The retention of female mining graduates in hard rock mining operations – challenges and opportunities

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Overview

1. Background
2. Methods
3. Results
4. Conclusion
5. Q&A

Background

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Diversity

“ Capacity to value difference as a positive phenomenon and to guard against the need to measure everyone by a single standard of behaviour.”

C. Cooper

Diversity

- According to WP. Nel (2013), benefits of diversity include:
  1. Enhanced creativity, problem solving, and decision making,
  2. Flexibility through social adaptation,
  3. Leadership is effective and objective, through the elimination of stereotypes; and
  4. Global competitiveness

Women in Mining

- Globally, women represent 8 to 17% of the mining industry workforce (World Bank, 2019)
- McKinsey and Company (2021) mention that tenured women (5 years of experience and more) start losing interest in the mining industry.
- In 2024 (July –Sep), the Minerals Council South Africa estimated a 20.3% female representation within the mining industry from a survey of 14 mines.

Source: Minerals Council South Africa, 2024 (https://wim.powerappsportals.com/)

Left image source: https://towards2030.thewest.com.au/closing-the-gender-gap-in-mining-and-construction/

Aim & Objectives

AIM

- Evaluation of motivational factors contributing to poor retention of female mining graduates in hard rock South African mine operations.

Objectives

1. Assess female mining graduates' response to distinguishing factors as a woman working in the mines.
2. Investigate the motivational factors that may affect the retention rate.
3. Critical examination of findings from literature.

Objective 1

Assess female mining graduates' response to distinguishing factors as a woman working in the mines.

Quantitative data

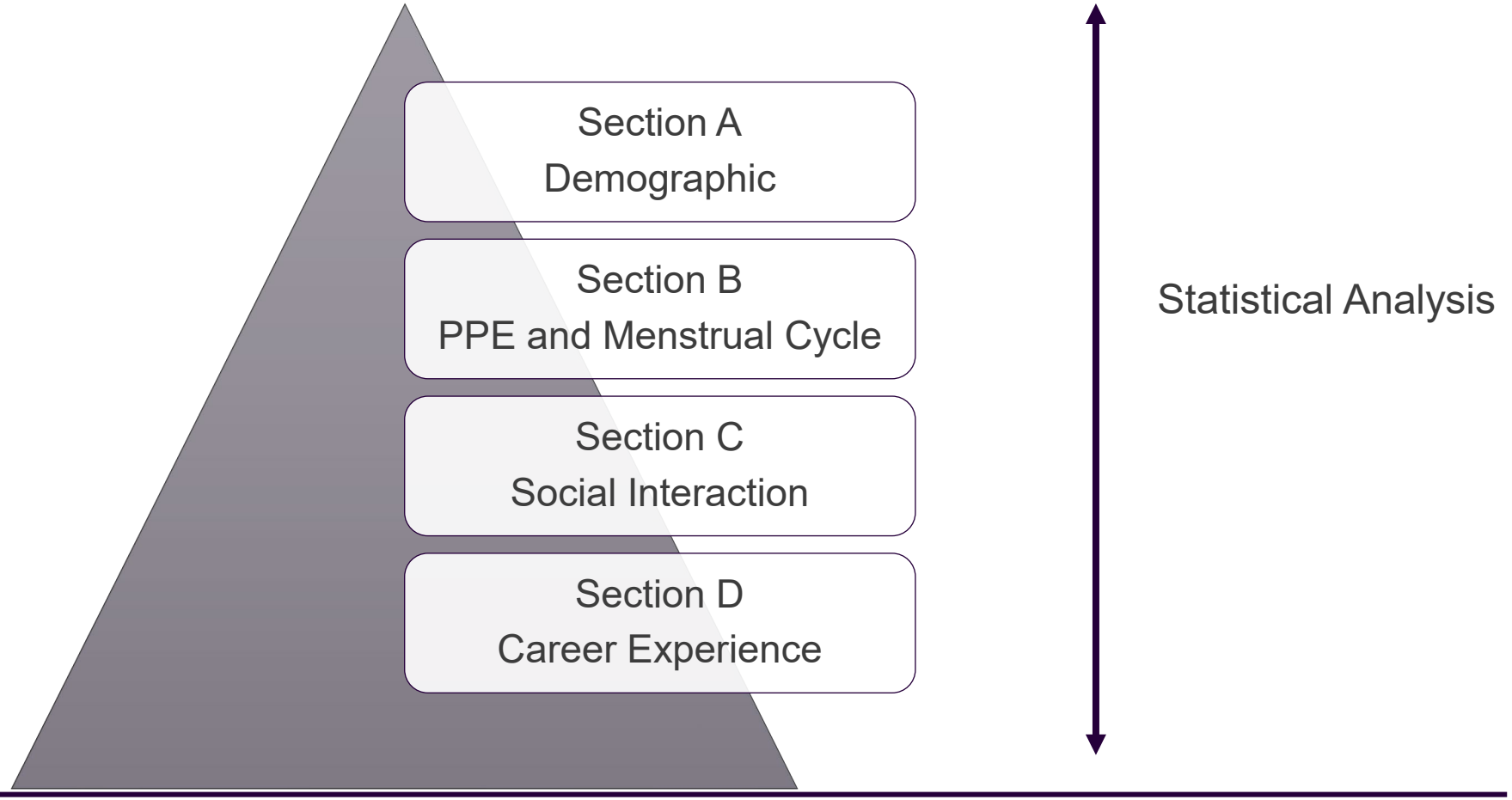
Digital survey
- Close-end dynamic
- 36 questions divided into four sections

