



Source: Fieldwork data, 2020

The above figure shows that COMIKAGI is located in the Northern Province, having Kamonyi District as its neighbouring district in the Southern Province, and Ngororero in the West. There is Rulindo in East and Musanze in North. COMOKAGI is located near Nyabarongo River.

COMIKAGI was chosen as a case study because it is located in Ruli sector where the first economic activity is mining, and more than 50% of its population work and live on mining earnings. This said, while selecting COMIKAGI, it was believed that the Ruli community should have made steps in ignoring cultural norms and, and have success stories to say about that, and do not harm women's decisions to participate in the mining workforce. COMIKAGI was also chosen because it is the largest and most productive ASM cooperative in the country and is an example of the economic significance of reasonably well-organized artisanal production of tin and tantalum (Maria & al., 2018).

Table No 1: COMIKAGI's total workforce

Cooperative	Permanent male employees	Permanent female employees	Total Permanent Employees	Male casual workers	Female Casual workers	Total Casual Workers	Grand total		
							Female	Male	Total
COMIKAGI	20	4	24	431	83	514	87	451	538
Percentage	83.33%	16.67%	100%	83.85%	16.15%	100%	16.17%	83.83%	100%

Source: Fieldwork data, 2020

Table one shows that COMIKAGI employs 538 employees in total, of whom 87 are women, representing 16.17% of the workforce, whereas men are 451 representing 83.83% of the cooperative's workforce. As information on factors hindering women's participation in COMIKAGI could be provided by any worker, the study envisaged to have all workers as its population, from which a sample was selected, to inform the study.

3.3 Sampling techniques and sample size

As it was not practically possible to meet all 538 employees to provide the researcher with information, as it is also a research rule to choose from the population, a number of informants whose ideas represent the ones of the whole population; a sample was selected from the whole targeted population.

The study used the Slovin formula to select respondents, with a desired degree of accuracy (Romer, 2020). According to the latter, the formula is as follows:

$$n = \frac{N}{(1+N(e)2}$$

n=Sample size

N= Total population

e= level of confidence degree (0.1)

According to the above formula, the following is the sample size:

$$n = \frac{538}{(1+538\ (0.1)2}$$

$$n = \frac{538}{539\ x0.01}$$

$$n = \frac{538}{5.39} = 99.8 \approx 100 \text{ (Sample size)}$$

Note however that purposively, the study collected data from 50 men and 50 women in COMIKAGI, though they do not represent the same percentage in the total workforce. This was due to the fact the researcher wanted to get more witnesses from women themselves. With a structured interview, the researcher also purposively collected data from the representative of the National Women Council (NWC/CNF) in Gikingo Cell, the Social affairs officer in Ruli Sector and the Gender Officer from the District to learn about how the community representatives and local leaders view women in mining in COMIKAGI and factors hindering their effective participation in the workforce. The representative the COMIKAGI's senior management also contributed in the same endeavours. All informants also provided information about the mechanisms ahead and possible other solutions for a remarkable participation of women in the mining workforce.

Table No 2: Selected informants of the study

S/N	Informants	Numbers	Sampling technique
1	Female mine workers	50	Slovin formula and purposive sampling
2	Male mine workers	50	Slovin formula and purposive sampling
3	CNF / Gikingo Cell	1	Purposive sampling
4	Ruli Social affairs officer	1	Purposive sampling
5	Gender Officer / District	1	Purposive sampling
6	COMIKAGI Senior Management	1	Purposive sampling

Source: Fieldwork data, 2020

The study also used the random sampling as a selection technique in which sample members are selected by chance, but with a known probability of selection (Paul, 2020). With ransom sampling, the 50 male mine workers responded to questions in the study questionnaire without targeting any specific male worker, as all men in COMIKAGI were qualifying to provide needed information. However, for female mine workers, the researcher purposively made sure that all departments are represented: diggers, inside-tunnels' ore transporters, transporters of the ore from tunnels to the sluicing places, female site managers, and women working with administration. For all departments, the researcher randomly interviewed available women, but for women working with administration, as they are the ones in the best position to know the life of women in the cooperative at decision-making level, they were purposively all interviewed: the security officer, the accountant, the logistics officer, the processing and production officer and the mine site manager.

3.4 Techniques for data collection

The study used the questionnaire and semi-structured interviews to collect data.

3.4.1 Questionnaire

The questionnaire is a set of printed or written questions with a choice of answers, devised for the purposes of a survey of statistical study. It remains the main instrument for collecting data in a survey research. Its questions are standardized and benchmarked for the collection of individual data in a systematic manner (Paul, 2020). This study therefore, also used the questionnaire where each information provided by one respondent, one by one, not collectively, was recorded.

In order to align it with the nature of the study, the questionnaire was drafted in a fully functional and up to standard way with questions easy for the respondents to provide the necessary answers and information so as to make it easy for the researcher to record the data. The questions had the most accurate and complete information and did not include jargons, acronyms, and other terminologies which are unfamiliar in to the respondents and in the mining sector. The researcher met each and every respondent and read and explained the questions for respondents to feel free to provide their accurate answers (Yakubu, 2020). This was also because the questionnaire was in English, for it not to lose the contextual meaning and objectives of the dissertation which is reported in English.

The questionnaire was developed while considering the objectives of the study and information to be collected. There was a questionnaire for female workers of COMIKAGI and another questionnaire for their fellow male workers. The questionnaire was made of both close and open questions, as the research approach was designed in a quantitative and qualitative manner. Close questions enabled the researcher to get direct positions of the respondents about different questions about factors hindering women's partition in mining and what can be done to overcome the same factors. Open questions were in form of additional questions for respondents to provide additional information to direct answers given by form of choosing among suggested items of the close questions of the questionnaire.

3.4.2 Semi-structured interviews and interview guides

Known as "a qualitative data collection strategy in which the researcher asks informants a series of predetermined but open-ended questions" (Lisa, 2020), he semi-structured interviews were conducted by use of interview guides. The latter served to record information from experts and knowledgeable informants vis-à-vis the content scope of a study. They are semi-structured interviews because the interviewees did not only answered to the pre-prepared questions because as the interviews were going on, new questions were flowing in and informants were free to take the researcher through details relating to the study objectives (Cormac & Per J., 2019). In the present study, these were local government officials who deal with gender and social welfare issues of the citizens, gender included, as well as the representative of the COMIKAGI's senior management.

The interview guides were developed with specific open questions addressed to interviewees, in order to get the information needed by the study. There were separate interview guides for the CNF (Gikingo Cell), social affairs (Ruli Sector), gender office (Gakenke District level), and the COMIKAGI's senior management representatives. These questions were open for interviewees to feel free to provide information about factors hindering women's participation in the mining workforce, existing mechanisms to increase that participation, and their plans for the effective inclusion of women in mining.

Information collected through the questionnaire and interview guides was treated in order to find results of the study, by use of different techniques.

3.5 Techniques for data treatment

Data collected on field were presented and analysed using tables and chats, as well as narrated texts in both a quantitative and qualitative manner to match with the study design. Tables and chats presented figures in terms of statistics reflecting positions of respondents on different questions responded to by use of the questionnaire, on one side.

On the other side, statistical information was completed by responses given qualitatively where respondents and interviewees freely expressed their opinions on asked questions. In some cases, their answers were directly presented by way of quoting them, and in some others, there were paraphrased without going beyond respondents' and interviewees' narrations.

3.6 Data validity and reliability

Data of the study were collected with needed caution in order to enable the researcher to reach the objectives of the study. In spite of the Covid19 pandemic which delayed the field data collection, the researcher did not use any enumerator to represent her. She has rather dedicated enough time and financial means to meet each and every respondent in June and July 2020. Before using the final questionnaire, a pre-data collection session in terms of simulation was done to assure the validity of the questionnaire and make needed improvements before final phases of data collection.

3.7 Ethical considerations

Within this study, research rules were complied with. For instance, the researcher referenced all authors for their used pieces of works. Moreover, the identity of respondents was kept confidential. Furthermore, during data collection, respondents were reminded about their privacy protection and right to choose between either answering to the study questions, or not, or all of them or some of the questions. The researcher invested all efforts not to harm respondents' rights and freedoms.

3.8 Limitations

During the whole journey towards the finalization of the present study, the researcher met different challenges relating the nature of the work itself, reluctance of respondents to provide needed information, time and financial constraints, as well as the Covid19 pandemic.

The preliminary issue was that there are no sufficient publications on women in mining, which was a challenge to the review of existing literature on women in mining. To overcome this, the researcher also included documentations found on different websites talking about women in mining across the world, including websites of organizations promoting gender equality in mining.

