

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND
TECHNOLOGY, KUMASI, GHANA**

Evaluation of construction worker satisfaction with site welfare provisions

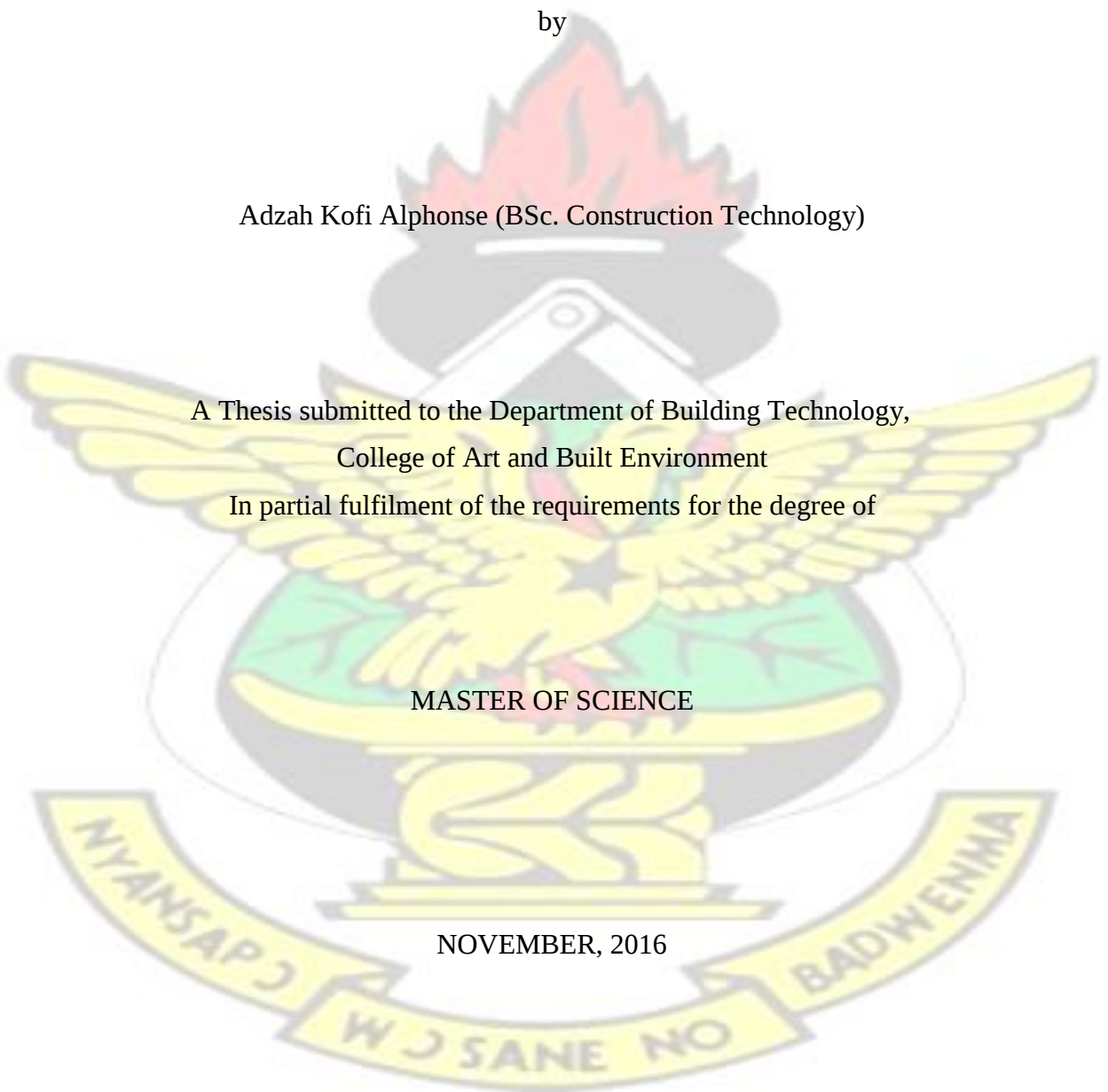
by

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A Thesis submitted to the Department of Building Technology,
College of Art and Built Environment
In partial fulfilment of the requirements for the degree of

MASTER OF SCIENCE

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CERTIFICATION

I hereby declare that this submission is my own work towards the MSc construction management and that, to the best of my knowledge, it contains no material previously published by another person, nor material which has been accepted for the award of any other degree of the University, except where due acknowledgment has been made in the text.

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ABSTRACT

Adequate provision of welfare facilities becomes a critical factor for accepting and/or keeping the jobs. It also determines the level of worker's motivation, performance and productivity. Thus, the study aimed at evaluating worker satisfaction with the site welfare conditions towards making recommendations to improve the situation. The study was carried out along the tenets of a preliminary literature review and followed by a survey using a structured questionnaire. Out of the 56 questionnaires administered, 50 were completed and returned. The analysis was consequently grounded on this response rate. The data collected were analyzed using Mean Score Ranking and Relative Importance Index (RII). Key findings in this research indicates that, Sanitary facilities (wc toilets, privies, chemical closet), dust bins, drinking water, changing room and lockers, soap, first aid box(es) and worker accommodation, were available and accessible to majority of the respondents. About two-thirds (2/3) of the workers attested to the fact that the condition of these facilities on site is highly satisfactory. Again from the survey, clean drinking water, First-aid facilities were readily available with required and adequate content. Management involvement in safety, clean and hygienic environment etc. greatly influences worker satisfaction on construction site. This influences construction worker performance (either increases or decreases performance) and make them feel content while they work. It is anticipated that the recommendations made in this study would establish a strong ground for the provision of welfare facilities by construction companies to ensure the safe and wellbeing of their workforce.

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DEDICATION

This project is dedicated to family members, Ghana Airforce, friends and love ones

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF STUDY

According to Rameezdeen (2005), the construction industry is recognized as the backbone of every economy. Ofori (2012), attested to a similar fact and he stated that, the construction industry is a part of every country's economy including Ghana's. It creates revenue for the Government and also generates employment. It also improves socio-economic development by constructing facilities and creation of jobs. The Ghanaian construction industry provides an average of 10.5% of the Gross Domestic Product (GDP) and provides job for about 6% of the population who are economically active (Ghana Statistical Services, 2007). According to Agyakwa-Baah (2007), the Ghanaian construction industry is directly linked to the Ghanaian economy because the Government of Ghana is the biggest client in the industry. The construction industry in Ghana has realized steady growth over recent years and is clearly depicted in the domestic construction sector. This sector happens to be among the quickest developing sector with about 7-8% average growth per year (Agyakwa-Baah, 2007). To be able to achieve an even faster growth and development, there must be an improvement in site welfare conditions and consequently affects worker satisfaction.

Kumar and Kumar (2012) identified a number of challenges in the construction industry and most of them were linked to the unorganized characteristics of the industry. Also Chandrasekar (2011) identified that, the nature of the construction sites and workplaces is unsafe and unhealthy. In view of this, Anumba and Bishop (1997), stated that, effective site layout is an important factor in terms of improving site health and safety. Construction

site layout includes the designation of temporary facility locations, resources and machinery (Chau and Anson, 2002). Marquardt et al. (2002) combined the definition of site layout condition with construction worker satisfaction. The author defined it as how a construction worker feels with regards to the physical arrangement of the workplace. Construction workers have requirements and expectations and if these requirements are met, they are satisfied (Leblebici, 2012). Also, Cotton et al. (2005) stipulated that, an increase in a construction worker satisfaction has a major impact on the construction industry's productivity. A well-arranged site has a huge impact on construction success factors like cost, time, operational efficiency and construction quality (Chau and Anson, 2002). This assertion was further supported by Grawitch et al. (2006) who postulated that, improved site layout conditions has proved to be more costeffective and sustainable which supports collaborative work style.

Many Human resource experts in various organizations and their employers may decide to give higher salaries and incentives to their workers in order to retain their services but research has shown that, effective and high quality site layout conditions also have a strong pull on retaining employees. For example, research conducted by Anumba and Bishop (1997), Leblebic (2012) and Lec (2013) all pointed out the fact that quality site layout conditions improve worker satisfaction and the ability to retain workers and thus is becoming one of the popular research areas in recent years. Unfortunately, in Ghana, little research has been conducted on the link between work satisfaction and site layout conditions.

