

Factors Influencing the Retention of Skilled Mining Technicians in Zambia: Evidence from an Original Equipment Manufacturer

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Abstract: *This study examines the factors influencing the retention of skilled technicians, particularly Heavy-Duty Mechanics (HDM) and High Voltage Electricians (HVE) in the mining sector in Zambia. Despite competitive remuneration structures, mining organizations continue to experience high turnover, driven by global labor mobility and internal organizational factors. Using a mixed-methods approach within an Original Equipment Manufacturer (OEM), the research identifies training and development, safety, career progression, and compensation as key determinants of retention. Findings support Herzberg's Two-Factor Theory, highlighting the importance of motivators in sustaining long-term employee commitment, while acknowledging the importance of compensation.*

Keywords: Employee retention; Technicians in the mining sector; Herzberg's Two-Factor Theory; Human resource management

1. Introduction

Employee retention has become a central concern in human resource management due to increasing global labor mobility and intensifying competition for scarce skills (Feldman & Arnold, 1983). In skills-intensive and high-risk industries such as mining, the loss of experienced technical employees can significantly disrupt operational continuity and organizational performance (Alshammari, *et al.*, 2016). Mining technicians, particularly Heavy-Duty Mechanics (HDM) and High-Voltage Electricians (HVE), possess specialized competencies that are not easily replaced, making retention a strategic HRM priority.

Within the Global South, mining organizations face additional retention challenges linked to international migration, economic disparities, and limited local development opportunities (IOM report, 2021). Zambia's mining sector illustrates this complexity, as skilled technicians are increasingly attracted to global mining markets offering better pay, defined career paths, and superior training. Despite competitive local pay structures, turnover remains high, suggesting that retention is influenced by factors beyond compensation alone (Mobley, 1977)

Drawing on Herzberg's Two-Factor Theory (Herzberg *et al.*, 1959), this study examines how hygiene and motivator factors interact to shape retention decisions among skilled technicians in the mining sector. By focusing on an Original Equipment Manufacturer (OEM) operating in Zambia, the study contributes to literature by extending motivation theory into a non-Western, high-risk industrial context that remains underrepresented in HRM research.

2. Materials and Methods

A mixed-methods research design was adopted to enhance methodological rigor and provide a holistic understanding of retention dynamics (Creswell & Plano Clark, 2017). Quantitative data to identify key retention trends, while

qualitative data captured technicians' lived experiences and contextual insights.

The study utilized purposive sampling to select participants with direct exposure to mining operations and HR practices. The sample consisted of Heavy-Duty Mechanics, High-Voltage Electricians, and Human Resource practitioners. Data collection was conducted using structured questionnaires containing both closed-ended and open-ended questions.

Quantitative data was analyzed using descriptive statistics, including frequencies and percentages. Qualitative data were analyzed thematically following Braun and Clarke's (2006) approach. Ethical approval was obtained, and participants provided informed consent. Anonymity and strict confidentiality was maintained to ensure compliance with Zambian ethical standards.

3. Results

The results demonstrate that training and development opportunities are the most influential factors affecting retention intentions. A significant proportion of respondents indicated dissatisfaction with limited access to advanced training and lack of clear career progression. Safety emerged as a critical hygiene factor, with participants highlighting inconsistencies in enforcement and delayed responses to safety concerns.

Career development limitations were strongly associated with turnover intention, particularly among younger technicians seeking long-term growth. Compensation dissatisfaction was present but often framed in terms of perceived inequity rather than absolute pay levels. This supports Herzberg's idea that pay alone fails to motivate long-term commitment (Herzberg *et al.*, 1959).

4. Discussion

The findings provide empirical support for Herzberg's Two-Factor Theory by illustrating the distinct roles of hygiene and motivator factors in a mining context. While compensation and safety reduce dissatisfaction, they do not guarantee retention. Instead, motivators such as career development, recognition, and meaningful work that drives long-term engagement.

This study contributes to scholarly articles by extending motivation theory into a Global South, skills-intensive industry. The findings align with prior HRM research while highlighting contextual differences that shape retention dynamics in emerging economies. Practically, the study underscores the need for mining organizations to adopt holistic HR strategies that integrate financial and non-financial retention mechanisms.

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