For the Covid19 outbreak, this came when the time for data collection was approaching. It paralysed the supply chain of minerals across the world as flights had been cancelled and factories in developed countries where minerals are sold had suspended their works. Consequently, after lockdown mechanisms, employees delayed to resume their services in time, which in turn delayed the collection of data from the field. The researcher was therefore forced to wait for mine workers to resume their services.

Note that the Covid19 brought in a new challenge as respondents wanted to provide information limited to the situation during and after the pandemic. This revealed further information on how women are treated during hardships compared to men, though the researcher guided informants on the information which was normally looked for, in terms of the participation of women in the mining workforce during the normality of the mining businesses.

Mining activities are basically carried out in rural areas, the reason why the researcher opted for Gakenke District, Ruli Sector, as the geographical scope of the study, specifically in COMIKAGI.

As the researcher resides in Kigali City, it required financial means to travel several times on field to meet the study informants.

CHAPTER FOUR
DATA PRESENTATION AND ANALYSIS

4.0 Introduction

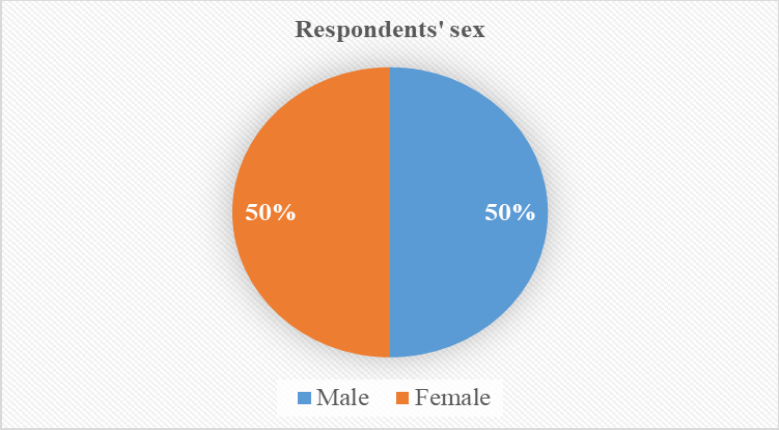
Chapter 4 of the study presents and analyses collected data. It starts by presenting the identification of respondents, before venturing into factors hindering women's participation in the mining workforce in COMIKAGI, efforts within the elimination of factors hindering women's participation in the mining workforce in COMIKAGI, challenges within the elimination of factors hindering women's participation in the mining workforce in COMIKAGI and mechanisms for the increment of women's participation in mining workforce in COMIKAGI. The chapter also discusses results of the study.

4.1 Identification of respondents

Respondents were identified by their sex, age, education, skills in mining, occupied post and experience in mining activities before and after joining COMIKAGI.

4.1.1 Sex of respondents

Figure 2: Sex of respondents



Source: Fieldwork data, 2020

As figure 2 shows it, the study sampled 50 women (50%) and 50 men (50%) so that results can be balanced, while the gender of respondents is considered, so that both women and men equally provide information about factors hindering women's participation in the mining workforce, and measures that can be taken to improve on the same participation.

4.1.2 Age of respondents

Table No 3: Age of respondents

S/N	Category of age	Frequency	Percentage
1	Below 18 years	0	0%
2	18 – 30 years	51	51%
3	31 – 40 years	37	37%
4	41 – 55 years	12	12%
5	56 – 65 years	0	0%
6	Beyond 65 years	0	0%
Total		100	100%

Source: Fieldwork data, 2020

Table No 3 above shows the distribution of respondents by their age, whereby 51 of 100 have an age ranging between 18 and 30 years, representing 51% of respondents, on one side. On the other side, 37% have an age ranging between 31 and 40 years, 12% being between 41 and 55 years old. Among respondents of the study, none was found to be below 18 years of age. There is also none having beyond 56 years of age. This shows that there is no child labour in COMIKAGI and that mining activities are mostly performed by young people, as 51% of the workforce belong to the category of youth, i.e. 18 and 30 years. Table No 3 also shows that the study considered views of all the categories of age of frequent mine workers, that is, between 18 and 55 years of age.

4.1.3 Respondents' level of education

Table No 4: Respondents' level of education

S/N	Level of education	Frequency	Percentage
1	Primary school (completed or not)	68	68%
2	Secondary School (completed or not)	11	11%
3	University or any other higher education (completed or not)	3	3%
4	Technical / vocational training schools (completed or not)	1	1%
5	No schooling	17	17%
Total		100	100%

Source: Fieldwork data, 2020

Table No 4 shows the distribution of respondents by level of education, whereby 68% of respondents have completed or not the primary education, whereas 17% declared having no formal education. Secondary school education represent 11% against 3% for the University and 1% for technical or vocational training schools. With table No 4, it is evident that the majority of mine workers did only primary studies. This is associated by the fact COMIKAGI remains an artisanal and small scale mining (ASM) cooperative whereby needed skills do not require formal high level education. Numbers of workers who did secondary and university education are the ones occupying leadership and administration positions. Table No 14 also shows that there are some mine workers who did not receive any education, even the primary schooling, which also cannot prevent them from working in the mines, because ASM does not require formally acquired mining schools for all the levels and departments of the mining corporations.

4.1.4 Respondents' mining related skills and their origin

Table No 5: Respondents' mining related skills and their origin

S/N	Mining skills and their acquisition	Frequency	Percentage
1	Mining related skills acquired via formal education	2	2%
2	Mining related skills acquired on-job	37	37%
3	Mining related skills acquired via out-of-job trainings	0	0%
4	No mining related skills	61	61%
Total		100	100%

Source: Fieldwork data, 2020

As table No 5 shows it, the majority of mine workers at COMIKAGI, that is 61%, do not have mining related skills. Another higher number is 37 of 100 respondents who acquired their skills on job, whereas only 2 acquired mining skills through formal education. None of respondents benefited from an out-of-job training. The dominance of non-skilled mine workers is justified by the fact in ASM mine sites, there are some activities which do not require skills, like the transportation of the ore, before sand washing, which also justifies the reason why women without formal education in mining can also join the mining workforce as their brothers can do. Table No 5 also shows that ASM mining skills can be acquired on job. While having interviews with the cooperative's representatives, they revealed that the mining regulator (RMB) recommended mining corporations to hire some staff with formal education in mining, which justifies the 2% of respondents with mining related skills acquired via formal education.

4.1.5 Respondents' occupied posts in COMIKAGI

Table No 6: Respondents' occupied posts in COMIKAGI

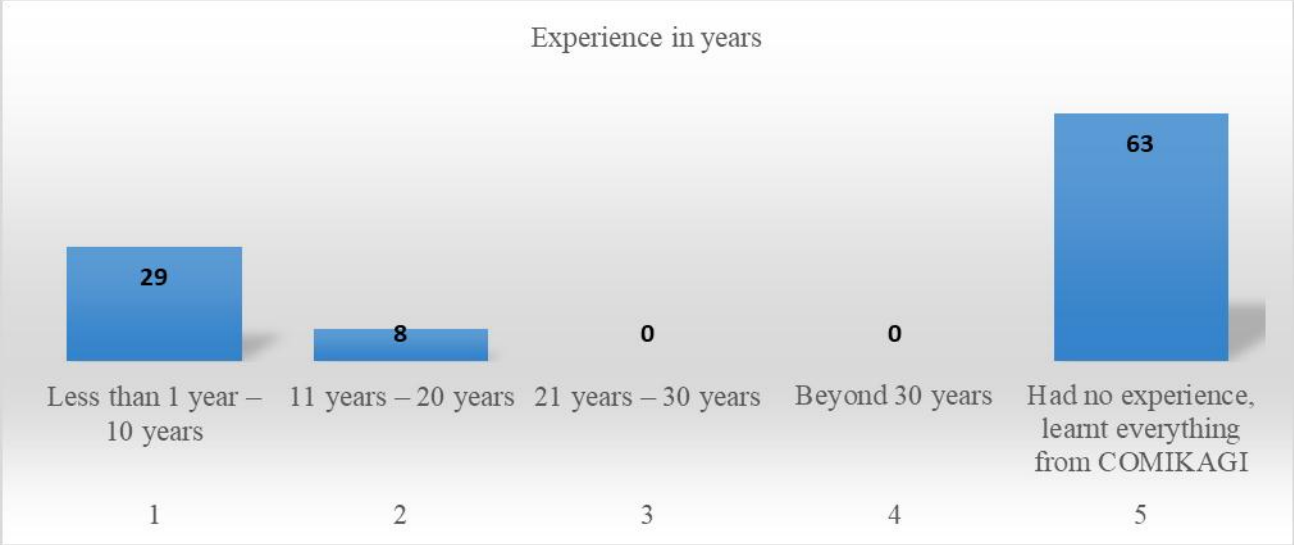
S/N	Occupied posts	Frequency				Total	%
		Male	Percentage	Female	Percentage		
1	Managerial position	1	1%	0	0%	1	1%
2	Ordinary administration position	2	2%	4	4%	6	6%
3	Digging	14	14%	0	0%	14	14%
4	Sluicing	6	6%	4	4%	10	10%
5	Transport of the ore	12	12%	40	40%	52	52%
6	Processing	6	6%	1	1%	7	7%
7	Security	7	7%	1	1%	8	8%
8	Any other type of work	2	2%	0	0%	2	2%
Total		50	50%	50	50%	100	100%