With respect to this background, this research is being conducted to ascertain worker satisfaction with site welfare conditions and make recommendations to improve the

situation of worker satisfaction.

1.2 STATEMENT OF THE PROBLEM

A major challenge in the construction industry is worker dissatisfaction and operational inefficiency which arise as a result of poor site layout conditions which leads to extreme immobility on site for operatives and equipment (Ning et al., 2012). Research conducted by Pech and Slade (2006) identified that, the reluctance of worker engagement in site activities due to poor site conditions is escalating and therefore it has become more significant to improve conditions on the site which has direct effect on workforce. The authors identified various symptoms with indicated reluctance of worker engagement in site activities like lack of interest, distraction, high absence as well as poor decisions. Leblebici (2012), confirmed the above assertion by postulating that, poor site conditions is a major cause of worker disengagement and also construction operatives have expectations and these operatives are happy if these expectations are met.

According to Cotton et al. (2005), an improved construction worker satisfaction is a major factor to sustainable productivity in the construction industry. Worker satisfaction is an imperative factor in terms of retaining the services of workers and also influencing their productivity on site. Therefore, worker satisfaction with reference to site layout conditions has attracted much attention by researchers and is becoming one of popular areas of study in recent years (Lee, 2013). Nevertheless, not much attention has been paid to this area with regards to the Ghanaian construction working environment despite its huge potential significance to the industry. Therefore, with regards to its immense benefits to the industry, there is the need to delve into construction worker and operatives satisfaction with site

welfare conditions in Ghana so as to realize the full potential of various operatives in the industry.

1.3 AIM AND OBJECTIVES OF THE STUDY

1.3.1 Aim

The aim of this research is to ascertain worker satisfaction with the site welfare conditions towards making recommendations to improve the situation.

1.3.2 Objectives

1. To identify the minimum requirements for welfare provisions on construction sites;
2. To identify the adequacy of welfare provisions on sites;
3. To identify the factors that influences worker satisfaction with site welfare provisions;
and
4. To identify strategies to improve site welfare provisions on construction sites.

1.4 RESEARCH QUESTIONS

The various questions that this research seeks to answer includes the following;

1. What are the minimum requirements for welfare provisions on construction sites?
2. What are the adequacy of welfare provisions on construction sites?
3. What are the factors that influences worker satisfaction with site welfare conditions?
4. What strategies can be adopted towards improving site welfare provisions?

1.5 SIGNIFICANCE OF STUDY

The construction industry is one of the most significant aspects of the every economy. However, with the scientific and technological advancement in the industry, it is still popular will worker dissatisfaction and decrease in construction productivity with can further lead to delays in construction activities (Leblebici, 2012). This research will therefore create awareness among construction managers and supervisors on the significance of quality site welfare provision especially on worker satisfaction. This will help decrease the challenges associated with improper site welfare provisions.

This study will also add to the body of knowledge available on site layout conditions and its impact on worker satisfaction and productivity. This research will also create the avenue for various stakeholders in the construction industry especially construction managers and supervisors in making informed decisions on the provision of quality site welfare conditions for their operatives.

1.6 METHODOLOGY

This research adopts both qualitative and quantitative research methodologies. This research method was adopted in order to gather information from various construction site personnel like site supervisors and operatives by issuing questionnaires and conduction interviews. The quantitative research was adopted to help identify the factors that influences construction worker satisfaction with site welfare conditions in Ghana and this will lead to further interviews with site agents, clerk of work in explaining and clarifying any information needed. Information were gathered from D1 and D2

construction firms in the Accra Metropolis. Inferential and descriptive statistical method were used to analyze the collected data. Details of the methodology is described further in chapter three (3) of this study.

1.7 SCOPE

This study was restricted to construction firms with DI and D2 certificates from MWRW&H in the Accra Metropolis. These categories of construction firms were chosen because they are well equipped with various equipment and with various construction site activities on-going and therefore will be well vexed in this area of study to provide the needed information.

The study was executed with the Accra Metropolis because of the concentration of wide range of experienced construction firms in the metropolis. This will help bring to the study more diverse and accurate responses to improve the authenticity of the outcome of this research. Also, Accra metropolis was chosen due to its proximity to the researcher and therefore reduce the problems that the researchers face in terms of data collection.

1.8 STRUCTURE OF THE REPORT

This research was categorized into five independent but interrelated chapters and are discussed below.

Chapter one entailed the introduction which was sub-divided into seven sections: background of study, statement of the problem, aim and objectives, research questions, significance of the study and scope of the study. Chapter tow entailed the literature review followed by the chapter three which consisted of the methodological approaches to the research which included the research design, ample and sampling procedure and data collection process. Chapter four consisted of the data analysis and discussion of results.

The chapter was chapter five which presented the summary of the major findings, conclusion and recommendation.

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CHAPTER TWO

LITERATURE REVIEW

2.1 GENERAL OVERVIEW

The extent or level of workmen performance is directly affected by the quality of the environment in the workplace. Thus a quality workplace environment is the one that

stimulates workmen and operatives to produce better results. It can also be said that, workplace conditions is a fundamental source of positively influencing workmen commitment. According to Roelofsen (2002), improving conditions at workplace minimizes restrictions and increase mobility of operatives thereby maximizing productivity. A number of researchers have developed a link between operative's satisfactions and site conditions optimization. For example, Leblebici (2012), stipulated that, workplace contentment is directly connected with job satisfaction. Also, Weiss, (1999) argued that, the provision of insufficient equipment as well as unreceptive conditions of work has been revealed to effect employee commitment together with the intent to remain in the organization. This chapter deals with the concept of site layout conditions and welfare and its connection with work satisfaction. The various objective of the study as stipulated in section 1.3.2 is further reviewed to enhance the understanding of the concept and enhance in making decisions.

2.2 THE CONSTRUCTION SITE LAYOUT

Many researchers believe that, the working environment of employees affects their morale, willingness to engage in site activities and productivity (Chandrasekar, 2011; Kim and Dear, 2013). The working environment surrounding construction work personnel have a significant impact on how these employees approach site activities.

Quality working environment promotes job satisfaction and efficient team collaboration at the work place. The main aim site layout is to identify the required temporary facilities, its size and shape and also stipulates an appropriate location for it placement (Sanad et al., 2008). The layout sites is the same for every project and these variations may include availability and placement of maintenance shops, warehouses, construction equipment,

site offices, batching plants, tool trailers and parking lots. A good site layout is the one that finds the most appropriate location for these temporary facilities to optimize workmen efficiency. It has already been established that construction site layout is a very significant factor in terms of operation's safety as well as productivity especially on sites with limited space. However, at various intervals of the construction process, site layout ought to be changed extensively to accommodate working requirements. As contrasting to bearing in mind solely concerns of productivity when planning site (Hammd et al., 2015).

The construction project can be viewed as a camp and must be molded in a way that work progress smoothly with minimum interruptions. This arrangement is referred to as site layout (Kumar and Bansal, 1996). The arrangement of construction sites considers safety and productivity variables (Hammd et al., 2015). With regards to the safety variable, the various considerations made includes the best location for temporary amenities on site, the correct safety zones around the building space as well as using sections of the available space as temporary facilities to release crowding on constrained sites. According to Tommelein (1992), it is mostly impossible to quantify or attach monetary loss or saved to the way a site is laid out. It must be noted that a substantial quantum of factors are affected by the nature of the site layout. This may include construction program of works, mobilization and demobilization of materials and construction methods. It is therefore very imperative to carefully plan the layout of the site whiles considering all these factors and how they are affect. Therefore, site layout planning is regarded as a very complex activity which takes lots of time and requires experienced construction personnel in handling such issues (Tommelein, 1992).