Purposeful sampling

Criteria Based
- Female
- Graduates
- Qualify in mining engineering
- Experience in hard-rock

Objective 2

Investigate the motivational factors that may affect the retention rate.



Objective 3

Critical examination of findings from literature.

Thematic Analysis

Results

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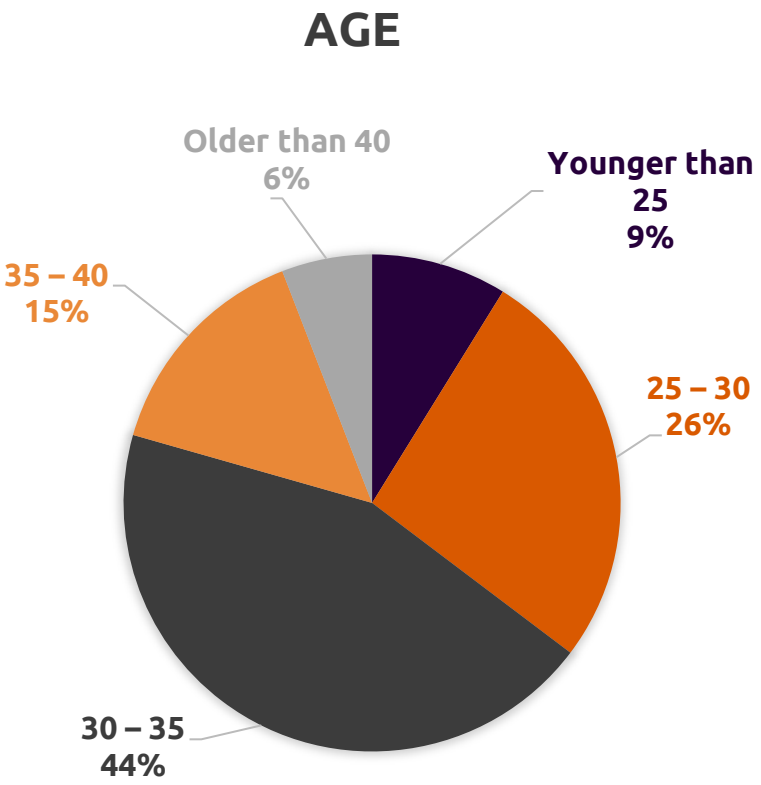
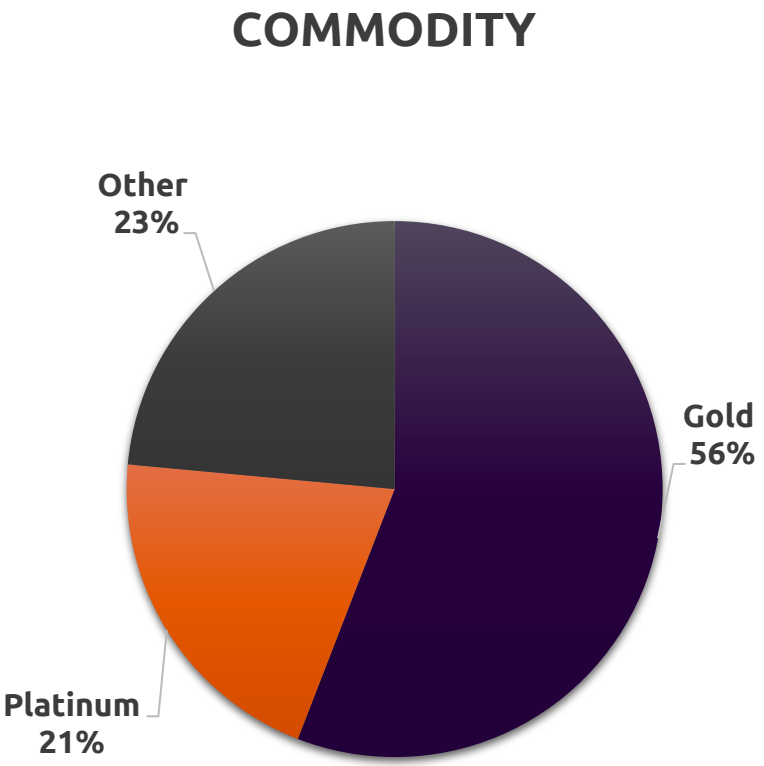
Section A - Demographics