Source: Fieldwork data, 2020

Table No 6 shows the respondents' coloration of occupied posts and their sex. The most occupied post of the study respondents is the transportation of the ore whereby among 52% of respondents, 40 are women and 12 are men. The digging post is occupied by 14% of the study respondents, who are all men workers. The sluicing which is the washing of the ore to find minerals is occupied by 10% of respondents, of whom 6 are men, against 4 women. Among 8% of security guards, 7 are men against 1 woman. For other minerals processing works which include the winnowing, grinding, roasting, and drying of minerals, among 7% respondents, 6 are men and 1 is a woman. In ordinary administration position like logistics and production management, accountancy, human resources, marketing and sales; among 6 of 100 respondents, 2 are men and 4 are women. Only 1 men respondent belongs to the managerial post, whereas 2 respondents who are appear in the last category of "any other type of work" are men who were found to do timbering activities to protect mine shafts or tunnels from collapsing. Information from table No 6 corresponds to what the cooperative's management declared to the research in interview, that there are no women in the cooperative's executive management, in digging activities and in tunnels timbering. The most needed workers at the mine are ore transporters. In any case, table No 6 shows that the study got data from all layers of mine workers, whereby all departments are represented; which also means that the study got balanced information as far as occupied posts are concerned.

4.1.6 Respondents' experience in mining activities before joining COMIKAGI

Figure 3: Respondents' experience in mining activities before joining COMIKAGI



Source: Fieldwork data, 2020

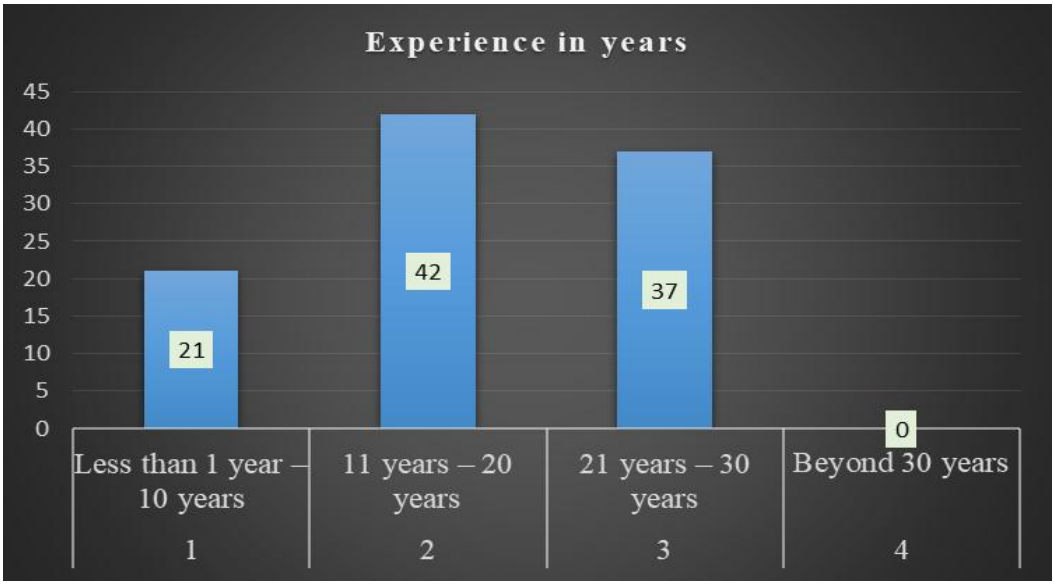
Figure 3 shows the respondents' experience in mining activities before joining COMIKAGI. As it can be seen 63% of respondents had no experience before joining the cooperative, which means that they learnt everything from COMIKAGI. This proves that even women without mining skills can join the industry and learn everything from the ASM cooperative.

As revealed during interviews, other mine workers including 29% who acquired between less than 1 year and 10 years' experience before joining COMIKAGI; they acquired mining skills from mining companies surrounding COMIKAGI in the Ruli Sector of Gakenke District, as well as mining companies of neighbouring districts in terms of Muhanga and Kamonyi, in Southern Province.

Note that no mine worker declared having acquired between 21 years and beyond, before joining COMIKAGI, which justifies the retention approach or retirement for mine workers with longer experience in a given mining corporations.

4.1.7 Respondents' experience in mining activities after joining COMIKAGI

Figure 4: Respondents' experience in mining activities after joining COMIKAGI



Source: Fieldwork data, 2020.

According to figure 4 above, 42 out of 100 respondents have an experience in COMIKAGI ranging between 11 and 20 years, on one side. On the other side, 37% have an experience of 21 up to 30 years, whereas 21 out 100 respondents have an experience of less than 1 year up to 10 years. Note that no one was found to have an experience beyond 30 years. In interview with the management, it was revealed that members of COMIKAGI as a cooperative are the ones with such long-term experience as some of them had worked in mines for so long. In any case, the above figure shows that the majority of respondents have more than 11 years of experience in COMIKAGI, which means that the study respondents are in the position to provide needed information about factors hindering women's participation in the mining workforce, based on their experience in the cooperative's workforce.

However, the fact that workers with less experience are represented by a lower number, i.e. 21%, compared to others, except for the case of workers with 30 years' experience who are not represented; it is an evidence that it might be hard for new recruits to join the mining workforce, as workers with less experience represent the lower number of the actual total workforce.

4.2 Factors hindering women's participation in the COMIKAGI's mining workforce

As chapter 2 of this study revealed it, common factors hindering women's participation in the mining workforce include historical male-dominance and discrimination, the cultural norms and misconceptions, pregnancies, births, breastfeeding and child care, other responsibilities in families and households, skills gaps, unfavourable physical environment, GBV, absence of business cases for gender equality in mining and weak women's movement for gender equality in mining. The present section shows that some of these factors are also found in COMIKAGI, whereas some others are not found there.

4.2.1 About factors relating to the male-dominance, cultural norms, misconceptions and misinformation

Table No 7: About factors relating to the male-dominance, cultural norms, misconceptions and misinformation

S/N	Statements	Respondents' positions[1]					Total
	The male-dominance, cultural norms, misconceptions and misinformation, hinder women's participation in mining workforce;	-2	-1	0	1	2	
1	Because women delayed to join the mining workforce	0	0	0	47	53	100
2	Because women of this area believe that mining is for men	83	17	0	0	0	100
3	Because women fear that the society shall laugh at them, as mining is in this area considered as a men's job	83	17	0	0	0	100
4	Because it is believed that the presence of women curses on the production in general	83	17	0	0	0	100
5	Because it is believed that the presence of women curses on the production, especially during menstrual period	83	17	0	0	0	100
6	Because women fear to be sexually abused	62	27	11	0	0	100
7	Because women make men lazy when they work together in the mines	83	17	0	0	0	100
8	Any other related reason	0	0	100	0	0	100

Source: Fieldwork data, 2020

Table No 7 of this study shares views of respondents on factors that are likely to hinder women's participation in COMIKAGI's workforce, factors relating to the male-dominance, cultural norms, misconceptions and misinformation. As it can be seen, respondents generally refute these factors.

[1] NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree

For instance, all respondents (100%, that is 83 who strongly disagree and 17 who disagree) do not accept that the poor representation of women in mining is due to the belief that mining is for men, the fear that the society shall laugh at women, the belief that the presence of women curses on the production in general and especially when they are in their menstrual period, and the spoiling of activities where women would make men lazy while working together. Again, the majority of respondents, that is, 62 who strongly disagree and 27 who disagree, totalizing 89%, with an exception of 11 out of 100 respondents who chose to be neutral; do not accept that the poor women's representation is due to the fear for women to be sexually abused in mining.