2.2.1 The nature of site welfare conditions on construction sites in Ghana

The construction industry in Ghana is recognized as labour intensive and therefore a lot of thoughts must go into providing effective welfare facilities for these operatives. One of the main feature of the construction industry is the continuous alteration of the place of work. Thus, circumstances on site as well as differing nature of work being undertaken by many workers simultaneously (Dadzie, 2013). Just like other developing countries, the building industry of Ghana, depends on labour concentrated methods. Many infrastructural projects such as hospitals, small dams, school, bridges, feeder roads, stadiums, together with factories are built employing intensive labour (Blacker, 1995). There a number of reported cases of accidents in the Ghanaian construction industry. According to Danso (2005), 902 accident cases were reported in the Ghanaian construction industry. Laryea and Mensah (2010) asserted that, health and safety on Ghanaian building sites is poor. Till now, ministries of government have had straight charge over goings-on of building industries in Ghana and have had whole control of enactment of policies of the state in the building sector (Kheni et al., 2008). Mostly, advancing physically by the establishment, like hospitals, schools, roads, churches as well as housing are generally executed, when the needed divisions certify that the project meets the requirements in the building ethics of Ghana (Danso, 2012). The Labor and the Factory inspection Department handles matters related with labor as well as other problems that relate to engagement and building sites accidents as well as other units over the country. The Labour Act explains Health as a total state of the mind and the body of people from disease ensuing from procedures and materials utilized in the worksite, whereas safety can be defined as the act of protecting workmen from physical harm. Thus, it stresses that, —it is the employer duty to make sure that all workers employed by him or her work under

acceptable, healthy and safe environments. —The employer must therefore make provisions keep the workplace and plants in such a manner that safety is ensured in the workplace and reduction of risk to the health of every worker as well as operatives (Danso, 2012). The employer must also make available the required knowledge notification, training and supervision.

Legally, the employers will not be responsible for workmen injury who violates subsection (3) of the Act as a result of non-compliance by the employee. An employer who with no cautious reason, miscarries to release any of the duties under subsection (1) or (2) obligars a crime. Thus he is responsible on immediate principle to a fine not more the one thousand (1,000) units or to detention for term not more than three years (Dadzie, 2013). Factories, offices and shop act of 1970, was planned to give precautionary actions to safety and health in general. Every single employer or builder will meet regulations planned to safeguard the health, safety as well as the welfare of every employee on the building site (Dadzie, 2013). Therefore, it organizes for satisfactory as well as appropriate lodgings in the form of canteen. The builder must provide this and must comprise seats and tables for taking meals, as well as amenities for water heating. Where there are many employees on a site, adequate facilities for eating and drinking must be provided. The act clearly emphasizes that, employers must make available first-aid room accurately constructed and available to every employee during working hours (Kheni, 2008)

Some construction workmen find their work hostile and work only since they have to. Satisfaction in the job shows how people like their jobs. It is imperative to identify the satisfaction level at work for numerous motives as well as the outcomes for the satisfaction on the job studies influence both the organization as well as the workers. From the

employee's perspective, it is apparent that people want to be equally treated. If employees feel cherished then fulfilled at work, it may well be a replication of a better treatment. From the organization's perspective, better satisfaction on the job can result to workers improving performance which marks the fallouts of the firm. Worker satisfaction is usually well thought-out as the engine of the worker retaining as well as the productivity of the worker. Contented workers are a condition for responsiveness, increasing productivity, quality, as well as customer service (Kaplan et al., 1996).

2.3 WELFARE PROVISIONS ON CONSTRUCTION SITE

2.3.1 Locker room

Every construction site must have a locker room for storing cloths. There must be separate changing places for males and females. For sites that are smaller, the site office may well be an appropriate area for storage if it is kept protected. Where there is a chance of protecting site clothing soiling everyday clothing, they must be kept separately (HSE, 2010). There should be arrangements to allow wet clothing to be dried. As a general rule, clothing should never be placed directly on heaters due to the risk of fire.

Electrical heaters should be correctly ventilated as well as fitted with a high temperature cut-out device, when they are employed (HSE, 2010).

2.3.2 Toilets

As far as is realistically possible, flushing toilets and running water that is linked to the water mains together with drainage systems need to be provided. Chemical toilets that are portable are suitable unless other satisfactory provisions are more economical (HSE, 2010). Toilet facilities must always be kept in good conditions with regular cleanings

based on regularity of use. Adequate number of toilet facilities should be provided and it should be based on the number of employees on site and sometimes the kind of facilities provided. The BS6465- 1:2006 recommends a ratio of 1:7.

2.3.3 Rest facilities

Rest facilities must provide shelter from wind as well as rain. Areas designated for resting should not be used for storing materials and there should be an adequate provision of facilities to improve the conditions of the resting place.

2.4 FACTORS THAT INFLUENCES WORKER SATISFACTION WITH SITE WELFARE PROVISIONS

The construction industry in Ghana is recognized as labour intensive and therefore a lot of thoughts must go into providing effective welfare facilities for these operatives. One of the main feature of the construction industry is the continuous alteration of the place of work. Thus, circumstances on site as well as differing nature of work being undertaken by many workers simultaneously (Dadzie, 2013).

Many Human resource experts in various organizations and their employers may decide to give higher salaries and incentives to their workers in order to retain their services but research has shown that, effective and high quality site layout conditions also have a strong pull on retaining employees. For example, research conducted by Anumba and Bishop (1997), Leblebic (2012) and Lec (2013) all pointed out the fact that quality site layout conditions improve worker satisfaction and the ability to retain workers and thus is becoming one of the popular research areas in recent years. Below are a list of factors that influences worker satisfaction with site welfare provisions.

2.4.1 Organizational support

Eisenberger et al. (1990) suggested that, once workers start perceiving the values of their organization and become committed to these values, an obligation is developed and thus focuses on imminent reciprocity intended to benefit the organization. These advantageous undertakings have been revealed to embrace suggestion making for the improvement of the organization, and participating in organizational citizenship conducts. A study conducted by Rundmo (1994) in the setting of the Norwegian offshore industry shows that employee/worker assessment of the collective support render to these workers by managers and supervisors form the second most significant factor considering employees' satisfaction on safety and eventuality procedures at the workplace.

2.4.2 Trust

Interpersonal trust concerning employees and supervisors has been considered to be imperative in satisfying the employee (Argyris, 1964). From research, it has been indicated that substantial correlations alongside many organizational variables, like problem solving, performance, quality of communication, co-operation, and citizenship behaviour (O'Dea and Flin, 2003). Furthermore, trust minimizes the need for official contracts and also limits unscrupulous actions (Whitener (1998). A study conducted by Kivimaki et al. (1995) which involved (428) nuclear power plant employees in Finland which involved a meaningful route of impact concerning trust in a firm's management and employees' recognition for goals of the organization and the perceived nuclear risks and acceptance of organizational goals. The study concluded that, lack of recognition for organizational goals on employees' part to be a probable reflection of employees' subjective assessment of a scanty balance between efficiency and welfare on top management's part.

2.4.3 Management leadership Style

The leadership style of management also influence employee satisfaction. According to Lok and Crawford, (2001) leadership style and culture have a major influence on job satisfaction and organizational commitment. Most workmen may be dissatisfied due to the adoption of unsuitable and inappropriate leadership styles (ibid). Good leadership style can affect the efficiency and output of operatives as identified by various researchers like Nguyen et al. (2004). Workmen who are satisfied with their job work harder as compared to others (Salajeghe and Habibi, 2015).

2.4.4 Management Commitment

There is a connection of workmen satisfaction and management commitment. This was identified by Cohen et al. (1975) and they stipulated that commitment on the side of the management body to workmen satisfaction was better in highly performing firms than their lower counterparts.

2.4.5 Management Involvement in Safety

It is a good practice for management to take part in safety activities as it stimulates safety operations. Smith et al. (1978) realized that management participation in safety activities was connected to good safety practices on-site. Such undertakings involved open and informal communications between workers and management, personal inspections of work area and finally regular contacts between supervisors, workers and management (O'Dea nad Flin, 2003).

2.4.6 Decentralization of power

Goodman (1897) conducted a research on coal mines in USA and upon that, it was found out that reorganization of work section into an independent working group gave rise to an

improvement in terms of employee's knowledge on safety practices and procedures, in addition to beneficial alteration in level of responsibility assumed by individuals, communication, and interaction.

Braithwait (1985) suggested the decentralization of decisions on safety.

2.4.7 Labour management relations

According to O'Dea and Flin (2003), research evidence suggests that there is substantial association between worker satisfaction and favorable labour management relations. It is probable that good labour relations lead to a more satisfied and motivated employee. Braithwait (1985) study identified that high quality labour relations and positive climate are linked to an enhanced employee satisfaction. Organizations with competent labour management relations have this in common: informal contact with upper level management, a fair percentage of time spent underground by management, an open door policy by management etc.