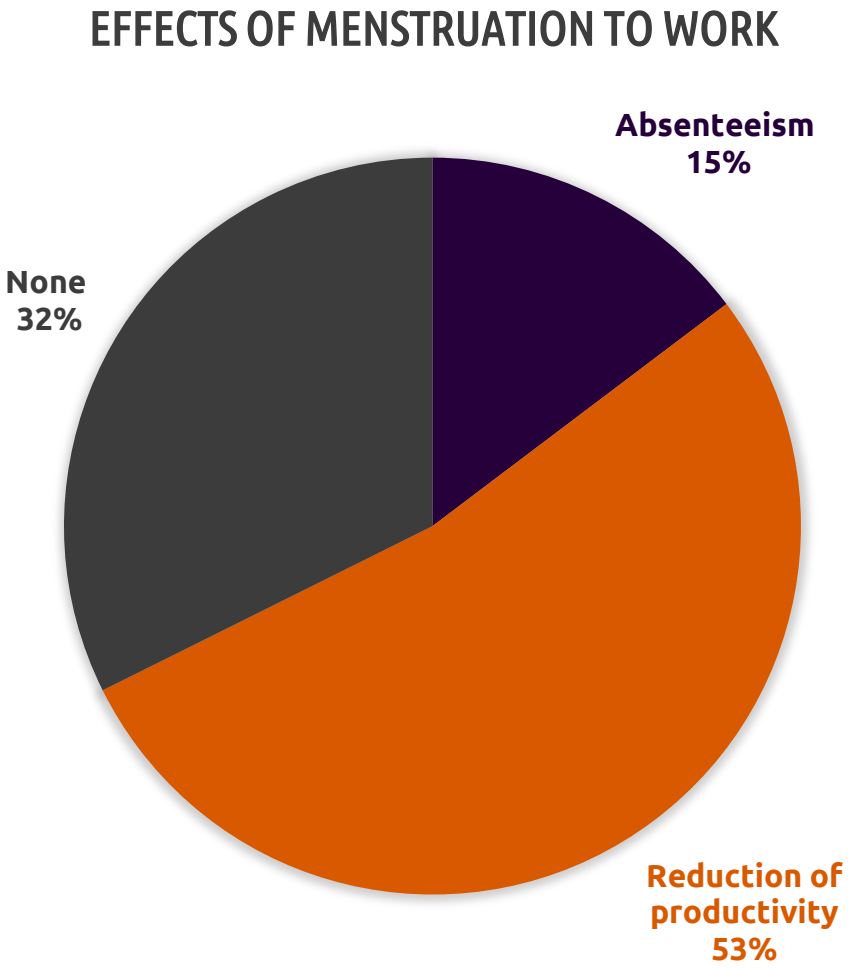
- Majority of respondents were between 30 – 35 years.
- Only 6% were over 40 years
- Respondents: Gold(56%), Platinum (27%), and other [iron ore, silver, zinc, etc.] (23%)



Section B – PPE

- From the survey, the participants indicated regarding PPE:
  - 82% use dark coloured overall.
  - 59% were satisfied with the overall.
  - 59% were not satisfied with the u/g boot fit.