However, all respondents, with 47 out of 100 who agree and 53 who strongly agree, accept that there is poor women's participation in mining workforce, because women delayed to join the mining workforce. In interview with different informants, it was revealed that in Ruli Sector, where COMIKAGI is located, few of the reasons that justify the male-dominance of the mining workforce, is because women delayed to join the industry. For them, they believe that it is a matter of time, for women to have a great representation in mining, though there are still some reasonable factors to work on, to assure the effective women's integration in mining, as discussed in the developments ahead.

4.2.2 Factors relating to the capacity and skills to perform mining activities

Table No 8: Factors relating to the capacity and skills to perform mining activities

S/N	Statements	Respondents' positions[2]					Total
	The capacity and skills to perform mining activities, hinder women's participation in mining workforce;	**-2**	**-1**	**0**	**1**	**2**	
1	Because women have no required energy to perform mining activities	83	17	0	0	0	100
2	Because women have no mining related skills compared to men's skills	62	27	11	0	0	100
3	Any other related reason	0	0	100	0	0	100

Source: Fieldwork data, 2020.

Table No 8 shows that while answering to the question about factors relating to the capacity and skills to perform mining activities, respondents rejected the idea according to which there is poor women's participation in mining workforce, because women have no mining related skills compared

[2] NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree

to men's skills, whereby 83 of 100 respondents, representing 83%, strongly disagreed and 17% disagreed with the statement. Similarly, apart from 11 respondents among 100 who chose to remain neutral; all other respondents rejected the idea according to which the poor representation of women in mining is due to the lack of mining skills, with 62% who strongly disagreed and 27% who disagreed.

Additional and supporting information from interviews confirmed that mining activities do not require exceptional energy that women do not possess. As women can perform other energy requiring jobs like agriculture, it is the same way they can perform mining activities. For the issue of skills, as COMIKAGI is an ASM, respondents and interviews believe once more women are welcomed in the mining workforce, there is no skills related barrier. However, as long as the Government wishes that mining corporations shift from ASM to semi-industrialized mining and later to full industrialization of the mining industry; women need to prepare and acquire skills that shall enable them to have a place in the mining workforce, in future.

4.2.3 Factors relating to the women's anatomy, physiology and family responsibilities

Table No 9: Factors relating to the women's anatomy, physiology and family responsibilities

S/N	Statements	Respondents' positions[3]					Total
	The women's anatomy, physiology and family responsibilities, hinder women's participation in mining workforce;	**-2**	**-1**	**0**	**1**	**2**	
1	Because it is prohibited for pregnant women to work in mines	0	0	15	23	62	100
2	Because husbands do not like to see their wives work in mine	1	17	11	42	29	100
3	Because there are no child care places for breastfeeding women	1	17	12	43	27	100
4	Because mining cannot allow women to perform home activities	30	33	2	18	17	100
5	Because husbands cannot work together with their wives in mines	45	55	0	0	0	100
6	Because women who have young children cannot bring them in mines, and there are no house maid who can care for the children	0	0	29	58	13	100
7	Because there are no alternative placements for pregnant and breastfeeding women	0	0	29	57	14	100
8	Any other related reason	0	0	100	0	0	100

Source: Fieldwork data, 2020.

[3] NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree

As table No 9 shows it, respondents have diverging ideas on factors relating to pregnancies, births, breastfeeding and child care and other families and households related responsibilities, vis-à-vis the poor representation of women in mining workforce. For instance, respondents do not accept the male-dominance in mining is due to the fact that mining cannot allow women to perform home activities, as 30 out of 100 respondents strongly disagreed and 33 disagreed with that statement. Whereas 2 remained neutral, 18 of 100 respondents agreed and 17 strongly disagreed. This means that 63 of respondents view that mining is not an obstacle to women to perform home activities. In the same angle, all 100 respondents including 45 who strongly disagreed and 55 who disagreed; do not believe the poor representation of women in mining is due to the fact that husbands cannot work together with their wives in mines. In an interview with informants, it was revealed that there are even some male mine workers who work in the mines together with their wives.

Within the same factors relating to pregnancies, births, breastfeeding and child care and other families and households related responsibilities; respondents accept that some of them can prevent women from belonging to the mining workforce. For instance, except for 15 out of 100 respondents who chose to be neutral, 23 agreed and 62 strongly agreed with the statement according to which there is poor representation of women in mining because it is prohibited for pregnant women to work in mines. In an interview with the senior management of COMIKAGI, the cooperative revealed that on one side, only pregnant women working in administration are allowed to keep working, whereas on the other side, pregnant women cannot enter tunnels or perform field works in mine sites, because it can endanger their pregnancies.

Similarly, even though 1 of 100 respondents strongly disagreed, 17 disagreed and 11 remained neutral; the majority of respondents, that is 42% who agreed and 29% who strongly agreed, believe that women are less represented in mining, because husbands do not like to see their wives work in mine. Interviews conducted with different informants revealed that some women, after getting married, they leave the mining workforce for other economic activities, not because their husbands do not want them to work in mining as such, but rather because there are no alternatives and facilities for pregnant and breastfeeding women. The same interviews revealed that when children grow up, the mothers resume back their mining activities. However, for single mothers who believe that mining is the only activity that can generate much more money, as they do not have husbands

who can contribute to their households' expenses, they choose to re-join mining, even in case they still have toddlers whom they leave with their neighbours or with the toddlers' grand-parents.

Moreover, table No 9 shows the majority of respondents co-agree upon pregnancy and childcare related factors that hinder women's participation in mining. For instance, 43% agree and 27% strongly agree that the poor participation is due the fact that there are no child care places for breastfeeding women. In the same framework, 58% agree and 13% strongly agree that the poor participation results from the fact that women who have young children cannot bring them in mines, and there are no house maid who can care for the children. The lack of alternative placements for pregnant and breastfeeding women was also viewed as a factor hindering women's great integration in mining, as this statement was agreed with by 57 respondents of the total 100 sample, and 14% strongly agreed with the same statement.

In sum, though Ruli Sector's women are eager to work in mining, including the COMIKAGI's workforce, they still face hindering factors relating to pregnancies, births, breastfeeding and child care and other families and households related responsibilities.

4.2.4 Factors relating to unfavourable physical environment and facilities specific for women

Table No 10: Factors relating to unfavourable physical environment and facilities specific for women

S/N	Statements	Respondents' positions[4]					Tot.
	Unfavourable physical environment and facilities specific for women, hinder women's participation in mining workforce;	**-2**	**-1**	**0**	**1**	**2**	
1	Because only men are physically fit for the terrain and mine shafts	87	13	0	0	0	100
2	Because there are no separate bathrooms for men and women	32	40	28	0	0	100
3	Because there are no separate washrooms for men and women	33	39	28	0	0	100
4	Because there are no separate change rooms for men and women	32	41	27	0	0	100
5	Because husbands cannot work together with their wives in mines	87	13	0	0	0	100
6	Because there are no PPEs specific for women	87	13	0	0	0	100
7	Any other related reason	0	0	100	0	0	100

Source: Fieldwork data, 2020.

[4] NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree

Table No 10 presents data on factors relating to unfavourable physical environment and facilities specific for women, vis-à-vis the poor representation of women in the mining workforce. All 100% of respondents, including 87 who strongly disagreed and 13 who agreed, rejected the idea according to which there is poor women's participation in mining workforce, because only men are physically fit for the terrain and mine shafts. In other words, all respondents share the same view that both men and women are physically fit to perform mining activities. All respondents also refuted the idea according to which the poor women's participation is due to the fact husbands cannot work together with their wives in mines and the fact that there are no PPEs specific for women, with 87 out of 100 respondents who strongly disagreed and 13% who disagreed with those statements.

Furthermore, the majority of respondents, with 32% who strongly disagreed and 40% who disagreed, do accept that the weak representation of women is a result of lack of separate bathrooms for men and women. Similarly, 33% strongly disagreed and 39% disagreed with the statement according to which it is due the lack of separate washrooms for men and women. In a quite similar manner, 32% respondents strongly disagreed and 41 disagreed that the weak representation results from the lack of separate change rooms for men and women.

Even though interviews revealed that separate bathrooms and change rooms can only be found at COMIKAGI's headquarters, whereas mine sites have only separate washrooms; the eagerness of women to work in mining makes them disregard the place of bath and change rooms at mine sites. Though it is good to have them, it is not a problem for Ruli's women to work in mines.