2.4.8 Humanistic management practices

The adoption of humanistic method in handling construction workmen is also a major factor in improving workmen satisfaction (Cohen et al., 1975). Humanistic method involves management showing appreciation for good work done and the instigation of good relation with workers. Smith et al, (1978) realized that, the management in such firms have interest in the affairs of their workers and start treating them with due respect in relation to their work and exhibit greater concern about their workers personally.

2.4.9 Other factors that influences worker satisfaction with site welfare provisions

Sims et al. (1976) identified effective communication and cooperation between workmen and management as a factor that influences worker satisfaction. Mengue and Bhutan

(2004) had similar assertion and so did Kraimer et al. (2001). Job feedback also affects worker satisfaction and also develop good cordial relationship with management.

2.5 STRATEGIES IN IMPROVING SITE WELFARE PROVISIONS

Basically, effective site layout planning generate condition that will maximize efficiency and minimize risks (Gibb and Knobbs, 1995). A number of considerations goes into the planning of site layout and they may include materials storage facilities, traffic route, site offices and amenities etc (Anumba and Bishop 1997). A well-planned and quality site-layout have a very high probability of ensuring site safety and improving workmen satisfaction. Thus if project managers who are unable to provide high level of safety through quality site layout can lead to decrease in workmen productivity. In view of this a number of factors have being discussed below on factors that will improve site conditions.

2.5.1 Effective planning

Site planning must be done during the design stage to foresee and correct conditions that may not be favorable on construction sites. Planning of site layout is required for all construction projects as every site layout is unique and it also depends on site orientation (Tam et al., 2002).

2.5.2 Enactment of strict safety rules and procedures

Most workmen does not show or pay must attention to safety rules and procedures as implemented by the organization. Therefore, rules and procedures enacted by these organizations must be made strict and any breach by workmen punishable (Cox and Cheyne, 2000). Most problems encountered in on-site safety can be related to nonrecognition of strict procedures to workmen safety procedures (Hood, 1995).

2.5.3 Involvement of management

Management on site also have a role to play in ensuring workmen safety. Management has to be committed to safety procedures enacted by them and ensure that they follow it strictly (Zohar, 1980). When operatives realize that management does not care much about their personal safety, they all feel reluctant to cooperate (Langford et al. 2000).

2.5.4 Effective communication

According to Baxendale and Jones (2000), employers and employees in an organization are expected to employ various forms of communication techniques in other to promote welfare conditions on site. Communication is an important tool in reporting incidents on sites and how to improve on safe conditions on site (Simon and Piquard 1991). Thus, feedback from workmen is also very important in making decisions concerning the safety of workmen.

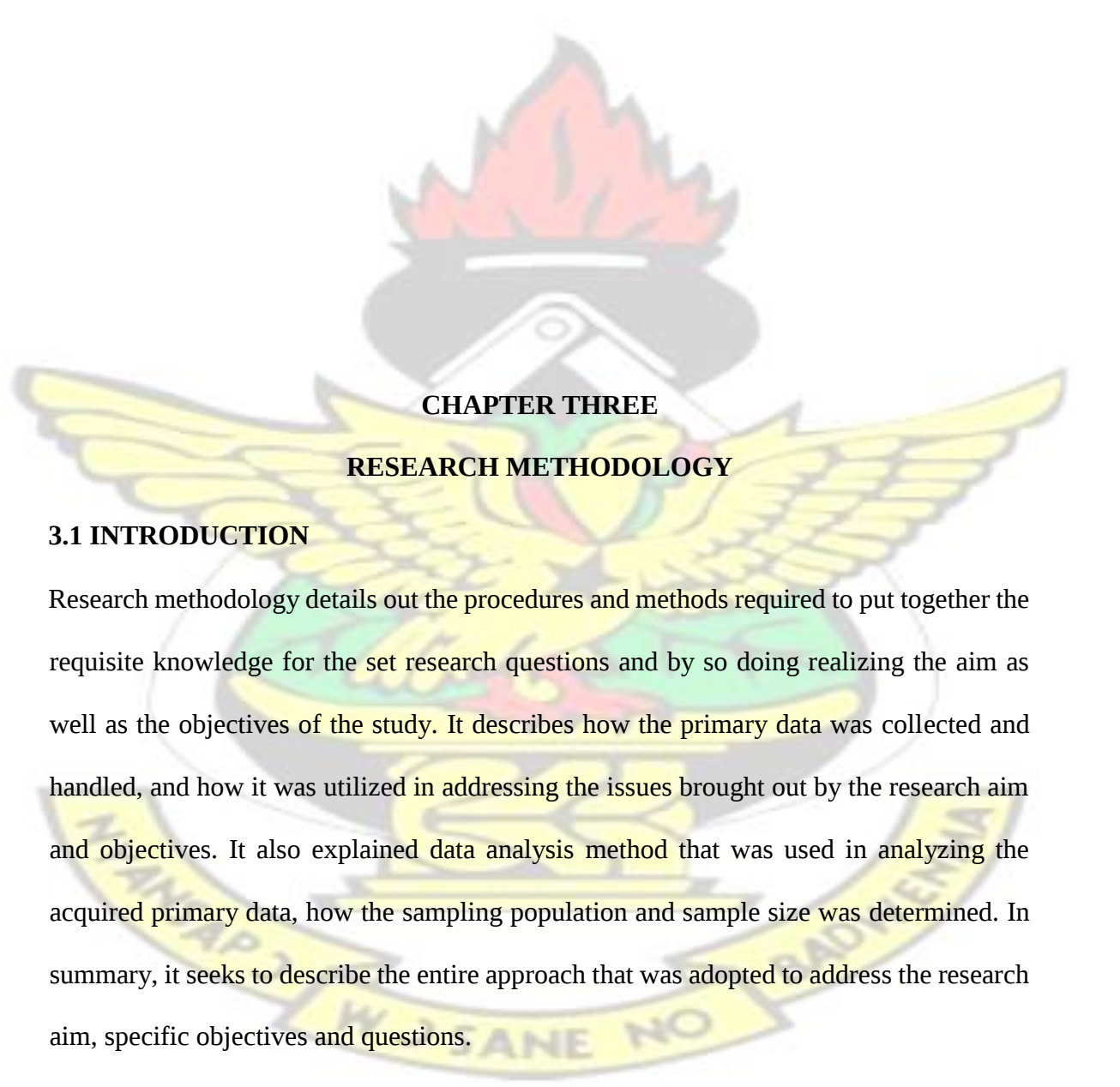
2.5.5 Supervising workmen

Management also have another role to play in safety conditions on site and safety of their workmen by supervising their activities on site. They are also to ensure that, the safety procedures developed by management is followed by operatives strict as the actual success of safety rules is not its enactment but its implementation by operatives on site (Agrilla, 1999). The more relationship-oriented management are, the more probability of success of workmen performing safely.

2.5.6 Reduction of work pressure

Reduction of work pressure is a strategy that was postulated by Glendon et al. (1994) and it was basically about the extent to which employees are pressured to complete a particular task. It has been identified in Hong Kong through research that pressure on construction

schedule affects a project negatively as it increases the probability of unsafe activities and occurrence of accidents (Ahmed et al., 1999). According to Langford et al. (2000), construction managers and supervisors are sometimes forced to turn a blind-eye to unhealthy and unsafe activities due to work pressure.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Research methodology details out the procedures and methods required to put together the requisite knowledge for the set research questions and by so doing realizing the aim as well as the objectives of the study. It describes how the primary data was collected and handled, and how it was utilized in addressing the issues brought out by the research aim and objectives. It also explained data analysis method that was used in analyzing the acquired primary data, how the sampling population and sample size was determined. In summary, it seeks to describe the entire approach that was adopted to address the research aim, specific objectives and questions.

3.2 RESEARCH DESIGN

This research adopts both qualitative and quantitative research approach in order to meet the various objectives in chapter one. The qualitative approach was adopted to identify if welfare facilities on site are adequate and up to standard. The quantitative method was also adopted to gather data and study relationships between facts and theories. The research adopts a questionnaire survey in the quest to explore various welfare conditions on site and how they affect workmen satisfaction. The questionnaire was designed for construction firms and other personnel on site who has influence on welfare conditions on construction sites in the Accra metropolis.