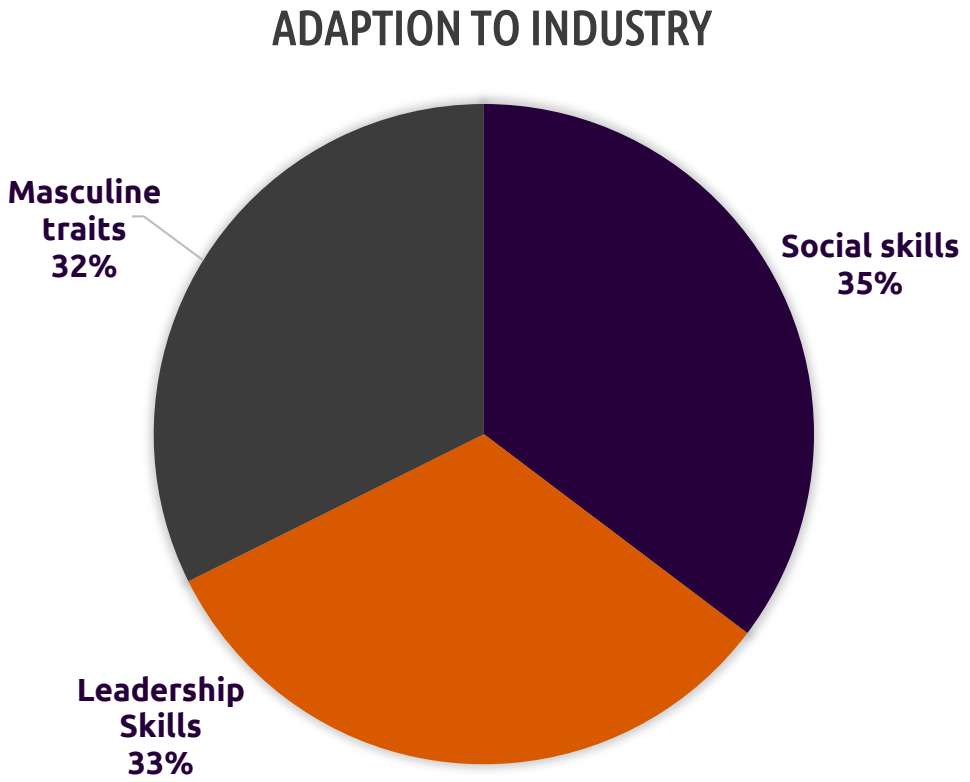
Section B –Menstrual Challenges



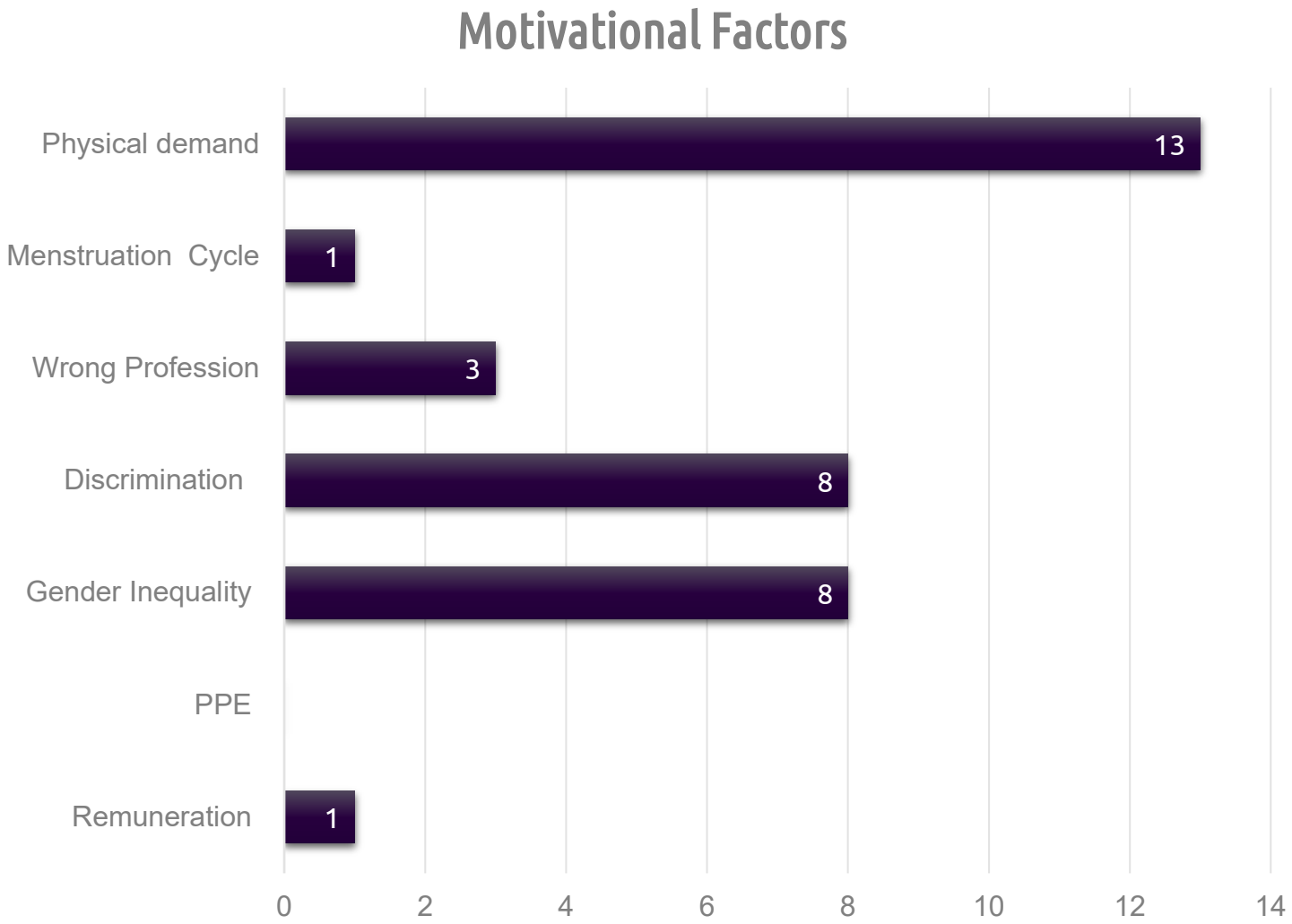
- 45% started their menstrual cycle U/G and had no sanitation aid.
- 42% experience menstrual cramps regularly.
- 45% experience heavy flow during menstruation.