4.2.5 Factors relating to GBV and lack of internal women's associations

Table No 11: Factors relating to GBV and lack of internal women's associations

S/N	Statements	Respondents' positions[5]					Total
	GBV and lack of internal women's associations, hinder women's participation in mining workforce;	-2	-1	0	1	2	
1	Because sex is used as a condition to be hired and stay at work	86	9	5	0	0	100
2	Because women are sexually harassed by their leaders in case they refuse to have sex with them	85	9	6	0	0	100
3	Because women are victim of sexual abuses by fellow mine workers, including rape, public sexual indecency on women, etc.	84	10	6	0	0	100
4	Because female mine-workers, victim of GBV, remain quiet, because there is no channel to communicate GBV cases	86	9	5	0	0	100
5	Because women have no internal associations to protect their rights	8	10	30	33	19	100
6	Because there are no saving groups to help women having access to finance for different economic purposes, compared to other sectors	8	10	31	32	19	100
7	Any other related reason	0	0	100	0	0	100

Source: Fieldwork data, 2020.

Table No 11 presents views of respondents on factors relating to GBV and lack of internal women's associations for women's rights protection and self-socio-economic empowerment, vis-à-vis poor women's participation in mining workforce. As it can be seen, apart from 5% who are neutral, 86% strongly disagreed and 9% disagreed with the statement that says there is poor women's participation in mining because sex is used as a condition to be hired and stay at work. For the sexual harassment factor, 6% remained neutral, whereas all other respondents rejected the statement, with 85% who strongly disagreed and 9% disagreed. For other sexual abuses including rape and public sexual indecency on women, again, except 6% neutral views; all other respondents refuted the statement with 84% who strongly disagreed and 10% who disagreed. In a quiet similar way, for the silence of female mine-workers, victims of GBV, apart from 5% respondents who chose to be neutral, all other respondents rejected the statement, with 86% who strongly disagreed and 9% who disagreed. However,

[5] NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree

the simple majority of respondents (52%) with 33% who agreed and 19% who strongly agreed, accept that there is absence of internal associations to protect women's rights, and 51% respondents, including 32 who agreed and 19 who strongly agreed, agree that women's participation in mining can be hampered by the lack of saving groups to help women having access to finance for different economic purposes, compared to other sectors.

Data from interviews with different informants confirmed that there is no single case of GBV that got report to any organ, either COMIKAGI or governmental competent authorities. However, it cannot be 100% confirmed that those cases cannot be found in COMIKAGI, because some women might be reluctant to communicate such cases, in case they occur. This might be the reason why respondents support the necessity to have an internal associations to protect their rights, and saving groups to help women having access to finance for different economic purposes, compared to other sectors, as some of mechanisms that would boost the effective and remarkable integration of women in the mining workforce.

4.3 Existing mechanisms against factors hindering women's participation in COMIKAGI

Apart from factors hindering women's participation in the mining workforce, the study also assessed existing mechanisms against the same factors, as hereunder presented and discussed.

Table No 12: Exiting mechanisms against mining male-dominance

S/N	Statements	Respondents' positions[6]					Total
	Can the following be considered as mechanisms in place against male-dominance in the mining industry?	-2	-1	0	1	2	
1	Women of this area are naturally forced to work in mines because there are no alternative economic activities that can generate as much money as mining	0	0	12	49	39	100
2	There exist no taboos and stigma for women who work in mining in this area	0	0	0	57	43	100
3	Women are encouraged and allowed to work in mines	17	29	40	11	3	100
4	Women are allowed to work in all departments	11	23	28	20	18	100
5	Women are paid similarly as men when they perform same jobs	0	0	7	68	25	100
6	Availing separate bath, wash and change rooms	12	14	46	19	9	100
7	Having policies against GBV in COMIKAGI	4	12	36	32	16	100
8	Men involved in GBV are reported and punished	6	8	65	12	9	100
9	Any other mechanism	0	0	100	0	0	100

Source: Fieldwork data, 2020.

[6] NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree.

Table No 12 above presents mechanisms that exist in COMIKAGI as solutions to factors hindering women's participation in mining. On one side, while responding to the research questionnaire, except 12% who are neutral to the statement, all other 88% respondents including 49% who agreed and 39% who strongly agreed; they expressed that women of the Ruli area are naturally forced to work in mines because there are no alternative economic activities that can generate as much money as mining. In the same context, all 100 respondents including 57% who agreed and 43% who strongly agreed with the statement, accept that it is an opportunity for Ruli's women to work in mining, COMIKAGI included, because there exist no taboos and stigma for women who work in mining in the same geographical area. Another opportunity which constitutes a solution to the women's participation in mining, is the fact that women are paid similarly as men when they perform same jobs, as agreed by 68% and strongly agreed by 25% of respondents, in spite of 7 out of 100 respondents who remained neutral.

On the other side, only 11% respondents agree and 3% strongly agree that women are encouraged and allowed to work in mines, whereas 40% are neutral about the statement, against 29% who disagreed and 17% who strongly disagreed with the same statement. This is justified by the fact that there have never been a formal campaign encouraging women to join the mining workforce, as revealed by informants during interviews. Again, only 20% respondents agree and 18% strongly agree that women are allowed to work in all departments, whereas 23% disagree, and 11% strongly disagree, against 28% who are neutral about the statement.

The above statistical information is also confirmed by informants' interviews, where it was revealed that there are no women working in the digging department and the timbering department, in COMIKAGI. This is not because women cannot fit in the same departments, it rather because they have not yet integrated them due to the historical male-dominance of mining. As revealed by interviewees, some of COMIKAGI's neighbouring mine companies have women in the digging department, which is also possible for COMIKAGI, in case time comes to integrate them in the same department, especially when COMIKAGI will have become a semi-industrialized mining cooperative, where electrical jack-hammers are easily manipulated by any digger, without questioning him or her on gender belongings.

Moreover, respondents seem to believe that availing separate bath, wash and change rooms, having policies against GBV in COMIKAGI and reporting and punishing men involved in GBV, are not the real solutions to factors hindering women's participation in the mining workforce, as some of respondents support it and others reject the statements, with a big number of respondents who did not take any position about the statements, i.e. who remained neutral. For instance, whereas 46% of respondents are neutral, only 19% agreed and 9% strongly agreed, against 14% who disagreed and 12% strongly disagreed with the statement about availing separate bath, wash and change rooms in COMIKAGI. Likewise, whereas 36% decided to be neutral on the statement about GBV policies as a women's attraction and retention tool, at least 32% agreed and 16% strongly agreed, against 12% who disagreed and 4% who strongly disagreed with the statement. For the reporting and punishing of men involved in GBV, the majority of respondents, that is 65 in 100, chose to be neutral, against 12% who agreed and 9% disagreed with the statement, whereas 8% disagreed and 6% strongly disagreed.

The above diverging positions of respondents are justified by the reason that more workers have no formal mining related skills with high formal education, which makes them indifferent vis-à-vis best practices within the journey to assure gender equality in mining. As revealed in interviews, for these mine workers, the mere fact that mining dominates economic activities that generate good income to workers, and that there are no cultural norms, taboos and misconceptions; all community members, women included, are eager to work in mines, regardless of some incentives like bath, wash and change rooms, as well as GBV related policies.

4.4 Suggested mechanisms for the increment of women's participation in COMIKAGI

After detecting factors hindering women's participation in the COMIKAGI's mining workforce, and existing solutions to the same factors, the study learnt from respondents and interviewees about what they can suggest as new mechanisms against the male-dominance of the mining workforce.

Table No 13: Suggested mechanisms against mining male-dominance

S/N	Statements	Respondents' positions[7]					Total
	Can the following be suggested as mechanisms against male-dominance in the mining industry?	-2	-1	0	1	2	
1	Semi-industrializing the digging works with electrical jack-hammers for women to also integrate the digging department	0	0	0	63	37	100
2	To train women in digging activities and recruit them in digging	0	0	0	63	37	100
3	To train women in more other mining activities than digging	0	0	0	57	43	100
4	To have alternative placements for pregnant women	0	0	0	63	37	100
5	To introduce child-care places and avail related facilities for breastfeeding women and women with toddlers	0	0	0	63	37	100
6	To avail friendly bath, wash and change rooms in mine sites	1	6	61	20	12	100
7	To promote women's technical working groups, assign them specific mine sites, and equip them with skills and tools, and help them to have access to finances, for them to play a role-model role of women in mining, increase women's number and attract more women	0	0	0	63	37	100
8	To help women creating and managing internal saving groups	2	9	17	29	43	100
9	To disseminate and implement internal GBV related policies	0	0	17	43	40	100
10	Any other suggested mechanisms	0	0	100	0	0	100

Source: Fieldwork data, 2020.