3.3 PROFILE OF THE SETTING

The selected setting within which the study was conducted was Accra Metropolitan Assembly (AMA) in the Greater Accra region of Ghana. Geographically, AMA, with a land surface area of approximately 231km², has a total population of 1,848, 614, population density of 69.3 persons per hectare and growth rate of 3.36% (Ghana Statistical Service, 2012). Accra is the most economically active city in Ghana, where lots of local and international construction companies are striving.

The Accra Metropolis was selected because of its proximity to the researcher, and has numerous construction companies, including construction logistics suppliers and those within the supply chain system; all located in several parts of the metropolis. The city is bursting with both completed and on-going constructional activities which involve several building contractors, capable of providing the necessary information for the study.

3.3 POPULATION, SAMPLE, AND SAMPLING TECHNIQUE

The population of the study is personnel working in construction companies with classification of D1 and D2 in the Accra Metropolis in the Greater Accra Region of Ghana. The number of registered D1 and D2 building contractors based on the Ministry of Works and Housing in the Accra Metropolis is 128 as at 2014 in the Greater Accra Region. This is as a result of the fact that, these classification of companies are well established and demonstrate satisfactory site layout conditions as well as safety records in the Ghanaian construction industry. Site supervisors and site personnel, including site agents, clerk of work and both skilled as well as unskilled workers gave relevant information to help carry out the research.

In order to obtain a sample, the Kish Formula was used to determine the sample size.

Kish Formula states that:

$$n = \frac{n'}{\left(1 + \frac{n'}{N}\right)}$$

$$n' = \frac{s^2}{v^2}$$

Where v = the standard error of sampling distribution

$= 0.05$ s^2 = the maximum standard deviation of the

population Total error = 0.10 at a confidence interval

of 95%

$$s^2 = p(1 - p) \text{ where } p = 0.50$$

$= 0.50(1 - 0.50)$ p = the proportion of the population elements that belong to the defined region.

$$= 0.25 \quad n' = \frac{s^2}{v^2}$$

$$= \frac{0.25}{0.05^2} = 100$$

$$N = 128$$

Therefore

$$n = \frac{100}{\left(1 + \frac{100}{128}\right)} = \frac{100}{(1 + 1.205)} = 56.15 \approx 56$$

This sample size formula provided the minimum number of questionnaires that were to be administered. The sample size was found to be fifty-six (56) D1 and D2 construction firms. Site supervisors and site personnel, including site agents, clerk of work and both skilled as well as unskilled workers gave relevant information to help carry out the research.

3.4 DATA COLLECTION AND INSTRUMENTATION

This section talks about how data was collected from various respondents.

3.4.1 Questionnaire Design and Development

In order to achieve the aims and objectives of the research an elaborate questionnaire was developed based on the stated objectives of the research. The questionnaire used in this research (Appendix A), consist of two parts, with the first part considering the background of the person answering the questionnaire. Research has shown that the demographic variables are very significant in quantitative studies. The part B of the questionnaire was developed in accordance to the objectives of the study, in relation to the comprehensive literature review conducted on the topic. The opinions and perceptions of the various

construction personnel were collected and scaled with scores ranging from 1-5 popularly called the Likert scale. The scale was used because the data is primarily ordinal where 1= never, 2= rarely 3=neutral, 4= often and 5 = very often. The questions address issues regarding welfare optimization strategies on construction sites.

3.4.2 Instrument Administration

The questionnaires were self-administered by hand delivery by the researcher to personnel in the D1 and D2 construction firms. Some of the questionnaires were retrieved on the spot while the rest were retrieved a week or two after their administration. In all, fifty-six (56) questionnaires were administered and 50 were retrieved representing a response rate of 89.29%.

3.5 DATA PREPARATION AND DATA ANALYTICAL TECHNIQUES

This section talks about how the quantitative and qualitative data collected were processed and analyzed. Oppenheim (2003) prescribed a way of going about analyzing collected data. He proposed that, routines which should be followed has to be set. The individual responses collected were processed and entered into the Statistical Packages for Social Sciences (SPSS). The analytical technique adopted were mean score ranking and the Relative Importance Index (RII) which was used to rank the variables to determine the severity of the variables that influences worker satisfaction with site welfare provisions (Badu et al., 2013). Mean Score Ranking (MSR) was also used to compare sample mean to the known population.

KNUST

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

The chapter highlights the analysis of the data collected from the survey. It discusses respondents' views on the minimum requirements for welfare provisions on construction sites, the adequacy of welfare provisions on sites and the factors that influences worker satisfaction with site welfare provisions. The analysis saw the adoption of simple descriptive statistics, mean score rankings and the Relative Importance Index. The results have been presented in tables and interpreted therefore.

A total of 56 questionnaires were administered, using a purposive sampling technique. Out of the 80 questionnaires distributed, 50 questionnaires representing 89.29% were completed and retrieved. Afterward, considering the deletion of outliers and missing values due to incomplete data, it was noted that all the 50 completed questionnaires were considered valid for the analysis. The analysis of the results is based on these number of

questionnaires retrieved and consequently formed the bases of the findings of this research. The high response rate of 89.29% can be attributed to the fact that questionnaires were administered to respondents personally and successive follow-ups afterwards.

4.2 DESCRIPTIVE ANALYSIS OF DATA (DEMOGRAPHY)

This section discusses basic information and related issues to ascertain the respondents' knowledge about the study in order to provide detailed respondent characteristics. The importance of this section is to establish the reliability or otherwise, and generate confidence in the data collected.

4.2.1 Background and General Information

The overall perception is that females do not usually dominate in the construction industry. And this statement looks partially validated by Table 4.1 which provides the gender of respondents. Roughly, 78% (N = 39) represented males, 22% (N = 11) represented females. Within the construction industry assert the general impression of the dominance of the male specie within the industry. It must however be stated that although gradual development is attained, yet the table below can be said to indicate the degree of effort that still needed to ensure gender balance in the industry.

The age distribution of the respondents shows that, approximately 8%(N = 4) were below 20 years, majority of the respondents were between the age of 21 and 40 years which represents 78% (N = (27+12) = 39). Roughly 14% (N = 7) were above 40 years. It is not surprising as most of the respondents are above 20 years as construction activities requires matured and experience people to undertake construction works.

As indicated in the table below, the education dynamics of all respondents talk to could be described as efficient. From the table 4% (N = 2) of the respondent have completed Junior High School (JHS), 28% (N = 13) have completed Senior High School (SHS), 28% (N = 13) have completed Polytechnic and 44% (N = 22) have completed university. Generally, majority of the respondents had a tertiary qualification level. This was interesting for the study, due to the fact that, with most respondents having high academic standing, it was easy for the respondents to understand the question posed. Thus, could offer relatively informed responses. The results characterize the perception of respondents with a higher degree of intellectual dimensions as well as the quality of the findings. Among the respondents, the bulk of the respondents classified themselves as site agents (site supervisors, engineers etc.) who were approximately 58% (N = 28) whereas 38% (N = 19) were clerk of work (including masons, carpenters, labourers etc.). The remaining 6% (N = 3) represents others in different professional category including contractor, foreman and quantity surveyor. The respondents' survey included major construction professionals who are mostly found on construction site and knows what is actually on the site thus perceived as appropriate, representative and valid for data analysis. Nearly, half of the respondents indicated they have been in the organization for between 6 to 10 years (58%, N = 28); different group of roughly 30% (N = 15) have been in the organization for less than 5 years. 14% of the respondents have a varied experience of more than 11 years (2+5 = 7). Majority of the respondents have been working in the organization for a very long time thus they are much familiar with the welfare provisions always present on the construction site. Hence the length of practice in the organization is crucial for knowledge on the construction site and construction site management in general.

KNUST

Table 4.1: Respondent's contextual information

S.	Variable	Frequency	Percentage (%)	A Gender
S.	Male	39	78%	
	Female	11	22%	
B	Age			
	< 20 years	4	8%	
	21 – 30 years	27	54%	
	31 – 40 years	12	24%	
	> 40 years	7	14%	
C	Educational Level			
	Junior High School (JHS)	2	4%	
	Senior High School (SHS)	13	28%	
	Polytechnic	13	28%	
	University	22	44%	
D	Category of Work			
	Site agent (including site supervisors, engineers, etc.)	28	58%	
	Clerk of work (including masons, carpenters, labourers, etc.)	19	38%	
	Other	3	6%	
E	Years in the Organization			
	Less than 5 years	15	30%	
	6 to 10 years	28	58%	
	11 to 15 years	2	4%	

Source: Field Survey, 2016

4.3 RESPONDENTS SATISFACTION WITH WELFARE PROVISION ON SITE

Welfare provision is extremely significant when it comes to maximizing productivity in the construction industry as Cotton *et al.* (2005) clearly emphasized. Table 4.2 clearly indicate the appraisalment of respondents towards the satisfaction of the welfare provision on site. 26% (N = 13) of the respondents indicated they are strongly satisfied with the available welfare provisions, 42% showed satisfaction of the welfare provision with 30% also indicating partially satisfied welfare provisions and 2% indicating dissatisfied. Clearly, majority of the respondents have indicated that welfare provision on site is adequate.

