OCCUPATIONAL STRESSORS WITHIN THE MINING AND BANKING INDUSTRIES IN THE TARKWA MINING AREA OF GHANA

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ABSTRACT
This study aimed to investigate the major stressors and the awareness levels these stressors among 106 employees of the mines and banks in the Tarkwa mining area of Ghana through questionnaire administration. The results showed that among employees of the mining industry, personality block was the most common occupational stressor. Drive, under the personality block was perceived as the most predominant source of stress among employees of the mining industry. Social balance was the major block of occupational stressor among employees of the banking industry. Social responsibility, which is an element of social balance block was perceived as the highest source of stress among the bankers. In general, the awareness level of the major stressors among employees of both industries was fairly low. It is therefore recommended that a comprehensive stress management program be adopted in both industries to help effectively manage occupational stress.

Keywords: Cronbach Alpha, personality, social balance, stress management, task design, working environment.

1 INTRODUCTION

The Tarkwa mining area is known for its brisk mining activities. Unlike most mining communities in Ghana, the area houses five different mining companies namely: Gold Fields Ghana Limited, Tarkwa and Damang Mines; AngloGold Ashanti, Iduapriem Mine; Ghana Manganese Company Limited, Nsuta-Wassaw; and Golden Star Resources, Bogoso. This peculiarity has made Tarkwa one of the most vibrant and economically viable business centers in the country. It has over fifty corporate organizations made up of multinational mine support service providers, local engineering and support firms, suppliers, hotels, restaurants, small scale mining firms, gold buying companies etc. There are currently fourteen different commercials banks operating in Tarkwa with some having more than one branch. The volume of cash withdrawals is highest in the country.

The recent upsurge in the price of gold on the world market and the ever increasing competitiveness in the banking industry have brought with it a situation in which employees of these two industries are under intense pressure to put in long hours to deliver on very high targets and deadlines. This has resulted in increased levels of stress.
experienced by employees in these industries; a situation which if not well-managed will lead to undesirable consequences. Most employees in these industries, however, seem oblivious to this imminent danger, unwittingly accepting monetary compensation at the expense of their health.

This paper seeks to investigate the major stressors and the awareness levels of these stressors among employees of the mining and banking industries within the Tarkwa mining area so as to recommend ways to manage these stressors to promote high productivity and healthy working environment.

2 HISTORICAL PERSPECTIVE OF STRESS AND SOME DEFINITIONS

The term stress is derived from the Latin word *stringere*, which means ‘to draw tight’, and was used in this way in the 17th century to describe a hardship or an affliction (Cartwright and Cooper, 1997). Later in the 18th century the term stress referred primarily to an individual’s ‘force, pressure, strain or strong effort’. It was these early definitions used in physics and engineering that began to influence the notion that stress may affect individuals, where forces are seen to exert pressure on an individual, producing strain (Hinkle, 1977).

The early work of Cannon (1932) emphasized that forces in the environment could cause disease and that people would have a tendency to resist these forces. Cannon (1932) labeled the stress response as the ‘emergency reaction’ and is most well known for his work identifying the ‘fight-or-flight’ response. One of the earliest attempts to scientifically explain the process of stress-related illness was made by Selye (1974, 1976). Selye's works created the three stage model termed the General Adaptation Syndrome (GAS). The first stage in this model is ‘alarm resistance’ where a phase of lowered resistance is followed by shock and defense mechanisms becoming active, the second stage is ‘resistance’ where the individual struggles and is exposed to health risk and distress, and the last stage ‘exhaustion’ occurs if resistance is not successful and leads to collapse. Selye’s work was criticized on the basis that it ignored the psychological impact on the individual and also the individual’s ability to change the situation after recognizing the stress (Cartwright and Cooper, 1997).

More comprehensive theories of stress began to emphasize the interaction between the person and the environment. One such model was outlined by Harrison (1978) and was called the Person-Environment (P-E) fit. In this theory of stress, Harrison emphasized that there are two kinds of fit between an individual and their environment: the extent to which the skills and abilities of the individual match the demands required of them and the extent to which the environment matches the individual’s needs. Harrison suggested that when a misfit of either of these two measures of P-E fit arises, health strains will result. Thus, in this model stress is not defined in terms of the environment or the individual, but rather in terms of the degree of misfit between them.