Table No 13 presents what was suggested by the study's participants as mechanisms against factors hindering women's participation in mining, while responding to the study questionnaire and interviews. For this time, respondents have same views on the questionnaire statements.

For instance, all 100 out of 100 respondents, accepted suggested solutions including 63% who agreed and 37% who strongly agreed with the semi-industrialization of the digging works with electrical jack-hammers for women to also integrate the digging department; again 63% who agreed and 37% who strongly agreed with the mechanism to train women in digging activities and recruit them in digging; 57% who agreed and 43% who strongly agreed with the capacity building of women in more mining activities including digging; again 63% who agreed and 37% who strongly agreed with the introduction of alternative placements for pregnant women, as well as the introduction of child-care places and avail related facilities for breastfeeding women and women with toddlers; as well as 63% who agreed and 37% who strongly agreed with the promotion of

[7] NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree.

women's technical working groups, to assign them specific mine sites, and equip them with skills and tools, and help them to have access to finances, for them to play a "role-model" role of women in mining, increase women's number and attract more women.

Apart from the availability of friendly bath, wash and change rooms in mine sites where 61% of respondents decided to be neutral, against 20% who agreed and 12% who strongly agreed, besides 6% who disagreed and 1% strongly disagreed; more suggested mechanisms got supported by the majority of respondents. They include 29% who agreed and 43% who strongly agreed with helping women to create and manage internal saving groups, and 43% who agreed and 40% who strongly agreed with dissemination and implementation of COMIKAGI's GBV related policies.

4.5 Results discussions

This section presents results discussions. It starts with the discussion on the status of information provided by women compared to the one provided by men, in terms of gender variations; before comparing the literature review and results of the case study on factors for the poor women's participation in mining and mechanisms for the elimination of the same factors.

4.5.1 Gender variations

The present chapter on presentation of findings revealed the coherence between responses from women and men, which means in other words that neither women nor women provided biased information but rather responded to the research questions while taking into consideration the reality on field.

For instance, with table No 7, while responding to the question about factors relating to the male-dominance, cultural norms, misconceptions and misinformation; all respondents (100%, including 83 who strongly disagreed and 17 who disagreed), women and men combined, do not accept that the poor representation of women in mining is due to the belief that mining is for men, or the fear that the society shall laugh at women, or the belief that the presence of women curses on the production in general and especially when they are in their menstrual period, or the spoiling of activities where women would make men lazy while working together. Likewise, all respondents, women and men combined, with 47 out of 100 who agreed and 53 who strongly agreed, accept that there is poor women's participation in mining workforce, because women delayed to join the mining workforce.

Similarly, all information presented and discussed in next tables, that is, from table No 8 up to No, prove that responses were homogenous and that all respondents, women and men, generally had quite similar views on questions they responded to. In the same framework, the information collected by use of semi-structured interviews revealed that both female and male informants had the same understanding on factors that hinder the participation of women in mining workforce, with COMIKAGI as a case study, as well as on mechanisms for the elimination of the same factors.

4.5.2 Factors for the poor women's participation in the mining workforce

The literature review had revealed that common factors for the poor women's participation in the mining workforce across the world include the historical male-dominance, discrimination, cultural norms and misconceptions, pregnancies, births, breastfeeding and child care, other responsibilities in families and households, skills gaps, unfavourable physical environment, SGBV, lack of the political will, absence of business cases for gender equality in mining and the weak women's movement for gender equality in mining, on one side.

On the other side, findings revealed that some of those factors are also experienced in COMIKAGI, whereas others are not. For instance, respondents witnessed that men are more numerous in that cooperative's workforce because women delayed to join the mining workforce, as presented in table No 7, with 53% of respondents who strongly agreed and 47% who agreed to the statement. Also, respondents accepted that women are still hindered by pregnancies, births, breastfeeding and child care, other responsibilities in families and households, as presented in table No 9 where out of 100 respondents, 23 agreed and 62 strongly agreed that poor representation of women in mining is due to the fact that it is prohibited for pregnant women to work in mines, because they cannot enter tunnels or perform field works in mine sites, because it can endanger their pregnancies.

Similarly, the majority of respondents, that is 42% who agreed and 29% who strongly agreed, believe that women are less represented in mining, because husbands do not like to see their wives work in mine. Moreover, 43% agree and 27% strongly agree that the poor participation is due the fact that there are no child care places for breastfeeding women. In the same framework, 58% agree and 13% strongly agree that the poor participation results from the fact that women who have young children cannot bring them in mines, and there are no house maid who can care for the children.

The lack of alternative placements for pregnant and breastfeeding women was also viewed as a factor hindering women's great integration in mining, as this statement was agreed with by 57 respondents of the total 100 sample, and 14% strongly agreed with the same statement.

However, respondents in COMIKAGI do not accept that skills gaps, unfavourable physical environment, SGBV, lack of the political will, and companies' interests in employing women, constitute factors hindering women in the mining workforce participation. For instance, with table No 8, respondents rejected the idea according to which there is poor women's participation in mining workforce, because women have no mining related skills compared to men's skills, where 83 of 100 respondents, representing 83%, strongly disagreed and 17% disagreed with the statement. This is because COMIKAGI is an ASM, where no special and formally acquired skills are needed to work in the sector, where on-job capacity building and experience suffice to acquire skills and knowledge to work in the industry.

Tables No 7, 10 and 11 show that the majority of respondents do not accept that the poor women's representation in COMIKAGI is due to unfavourable physical environment, SGBV, lack of the political will, and companies' interests in employing women, because women of the rural areas are familiar with blue-collar jobs, besides the Government's will to promote gender equality in all sectors, mining included, as ascertained by the 2018 mining law, in its article 36, which compelled mine operators to "promote activities aiming at gender equality and complementarity".

4.5.3 Mechanisms for the elimination of factors hindering women's participation in the mining workforce

For mechanisms to eliminate factors hindering women's participation in the mining workforce, the literature review revealed that across the world, common mechanisms include friendly legal and policy framework, recruitment and retention strategies, formal education and capacity building, women's associations, community's awareness raising including the elimination of myths and taboos, and workplace women's rights protection.

For COMIKAGI, as table No 12 shows it, some of the mechanisms are applied, some others are not. For instance, as discussed above, the political will to promote gender equality in the Rwandan mining workforce is automatically felt from article 36 of the new mining law.

For formal education and capacity building, as COMIKAGI deals with ASM, this mechanism does not constitute one of the primordial mechanisms for the increment of women in the mining workforce. It can only apply in industrial and large scale mines. For the encouragement of women to work in mining, still with table No 12, except 12% respondents who chose to remain neutral to the question, all other 88% respondents including 49% who agreed and 39% who strongly agreed; they expressed that women of the Ruli area where COMIKAGI is located, are naturally forced to work in mines because there are no alternative economic activities that can generate as much money as mining. In the same context, all 100 respondents including 57% who agreed and 43% who strongly agreed with the statement, accept that there are no myths and taboos that would prevent women from joining the mining workforce. For the protection of women's rights as a solution to the women's participation in mining, 68% of respondents agreed and 25% strongly agreed that women are paid similarly as men when they perform same jobs.

In any case, all respondents (100%), accepted that more mechanisms should be introduced in COMIKAGI, in order to assure effective integration of women in its workforce. The suggested mechanisms match with some of the general solutions towards the increment of women's participation in mining, as discussed in the literature review. They include the semi-industrialization of the digging works with electrical jack-hammers for women to also integrate the digging department, training women in digging activities and recruiting them in the same department, to have alternative placements for pregnant women. They also include the introduction of child-care places and the availing of related facilities for breastfeeding women and women with toddlers. Respondents also suggested the promotion of women's technical working groups, to be assigned specific mine sites, and equipped with skills and tools, while also helping them to have access to finances, for them to play a role-model role of women in mining, and consequently increase women's number and attract more women.

In sum, though the general conclusion is drawn through the next chapter where recommendations are also elaborated, at this level, it can be reminded that chapter 4 started in presenting the identification of respondents, before taking us through factors hindering women's participation in the mining workforce in COMIKAGI, existing efforts within the elimination of same factors and mechanisms for the increment of women's participation in mining workforce in COMIKAGI.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

With the last chapter on the assessment of factors hindering women's participation in the mining workforce in Rwanda with COMIKAGI as a case study, chapter 5 summarizes findings before drawing conclusions and elaborating recommendations.

5.1 Summary of findings

As it is the case elsewhere across the world, women are still dominated by men in the mining industry. The study found factors associated with this disparity, learnt about existing mechanisms within the elimination of the same factors, as well as suggested mechanisms for the increment of women's participation in mining workforce in COMIKAGI.