Table 4.2: Respondents satisfaction with welfare provision on site

	Frequency	Percent (%)
Strongly satisfied	13	26.0%
Satisfied	21	42.0%
Partially satisfied	15	30.0%
Dissatisfied	1	2.0%
Total	50	100.0%

Source: Field Survey, 2016

4.3.1 Welfare Facilities Available and Accessible on Site

Respondents were asked to identify welfare facilities available and accessible on site and from the table below, welfare facilities that are provided on site are Sanitary facilities (wc toilets, privies, chemical closet), dust bins, drinking water, changing room and lockers, soap, first aid box (es) and worker accommodation. These facilities were identified by

respondents to be available on construction site. This shows that, construction site workers are satisfied when these welfare facilities are provided. Studies by Leblebici (2012) reveals that, construction workers have expectations and they are contented when these expectations are met. He further added that, this is a critical factor for accepting and/or keeping the job, and subsequently determines the level of employee's motivation. A number of research foci have provided evidence to support this positive effect (Roelofsen, 2002; Chandrasekar, 2011).

Table 4.3: Welfare facilities available and accessible on site

No. Welfare Facilities				Frequency	Percentage (%)
1.	Sanitary facilities (wc toilets, privies, chemical closet)			46	92%
2.	Dust bins	42	84%		
3.	Drinking water	40	80%		
4.	Changing room and lockers	37	74%		
5.	Soap	36	72%		
6.	First aid box(es)	35	70%		
7.	Worker accommodation	34	68%		
8.	Rest facilities	23	46%		
9.	Canteen	23	46%		
10.	Washing facilities (hand wash basins, shower-bath)			22	44%
11.	Shower-bath	13	26%		
12.	Drying facilities(towers)			11	22%

Source: Field Survey, 2016

4.3.2 Satisfactory Level of the Welfare Facilities

On the quest for determining the level of satisfaction of the welfare facilities, the mean score ranking was used. Respondents were asked to rate them according to their level of satisfaction of the welfare facilities in relation to their purpose on a five-point Likert scale items. The adopted scale read as follows, 5= *very satisfactory*; 4= *satisfactory*; 3

= *moderately satisfactory*; 2 = *less satisfactory*; 1 = *not satisfactory*.

From the table below, drinking water was rated first (1st) with a mean and a standard 4.52 and .677 respectively. The provision of portable drinking water preferably from the mains with the inclusion of individual cups or other drinking vessels at the outlet of the water source unless situations where drinking water is in the form of a water fountain or upward jet (HSE, 2007). This was followed by dustbin with a mean and standard deviation value of 4.50 and .763 respectively. Sanitary facility (WC toilets), soap, worker accommodation, drying facility (towel) followed in that order. Consequently, according to the Office Acts 1970, sufficient number of water flush-type lavatories must be provided for both male and female on the construction site (ILO, 1992), designed and constructed in a way that workers will feel comfortable. Provision of soap for use after visiting the toilets and before eating ensures hygienic living. Thus, workers' health and wellbeing at the workplace is maintained. According to ILO (1992) the provision of accommodation for workers ensures the fulfillment for migrant worker as well internal workers due to the nature or working conditions. This helps to avoid safety hazards and protect workers from diseases and illness resulting from humidity, spread of fungus, proliferation of insects or rodents, as well as maintain a good level of moral (IFC and EBRD, 2009).

Table 4.4: Mean Score Ranking (MSR) of the Satisfactory Level of the Welfare Facilities

No.	Facilities	Mean	Std. Deviation	Ranking
1.	Drinking water	4.52	.677	1 st
2.	Dustbin	4.50	.763	2 nd
3.	Sanitary facility (WC toilets)	4.28	.858	3 rd
4.	Soap	3.98	.979	4 th
5.	Worker accommodation	3.96	.832	5 th
6.	Drying facility (towel)	3.92	.877	6 th
7.	First aid boxes	3.74	.986	7 th
8.	Changing room and locker	3.72	.970	8 th
9.	Canteen	3.70	.931	9 th
10.	Rest facility	3.70	.974	10 th
11.	Washing facility (hand wash basin,)	3.22	.840	11 th

Source: Field Survey, 2016

4.4 FACTORS THAT INFLUENCES CONSTRUCTION WORKER SATISFACTION WITH SITE WELFARE PROVISIONS

Further, it deemed crucial and overbearing to pinpoint the factors that influences construction worker satisfaction with site welfare provision on site. Respondents were asked to indicate the level of influences the factors had on worker satisfaction with the welfare provision on site on a five-point Likert scale items. The adopted scale read as follows, 5= *extremely influential*; 4=*very influential*; 3=*moderately influential*; 2=*slightly influential*; 1= *not at all influential*. In the analysis of the level of influence of the various factors, the Relative Important Index (RII) was used.

From the table below, Clean drinking water was ranked first (1st) with a mean and an RII value of 4.18 and 0.836 respectively. Adequate provision of clean drinking water as HSE (2007) indicated have a high level of influence on worker performance on the construction

site. Separate sanitary facilities for ladies and gents was rated second (2nd) with a mean and an RII value of 3.92 and 0.784 respectively. Consequently, according to the Office Acts 1970, sufficient number water flush-type lavatories must be provided for both male and female on the construction site (ILO, 1992), designed and constructed in a way that workers will feel comfortable. This was closely followed by First-aid facilities readily available with required and adequate content with a mean and an RII value of 3.88 and 0.776 respectively. Management Involvement in Safety was rated fourth (4th) with a mean and an RII value of 3.88 and 0.776 respectively. Smith et al. (1978) and Cohen et al. (1975) observed that management participation in safety activities was connected to good safety operations. Such undertakings involved open and informal communications between workers and management, personal inspections of work area, and finally regular contacts between supervisors, workers and management (O'Dea and Flin, 2003). These researchers concluded that active participation of the management body in such activities motivates both management and employees. According to Simonds and Shafai-Sharai (1977), top construction firms involved human resource and welfare managers in the development and execution of safety programs. Clean and hygienic environment was rated fifth (5th) with a mean and an RII value of 3.84 and 0.768 respectively. Worker satisfaction as Laurie (2005) advocated is affected by the work environment. Additionally, Leblebici (2012) pointed out the fact that, the conditions of the site is a key factor affecting workers engagement, productivity, morale, comfort level etc. both positively and negatively. This was followed by management's commitment, Management's commitment to worker satisfaction is a key construct. The connection to employee satisfaction consequences is strong. Cohen et al. (1975) found out that commitment on the side of the management

body to worker satisfaction was better in the high performance firms than the low productive firms. In the productive firms, commitment was expressed through the allocation of welfare provisions and extra active participation by management in programs on safety issues. In effect, all the factors have larger influence on worker satisfaction as they all had a mean value greater than 3.50.