Another contemporary view of stress, aligned with the P-E fit model was proposed by Lazarus (1966, 1990), Lazarus and Launier (1978) and (Cooper *et al.*, 2001). They saw the stress process as being relational, as a result of a transaction between the individual and the environment, where stress will arise when the demands encountered by an individual are appraised or perceived as exceeding the resources available to them, threatening their well-being. This transactional theory of stress emphasizes identifying processes that link the individual to the environment. In this approach, the emphasis is on the ‘transaction’ – that is, realizing that stress does not rely solely on the individual or the environment but that it is an ongoing process that involves the individual transacting with their environment.

Both the P-E fit model and the transactional stress model share similar elements in that they both focus on the relationship between the individual and the environment as a whole, not as separate parts. Noted by Cooper *et al.*(2001), most models of stress integrate this
concept, either implicitly or explicitly.

Often the language used to describe the stress process and stress-related variables is confusing. As noted in Beehr (1998), this is primarily due to inconsistencies from professionals working in this field and the use of stress terms by the greater public. Following the transactional model of stress and the terminology suggested by Beehr (1998), this paper adopts the following definitions for the terms stressor, strain and stress:

- **Stressors** are the events or conditions encountered by an individual;
- **Strains** are psychological (health), physical (health) and behavioral responses the individual has to the stressor;
- **Stress** is the overall transactional process, the situation where stressors and strains are present.

3 METHODS FOR DATA COLLECTION AND ANALYSIS

The study focused on the mining and banking industries in the Tarkwa mining area in the Western Region of Ghana. For the mining industry, the study focused on only permanent staff of Gold Fields Ghana, Tarkwa Mine and AngloGold Ashanti, Iduapriem Mine, the two very active gold mines in the heart of Tarkwa, the Municipal Capital. For the banking industry, the study included contract staff as well as permanent employees of the following banks: Standard Chartered Bank Ghana Limited, Guaranty Trust Bank Limited, Barclays Bank Ghana Limited, Cal Bank Ghana Limited, Intercontinental Bank Ghana Limited, Stanbic Bank Ghana Limited, Merchant Bank Ghana Limited, Fidelity Bank and Ecobank Ghana Limited. As explained earlier, the Tarkwa mining area is the hub of gold mining in Ghana and the number of banks is on a rapid ascendancy making the municipality the ideal area for the study.

A simple random sampling technique was used to select the sample size of 106 from a population of about 3600 for the study. It must be noted that several factors were considered by the researchers before arriving at the sample size. One of the factors which is consistent with the sample size is the argument raised by Mason et al. (1999) and Walliman (2001) that, when the population is homogenous, a large sample may not be necessary, hence the choice of a relatively small sample size to represent the population.

The main instrument for the data collection was the administration of questionnaire which was supplemented with interviews where necessary. The scale of sources of stress in the organizational environment, constructed and validated by Ferreira et al. (2008), composed of 35 items was modified into 25 items and was answered on six point scale, varying from “very low” (1) to “very high” (6). The 25 items were further categorized into four blocks namely: personality, task design, working environment and social balance. A pilot study of 12 questionnaires was conducted for the two industries of study. This was done to verify that the questions were understood clearly and that responses would be consistent with the purpose of the study. Thus, the results of the pilot study were used to improve the reliability and validity of the questionnaire. The modifications were minor and were based on suggestions from workers in the industries surveyed. The data was analyzed using Statistical Program for Social Sciences (SPSS) version 17.0 software.

4 RESULTS AND DISCUSSIONS

Participants in this study included 106 workers, divided into 62 mine workers (58.5%) and 44 bank employees (41.5%). Among the respondents, 78.65% were males and 21.35% were females, with predominant ages between 29 - 39 years. Altogether, about 80% of the respondents had over 2 years working experience. All the respondents had some form of formal education with over 80% having gone through tertiary education. The distribution of the socio-demographic indicators of respondents is shown in Table 1.