As far as factors for the poor women's representation in the mining workforce in COMIKAGI are concerned, the study found that for factors relating to the male-dominance, cultural norms, misconceptions and misinformation, in COMIKAGI; it is only considered that men supersede women in the mining workforce because women delayed to join the mining workforce, as confirmed by all 100% respondents, whereas other factors like considering mining as men's job, believing that the presence of women curses on mineral production, women's fear to be sexually abused, making men lazy, cannot apply to the situation in COMIKAGI because the surrounding communities, male and female, are familiar with the reality of the mining industry, and do not therefore rely on cultural myths, taboos and misconceptions.

For factors relating to the capacity and skills to perform mining activities, the study found that these cannot prevent women to join the mining workforce in COMIKAGI, as all 100% respondents refuted the idea that there is poor women's participation in mining workforce, because women have no required energy to perform mining activities or because they have no mining related skills compared to men's skills.

The study participants confirmed in interviews that as women can perform other energy requiring jobs like agriculture, it is the same way they can perform mining activities, for ASM where no special formal mining skills are required.

For factors relating to pregnancies, births, breastfeeding and child care and other families and households related responsibilities, the study found that it is real that pregnant women are not allowed to work at the mine site, whereas for other reasons depend upon the family's choice, without an societal influence, like for husbands who choose to prevent their wives to work in mines after wedding, whereas some other men work in mines together with their wives. However, the absence of childcare facilities in mines, as some women fail to leave younger children in families for mining activities, as well as the absence of alternative placements for pregnant and breastfeeding women, have a negative impact on the number of women in the mining workforce.

For factors relating to unfavourable physical environment and facilities specific for women, the study found that the Ruli community in general and COMIKAGI mine workers in particular do not consider the physical environment and facilities specific for women as reasons that negatively impact on the number of female mine workers compared to their fellow male mine workers. For instance, 87 %who strongly disagreed and 13% who agreed, rejected the idea according to which there is poor women's participation in mining workforce, because only men are physically fit for the terrain and mine shafts. The study found that women have eagerness to work in mines, regardless of the presence of separate bath, wash and change rooms for men and women, even in case of lack of PPEs specific for women.

For factors relating to GBV and lack of internal women's associations for women's rights protection and self-socio-economic empowerment, the study also found that women do not care about mineral governance best practices that cater for women's favourable social environment. However, the study found that participants support the necessity to have an internal women's associations to protect their rights, and saving groups to help women having access to finance for different economic purposes, compared to other sectors, as some of mechanisms that would boost the effective and remarkable integration of women in the mining workforce.

In the framework of existing mechanisms against factors hindering women's participation in COMIKAGI, the study found that preliminarily, women of the area are naturally forced to work in mines because there are no alternative economic activities that can generate as much money as mining, as confirmed by 88% respondents. Another good thing is that there exist no taboos and stigma for women who work in mining in this area, which could prevent women to work in mines, as confirmed by all 100% respondents. Additional existing positive things are that women not refused to work in mining and in all departments, though the digging and timbering ones have not yet started employing women in COMIKAGI, not because they cannot perform related works, because in some of the neighbouring companies women perform same works, but because women's integration is process, whereby respondents believe that time will come for women to join the same departments. Other existing good mechanisms include the fact that women are paid similarly as men when they perform same jobs, and that there are GBV related written policies that are being implementation in the interests of women. Additional mechanisms include availability of separate wash, bath and change rooms for women and men.

For suggested mechanisms for the increment of women's participation in COMIKAGI, the study found that participants view generally that improvements on women's capacity building and labour division, introduction of childcare facilities and alternative placements for pregnant and breastfeeding women, would largely contribute to the reduction of the disparity between male and female mine workers. For instance, all 100 out of 100 respondents, accepted suggested solutions including the semi-industrialization of the digging works with electrical jack-hammers for women to also integrate the digging department; the mechanism to train women in digging activities and recruit them in the digging department; the capacity building of women in more mining activities including digging and timbering; the introduction of alternative placements for pregnant women, and the introduction of child-care places and availability of facilities for breastfeeding women and women with toddlers; as well as the promotion of women's technical working groups, to assign them specific mine sites, and equip them with skills and tools, and help them to have access to finances, for them to play a "role-model" role of women in mining, increase women's number and attract more women.

5.2 Conclusions

Findings of the study led to some conclusions. For factors impacting on women's representation in the mining workforce in COMIKAGI, the study concludes that the same factors are grouped in different areas including the male-dominance, cultural norms, misconceptions and misinformation about women in mining; the capacity and skills to perform mining activities for women; pregnancies, births, breastfeeding and child care and other families and households related responsibilities; unfavourable physical environment and facilities specific for women; and GBV and lack of internal women's associations for women's rights protection and self-socio-economic empowerment, and the same factors include:

- The historical male-dominance of the mining workforce because women delayed to join the mining workforce;
- The prohibition for pregnant women to work in mines and the absence of alternative placements for breastfeeding women;
- The choice of some husbands not to allow their wives to work in mines, especially after births;
- The absence of child care places for breastfeeding women;
- Lack of internal associations to protect women's rights and lack of saving groups to help women having access to finance for different economic purposes, compared to other sectors.

For existing mechanisms within the elimination of factors hindering women's participation in the mining workforce in COMIKAGI, the study concludes that there is, in terms of mechanism:

- The opportunity for women of the area to be naturally forced to work in mines because there are no alternative economic activities that can generate as much money as mining;
- The opportunity that there exist no taboos, cultural norms and misconceptions, as well as stigma for women who work in mining in this area;
- The payment of a similar salary for women who perform same jobs as men;

With regards to other mechanisms for the increment of women's participation in mining workforce in COMIKAGI, the study concludes that participants supported:

- Semi-industrializing the digging works with electrical jack-hammers for women to also integrate the digging department;
- To train women in digging activities and recruit them in digging, to train them in more other mining activities than digging;
- To have alternative placements for pregnant women;
- To introduce child-care places and avail related facilities for breastfeeding women and women with toddlers;
- To avail friendly bath, wash and change rooms in mine sites;
- To promote women's technical working groups, assign them specific mine sites, and equip them with skills and tools, and help them to have access to finances, for them to play a "role-model" role of women in mining, increase women's number and attract more women;
- To disseminate and implement internal GBV related policies.

Findings of the study, together with the conclusions, led all to the elaboration of recommendations.

5.3 Recommendations

For the reduction of the disparity between male and female mine-workers in mining in COMIKAGI, recommendations are addressed to the Government of Rwanda, COMIKAGI and mine workers themselves.

5.3.1 Recommendations to the Government of Rwanda through RMB and GMO

It is true that the Government of Rwanda established a strong foundation for women's participation in the mining workforce, through making it a legal obligation for mining corporations to include women in their workforce. However, the same law neither indicated the percentage of women that mining corporations are supposed to have nor set national guidelines for women's integration process.

For this reason, the Government of Rwanda, through RMB and GMO, is recommended:

- To set a minimum of women that are supposed to be employed in mining;
- To establish national guidelines for the process of women's integration in the mining workforce;
- To carry out monitoring sessions to see how far mining corporations are in integrating women in their mining workforce and give needed recommendations to the same corporations.

5.3.2 Recommendations to COMIKAGI

Apart from commending COMIKAGI for its efforts to have so far integrated women in its workforce to a 16.17%, the study decided to issue recommendations to the cooperative, for not only improvements on numbers, but also on women's working conditions. The recommendations are:

- To acquire electricity in mine sites and introduce the semi-industrialization approach in the digging works with electrical jack-hammers for women to easily integrate the digging department;
- To train women in digging activities and recruit them in digging and to train them in more other mining activities than digging, like timbering and others;
- To have alternative placements for pregnant women;
- To introduce child-care places and avail related facilities for breastfeeding women and women with toddlers;
- To avail friendly bath, wash and change rooms in mine sites, instead of only having suitable ones at the Cooperative's headquarters;
- To promote women's technical working groups, assign them specific mine sites, and equip them with skills and tools, and help them to have access to finances, for them to play a "role-model" role of women in mining, increase women's number and attract more women;
- To disseminate and implement internal GBV related policies.

5.3.3 Recommendations to mine-workers

Mine workers are recommended:

- To keep working hard in order to increase the production and financial capacities that shall enable the Cooperative to assure more physical and social friendly environment to female mine-workers;
- To share success stories with fellow women who have not yet joined the mining workforce for them to fully be equipped with information on the working conditions and earnings associated with mining activities, and therefore attract more women to the industry.