Section C – Social Interaction

- 94% led employees are older than 30 years of age.
- 74% experienced a negative attitude from subordinates, such as being undermined and hostility.
- 67% of participants received a positive change from the subordinates.



Section D – Career Experience



Which factor plays a huge role in potentially causing female mining graduates to leave the hard-rock mining environment?

Discussion

- Motivational factors ranked in order:
  1. Physical demands
  2. Discrimination and gender inequality
  3. Wrong profession
  4. Menstrual Cycles
  5. Remuneration
  6. PPE

- About 67% of the participants expressed the desire to continue their careers in the industry, and only 9% were not sure. Hence, the need to improve the mining industry to be conducive to retaining female graduates.

Literature Analysis

Author	Main Findings
Benya, 2017	• Masculine culture poses a challenge
Mousalli, 2018	• Start a family (industry not family – friendly) • Management • Personal circumstance • Quality of life (work shift rosters)
Badenhorst,2009	• Social environment • Hostility towards women • Fear of sexual harassment • Intimidation • Finding the physical working environment unpleasant.
Keetharuth, 2021	• Social environment underground, • Sexual harassment or sexual intimidation or assault, • The physical challenges of working underground or the physical environment
McKinsey and Company, 2021	• Physical demand • Lack of intellectual stimulation

Literature Analysis

According to the five literature reviews leading concerns of women in mining are:

1. Physical demands of the job (X3)
2. Sexual violence (x2)
3. Social Workplace interaction (x2)

- The respective research output supports the findings of the survey.

Conclusion

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Conclusions

- Continuous research and development are required to quantify progress for women's inclusion.
  - Determine the root cause of poor retention to improve the continuous improvement of systems governing workplaces.
  - Enhance education to support females in the industry

- The leading factors to potentially cause graduates to resign are:
  1. Physical demands of the job,
  2. Discrimination, and
  3. Gender inequality.

- Female non-graduates and graduates face the same concerns in the mining environment.

Opportunities

Future research in this topic, based on the leading motivational factors, follows:

- **Physical Demands**
  - A clear definition, supported by medical science, of what the limits and constraints of physical intensity are.
  - Assess and improve other factors that can potentially contribute to occupational hazards, such as walking distance, heat, or load carrying.
- **Discrimination and gender inequality**
  - Policies should be enforced in workplaces, encouraging diversity among employees.
  - Use education as a tool to combat discrimination, through training centers at mines and educational institutions.

Questions?

Thank you for your attention!