Table 4.5: Ranking of the Factors that Influences Construction Worker Satisfaction with Site Welfare Provisions

No.	Factors	Mean	RII	Ranking
1.	Clean drinking water	4.18	.836	1 st
2.	Separate sanitary facilities for ladies and gents	3.92	.784	2 nd
3.	First-aid facilities readily available with required and adequate content	.776	3 rd 3.88	
4.	Management Involvement in Safety	3.84	.768	4 th
5.	Clean and hygienic environment	3.84	.768	5 th
6.	Management Commitment	3.80	.760	6 th
7.	Worker/management communication and cooperation	.748	7 th 3.74	
8.	Facility easily accessible (location appropriate)	3.72		8 th
9.	Organizational Support	3.72	.744	9 th
10.	Facility regularly maintained	3.66	.732	10 th
11.	Adequate space	3.60	.720	11 th
12.	Humanistic management practices	3.42	.684	12 th
13.	Labor management relations	3.38	.676	13 th

Source: Field Survey, 2016

4.5 STRATEGIES FOR IMPROVING CONSTRUCTION WORKER

SATISFACTION WITH SITE WELFARE PROVISIONS

To determine the strategies to improve the construction worker satisfaction with site welfare provisions, the mean score ranking was employed. From the table below, Attractive work place was ranked first (1st) with a mean value and standard deviation of 4.72 and .607 respectively. Adequate information was ranked (2ND) with a mean value and standard deviation of 4.52 and 0.677 respectively. This was followed by effective communication with mean and standard deviation value of 4.12 and 0.824 respectively. Effective site layout is a significant factor in workmen satisfaction in all construction sites (Anumba and Bishop, 1997). According to Baxendale and Jones (2000), employers and employees in an organization are expected to employ various forms of communication techniques in other to promote welfare conditions on site. Communication is an important tool in reporting incidents on sites and how to improve on safe conditions on site (Simon and Piquard 1991). Thus, feedback from workmen is also very important in making decisions concerning the safety of workmen.

Table 4.6: Ranking of the Strategies for Improving Construction Worker Satisfaction with Site Welfare Provisions

No.	Strategies	Mean	Std. Deviation	Ranking
1.	Attractive work place	4.72	.607	1 st
2.	Adequate information	4.52	.677	2 nd
3.	Effective communication	4.12	.824	3 rd
4.	Effective planning	4.04	.925	4 th
5.	Supervising workmen	4.00	.926	5 th
6.	Promoting safe work behavior among workmen	3.98	.869	6 th
7.	Involvement of management	3.96	.925	7 th
8.	Enactment of strict safety rules and procedures	3.84	.997	8 th
9.	Reduction of work pressure	3.78	.887	9 th

Source: Field Survey, 2016

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter summarizes the issues addressed throughout the study. It begins with a summary of how the research objectives were achieved, followed by contributions of this research to knowledge. The chapter concludes with recommendations for further research that can be conducted based on the conclusions

5.2 SUMMARY OF FINDINGS

This study instigates with the primary aim of evaluating worker satisfaction with the site welfare conditions towards making recommendations to improve the situation. In pursuing this aim, three objectives were set out. The achievement of each of the four research objectives is set out in the following subsections.

With the minimum requirement of welfare facilities on construction site, the legislation clearly set out the establishment of some welfare facilities on construction site (legislature on occupational health and safety and the Factory, Offices and Shop Act 1970). However, the study reveals a number most established and available welfare facilities present on construction site which included: Sanitary facilities (wc toilets, privies, chemical closet), Dust bins, drinking water, Changing room and lockers, soap, First aid box (es) and Worker accommodation. Further, these welfare facilities were seen to be highly satisfied by

worker on site. Roughly two-thirds (2/3) of the workers attested that the provisions of these facilities on site are highly satisfied.

In quest for how adequate, accessible and available these facilities are on site, the mean score analysis showed a number of facilities that are very satisfactory and they included: Drinking water, Dustbin, Sanitary facility (WC toilets), Soap, Worker accommodation, Drying facility (towel) and First aid boxes. The sufficiency of provision of these facilities on construction site as Anumba and Bishop (1997) suggested is an important function which influences all aspects of work on a construction site. According to Leblebici (2012), construction workers have expectations and they are contented when these expectations are met. He further added that, this is a critical factor for accepting and/or keeping the job, and subsequently determines the level of employee's motivation. A number of research foci have provided evidence to support this positive effect (Roelofsen, 2002; Chandrasekar, 2011).

A number of factors have been influencing construction worker with site welfare provisions on construction site. From literature, a number of factors were identified and presented to respondents to indicate the level of influences the factors had on worker satisfaction. It reviewed that, clean drinking water, Separate sanitary facilities for ladies and gents, First-aid facilities readily available with required and adequate content, Management Involvement in Safety, Clean and hygienic environment, Management Commitment, Worker/management communication and cooperation etc. greatly influences worker satisfaction on construction site. This influences construction worker performance (either increases or decreases performance) and make them feel sophisticated while they work according to Leblebici (2012).

Subsequently, respondents were asked to indicate the level of significance of the strategies that can be employed to improve construction worker satisfaction with site welfare provisions. It was revealed that, Attractive work place, adequate information, Effective communication, Effective planning etc. were considered to be very significant in improving the satisfaction of worker on site. As Leblebici (2012) postulated, construction workers have expectations and they are contented when these expectations are met.

5.3 CONCLUSION

The study aimed at evaluating worker satisfaction with site welfare conditions towards making recommendations to improve the situation. This involved a survey of questionnaire of personnel involved with the satisfaction of construction worker with welfare conditions on site. The minimum requirement of welfare facilities on construction site were met by the indication of some welfare facilities available and accessible on construction site. They included, sanitary facilities (wc toilets, privies, chemical closet), Dust bins, drinking water, Changing room and lockers, soap, First aid box (es) and Worker accommodation. Further, these welfare facilities were seen to be highly satisfactory by workers on site. Roughly two-thirds (2/3) of the workers attested that the provisions of these facilities on site are highly satisfied. Again from the survey, clean drinking water, Separate sanitary facilities for ladies and gents, First-aid facilities readily available with required and adequate content, Management Involvement in Safety, Clean and hygienic environment, Management Commitment,

Worker/management communication and cooperation etc. greatly influences worker satisfaction on construction site. This influences construction worker performance (either increases or decreases performance) and make them feel sophisticated while they work. Finally, it was revealed that, Attractive work place, adequate information, Effective

communication, Effective planning etc. were considered to very significant in improving the satisfaction of workers on site.

5.4 RECOMMENDATIONS

5.4.1 Practical Recommendations

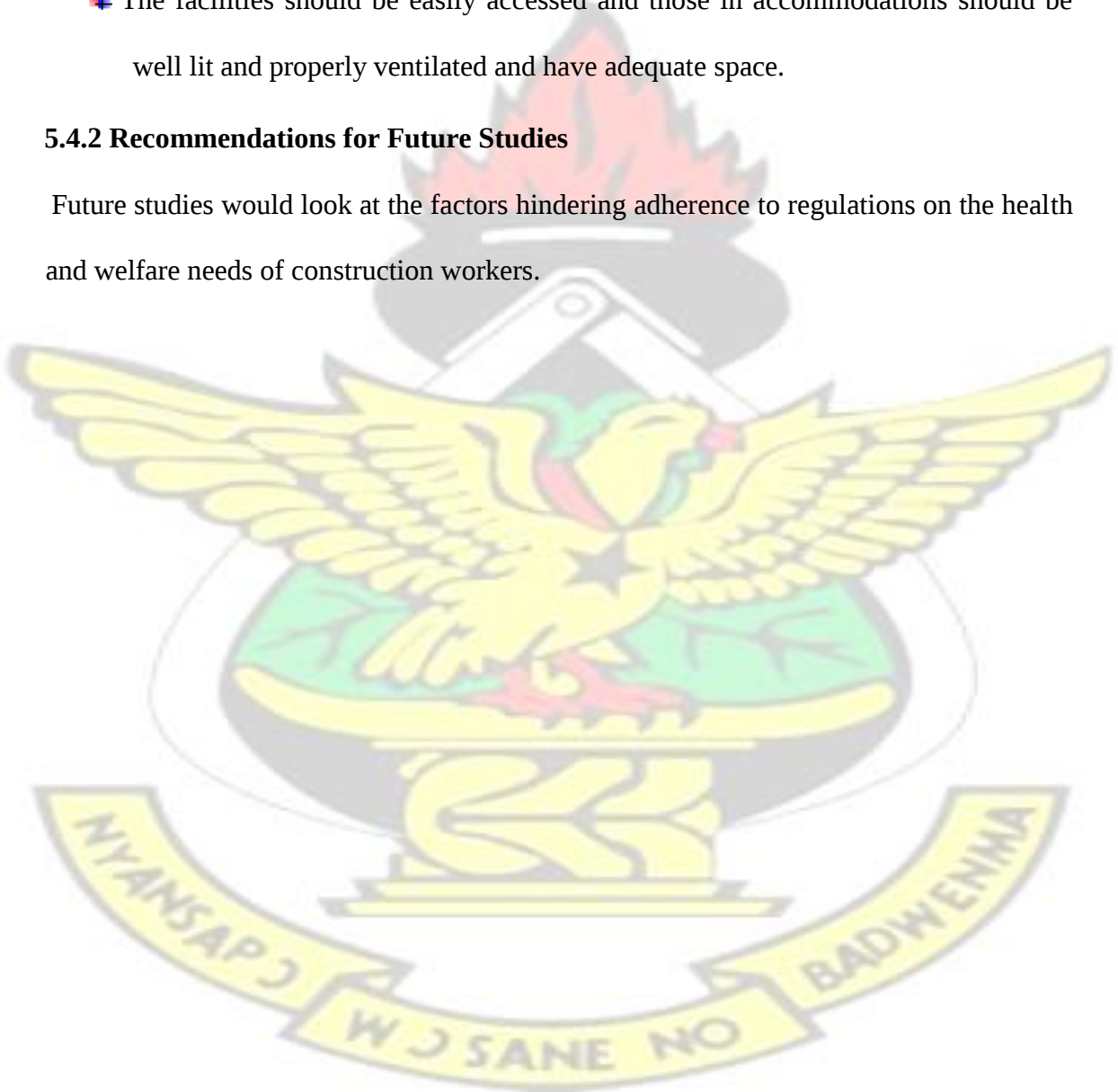
In view of the findings of this research, the following recommendations are therefore prescribed to improve construction worker satisfaction with site welfare provisions.