Analysis of results from the mining industry indicates that the reliability coefficient of 0.783 for “Personality” is the highest whilst “Working Environment” is perceived as the lowest with
reliability coefficient of 0.550 (see Table 2). From Figs. 1 – 7, “Drive” (the desire to succeed and achieve results) is the main source of stress as indicated by the high frequency for the very high category of response (Fig. 5). It could therefore be inferred that the desire to succeed and achieve results put much stress on mining workers within the Tarkwa mining area.

Analysis of results from the banking industry indicates that the reliability coefficient of 0.729 for “Social Balance” is the highest whilst “Working Environment” follows closely with 0.708. Task design, with a reliability coefficient of 0.584 is perceived as the least block source of stress. From Figs. 8 – 13, “Social Responsibility” (How much they think society demands of them?) is the main source of stress as indicated by the high frequency for the very high category of response (Fig. 9). It could therefore be inferred that societal demand on bank workers within the Tarkwa mining area put much stress on this category of workers.

In general, the reliability coefficients for the four blocks of stressors namely: personality, task design, working environment and social balance range between 0.747 and 0.619 for the combined mining and banking workers (Table 2). According to George and Mallery (2003), this fair range of values can be inferred that workers in the two industries in the study area have a fairly low awareness levels of stressors in their various work environments.

5 CONCLUSIONS

This study was undertaken to investigate the sources and levels of occupational stress experienced by employees of mining and banking industries in the Tarkwa mining area of the Western Region of Ghana. Specifically, this paper sought answers to the following questions:

- What are the most common occupational block of stressors experienced by employees of the banking and mining industries in the Tarkwa mining area?
- What are the levels of occupational stress within the major blocks of stressors experienced by employees of these two industries in the Tarkwa mining area?
- What are the awareness levels of occupational stressors among these employees?

It was identified that among employees of the mining industry personality was the major block of stress. Under this block, drive was identified as being the most common stressor.

Data from employees of the banking industry also identified social balance as the major block of occupational stressor. Further analysis revealed that, their social responsibility which is under the social balance block was the highest source of stress among this group of workers.

The reliability coefficients values for the four major blocks of stressors discussed (i.e. personality, task design, working environment and social balance) for the combined groups of mine and bank workers were at best fair, indicating a generally low level of awareness among these workers.

6 RECOMMENDATIONS

From the conclusions of the study, the following are recommended:

- With regards to drive, a clearly defined promotional system based on a well structured appraisal and reward system free from personality influences must be designed and communicated to all employees, particularly with regards to the mining industry. This will ensure that employees know what is required of them e.g. number of years it takes to move up a notch or pay grade as well as their expected output on the job.
With regards to the issue of social responsibility, the individual needs to let society know how much he/she is really worth as society assumes that all bank workers are highly remunerated.

To address the low level of awareness:

- A comprehensive stress management program with both organizational and individual level interventions covering issues like counseling and awareness are options for management and employees of these industries to employ to effectively manage stress in order to maintain high productivity and performance.
- Individual employees need to understand the dangers of work related stress as this among other things may convince employees to adopt a healthy work/social life balance.

REFERENCES


Table 1 Distribution of Socio-demographic Indicators

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<tr>
<th>Characteristic</th>
<th>Mining (%)</th>
<th>Banking (%)</th>
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Table 2 Distribution of Reliability Coefficients

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<td>No. of Items</td>
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<td>0.747</td>
<td>7</td>
<td>0.619</td>
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Fig. 1  Graph of Perceived State of Mind of Mine Workers

Fig. 2  Graph of Perceived Resilience Level of Mine Workers

Fig. 3  Graph of Perceived Confidence Level of Mine Workers
Fig. 4 Graph of Perceived Physical Symptoms Level of Mine Workers

Fig. 5 Graph of Perceived Drive Level of Mine Workers

Fig. 6 Graph of Perceived Patience-Impatience Level of Mine Workers
Fig. 7 Graph of Perceived Problem Focus Level of Mine Workers

Fig. 8 Graph of Perceived Relationships Level of Bank Workers

Fig. 9 Graph of Perceived Social Responsibility Level of Bank Workers
Fig. 10 Graph of Perceived Home-Work Balance Level of Bank Workers

Fig. 11 Bar Graph of Perceived Control Level of Bank Workers

Fig. 12 Graph of Perceived Life-Work Balance Level of Bank Workers
Fig. 13 Graph of Perceived Social Support Level of Bank Workers