5.3.4 Recommendations for further studies

The present study was limited to female mine-workers, and did not therefore treat matters pertaining women as owners of mining corporations in terms of members of mining cooperatives and female shareholders of mining companies. Future researchers are therefore recommended to work on topics like:

- The place of women in mining investments in Rwanda;
- Incentives and opportunities for female business persons to invest in the Rwandan mining industry.

All in all, though it is a journey, the geographical location of COMIKAGI where mining dominates other economic activities, can lead to a quick and efficient integration of women in the mining workforce. In other words, with time, the historical male-dominance of the mining workforce shall remain as history. The analysis of posts occupied by women in COMIKAGI's administration, including logistics management, production management and accounting, show how much women are more trusted than men. This said, the same trust can be extended to other posts and therefore lead to the availing of more mechanisms to increase the number of women, and reduce the disparity between men and women in the mining workforce.

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APPENDICES

QUESTIONNAIRE

Dear Respondent,

I am Mrs Nkundibiza Aline Providence, a student at University of Rwanda, College of Arts and Social Studies, Centre for Gender Studies, Reg. No. 219014973. I am conducting a study on factors hindering women's participation in the mining workforce, with COMIKAGI as a case study, as one of the requirements to be awarded a Master's Degree in Gender and Development Studies. You are invited to answer to the questions herein contained. You have right to either not answer to any question, or answer to all of them, or to some of them. You are not supposed to tell your names and your identity and privacy shall be kept confidential. This study is done in pure scientific context and your opinions shall never be used in a commercial purpose. Therefore, by answering to these questions, you are contributing to the promotion of gender equality in the mining sector. The researcher shall come back to COMIKAGI to disseminate the findings and recommendations from the study, for the same overall objective to be reached.

You are warmly welcomed!

A. Identification of respondents

1. Sex:
    a) Female
    b) Male

2. Age:
    a) Below 18 years
    b) 18 – 30 years
    c) 31 – 40 years
    d) 41 – 55 years
    e) 56 – 65 years
    f) Beyond 65 years

3. Formal education:

a) Primary school (completed or not)

b) Secondary School (completed or not)

c) University or any other higher education (completed or not)

d) Technical / vocational training (completed or not)

e) No schooling

4. Mining related skills and their origin:

a) Mining related skills acquired via formal education

b) Mining related skills acquired on-job

c) Mining related skills acquired via out-of-job trainings

d) No mining related skills

5. Occupied post in COMIKAGI:

a) Managerial position

b) Ordinary administration position (logistics, accountancy, human resources, marketing, etc.)

c) Digging

d) Sluicing

e) Transport of the ore

f) Processing (winnowing, grinding, roasting, drying, etc.)

g) Security

h) Any other type of work, mention it ……

6. Experience in mining activities before joining COMIKAGI:

a) Less than 1 year – 10 years

b) 11 years – 20 years

c) 21 years – 30 years

d) Beyond 30 years

e) Had no experience, learnt everything from COMIKAGI

7. Experience in mining activities after joining COMIKAGI:

a) Less than 1 year – 10 years

b) 11 years – 20 years

c) 21 years – 30 years

d) Beyond 30 years

B. Factors for the poor women's representation in the mining workforce in COMIKAGI

8) Factors relating to the male-dominance, cultural norms, misconceptions and misinformation

NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree

S/N	There is poor women's participation in mining workforce,	**-2**	**-1**	**0**	**1**	**2**
1	Because women delayed to join the mining workforce					
2	Because women of the area believe that mining is for men					
3	Because women fear that the society shall laugh at them, as mining is in this area considered as a men's job					
4	Because it is believed that the presence of women curses on the production in general					
5	Because it is believed that the presence of women curses on the production, especially during menstrual period					
6	Because women fear to be sexually abused					
7	Because women make men lazy when they work together in the mines					

Any other related reason, mention it ……..

9) Factors relating to the capacity and skills to perform mining activities

NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree

S/N	There is poor women's participation in mining workforce,	-2	-1	0	1	2
1	Because women have no required energy to perform mining activities					
2	Because women have no mining related skills compared to men's skills					

Any other related reason, mention it ……..

10) Factors relating to pregnancies, births, breastfeeding and child care and other families and households related responsibilities

NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree

S/N	There is poor women's participation in mining workforce,	-2	-1	0	1	2
1	Because it is prohibited for pregnant women to work in mines					
2	Because husbands do not like to see their wives work in mine					
3	Because there are no child care places for breastfeeding women					
4	Because mining cannot allow women to perform home activities					
5	Because husbands cannot work together with their wives in mines					
6	Because women who have young children cannot bring them in mines, and there are no house maid who can care for the children					
7	Because there are alternative placements for pregnant and breastfeeding women					

Any other related reason, mention it ……..

11) Factors relating to unfavourable physical environment and facilities specific for women

NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree

S/N	There is poor women's participation in mining workforce,	-2	-1	0	1	2
1	Because only men are physically fit for the terrain and mine shafts					
2	Because there are no separate bathrooms for men and women					
3	Because there are no separate washrooms for men and women					
4	Because there are no separate change rooms for men and women					
5	Because husbands cannot work together with their wives in mines					
6	Because there are no PPEs specific for women					

Any other related reason, mention it ……..

12) Factors relating to Gender Based Violence and lack of internal women's associations for women's rights protection and self-socio-economic empowerment

NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree

S/N	There is poor women's participation in mining workforce,	-2	-1	0	1	2
1	Because sex is used as a condition to be hired and stay at work					
2	Because women are sexually harassed by their leaders in case they refuse to have sex with them					
3	Because women are victim of sexual abuses by fellow mine workers, including rape, public sexual indecency on women, etc.					
4	Because female mine-workers victim of GBV remain quiet, because there is no channel to communicate GBV cases					
5	Because women have no internal associations to protect their rights					
6	Because there are no saving groups to help women having access to finance for different economic purposes, compared to other sectors					

Any other related reason, mention it ……..

C. Existing mechanisms within the elimination of factors hindering women's participation in the mining workforce in COMIKAGI

13. Do you believe the following contributed to the elimination of factors hindering women's sufficient participation in the mining workforce at COMIKAGI?

NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree

S/N	Attraction and retention factor	**-2**	**-1**	**0**	**1**	**2**
1	Women of the area are naturally forced to work in mines because there are no alternative economic activities that can generate as much money as mining					
2	There exist no taboos and stigma for women who work in mining in this area					
3	Women are encouraged and allowed to work in mines					
4	Women are allowed to work in all departments					
5	Women are paid similarly as men when they perform same jobs					
6	Availing separate bath, wash and change rooms					
7	Having policies against GBV in COMIKAGI					
8	Men involved in GBV are reported and punished					

Any other related mechanism, mention it ……..

D. Suggested mechanisms for the increment of women's participation in mining workforce in COMIKAGI

14. Do you believe the following can contribute more to the increment of women's participation in the mining workforce at COMIKAGI?

NB: - 2: Strongly disagree; -1: Disagree; 0: Neutral; 1: Agree; 2: strongly agree

S/N	Mechanisms that can be suggested	**-2**	**-1**	**0**	**1**	**2**
1	Semi-industrializing the digging works with electrical jack-hammers for women to also integrate the digging department					
2	To train women in digging activities and recruit them in digging					
3	To train women in more other mining activities than digging					
4	To have alternative placements for pregnant women					
5	To introduce child-care places and avail related facilities for breastfeeding women and women with toddlers					
5	To avail friendly bath, wash and change rooms in mine sites					
6	To promote women's technical working groups, assign them specific mine sites, and equip them with skills and tools, and help them to have access to finances, for them to play a role-model role of women in mining, increase women's number and attach more women					
7	To help women creating and managing internal saving groups					
8	To disseminate and implement internal GBV related policies					

Any other related mechanism, mention it ……..

I thank you very much, for your time and ideas.

INTERVIEW GUIDE

1. Factors:
    - What are the factors for the poor women's representation in the mining workforce?
    - What about Ruli community's perception on women in mining?
    - Is there any particularity for COMIKAGI?
2. Steps:
    - What are the steps that have been made or which are being made to eliminate factors hindering women's participation in the mining workforce?
    - Is there any particularity for COMIKAGI?
3. Next mechanisms:
    - What would be the mechanisms for the increment of women's participation in the COMIKAGI's mining workforce?
    - Is there any particularity for COMIKAGI?
    - Is there anything you are planning to increase the number of women in mining, COMIKAGI included?

I thank you very much, for your time and ideas

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by Aline Nkundibiza

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