- ✚ Safety inspectorates from the Ghana Labour office in conjunction with Association of Building Contractors should be reinforced financially to be able to visit construction sites regularly to ensure that those laws governing health and well-being of construction workers are enforced and at least promote construction workers' awareness of regulations governing their occupational health and safety rights.
- ✚ Education and training programmes will have to include the importance of adequately providing welfare facilities on construction sites. With this, employers will benefit fully as there will be productivity maximization as well as retain workers and the employees (workers) will be fully satisfied.
- ✚ The establishment of the welfare facilities must be up to standard in relation to statutory regulation (separate male and female facilities). This will communicate a consistent image of the company.
- ✚ Staff input must also be encouraged in the workplace as well as welfare facilities design through survey, design workshop, focus groups; allow each person to select his/her own ergonomic/comfort chair.

- ✚ Welfare facilities requirement must be developed from staff/workers input and linked design solutions to its establishment.
- ✚ Contractors should pay particular attention to welfare provisions, taking into account the number of persons employed on their site. These facilities maintain the health and wellbeing of the employees.
- ✚ The facilities should be easily accessed and those in accommodations should be well lit and properly ventilated and have adequate space.

5.4.2 Recommendations for Future Studies

Future studies would look at the factors hindering adherence to regulations on the health and welfare needs of construction workers.



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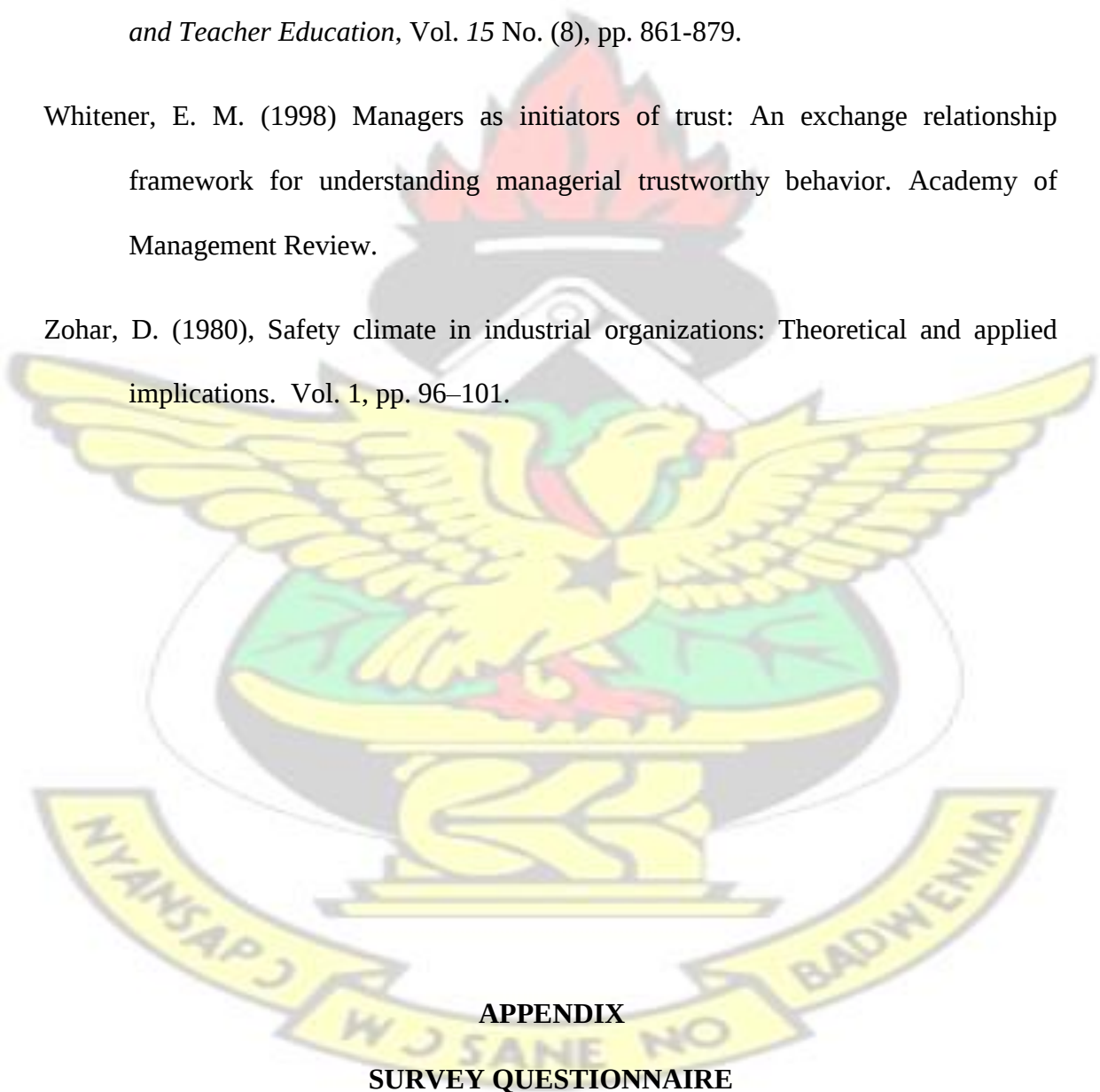
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APPENDIX

SURVEY QUESTIONNAIRE

EVALUATION OF CONSTRUCTION WORKER SATISFACTION WITH SITE

WELFARE CONDITIONS

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,
KUMASI**

COLLEGE OF ART AND BUILT ENVIRONMENT

Department of Building Technology

(MSc. Construction Management)

Dear Sir/Madam

Many thanks for your participation. This questionnaire survey aims at evaluating construction worker satisfaction with site welfare conditions towards making recommendations to improve the situation. Please fill in the questionnaire using the instructions, which will only take you about 10 to 15 minutes. Please be noted that all the information you provided is anonymous and will be only used for academic purpose. Thank you again for your valuable time. If you have any queries, please feel free to contact:

ADZAH KOFI ALPHONZE

Department of Building Technology

KNUST.

Tel: +233244067493

Email: fribkofi@yahoo.com

Section A: Background Information

Please provide the correct information by ticking [☐] the appropriate box and fill in the blank spaces where necessary.

Q1. Gender

[☐] Male

[☐] Female

Q2. Age

[☐] < 20 years

[☐] 21 – 30 years

[☐] 31 – 40 years

[☐] > 40 years

Q3. Educational level

[☐] Junior High School (JHS)

[☐] Senior High School (SHS)

[☐] Polytechnic

[☐] University

Other (please specify)

Q4. Category of work

[☐] Site agent (including site supervisors, engineers, etc.)

☐ Clerk of work (including masons, carpenters, labourers, etc.)

Other (please specify)

Q5. Please indicate how long have you been working in your organization.

☐ Less than 5 years

☐ 6 to 10 years

☐ 11 to 15 years

☐ Above 16 years

Section B: Considering main objectives

Q6. How satisfied are you with the welfare provision on site?

☐ Strongly satisfied

☐ Satisfied

☐ Partially satisfied

☐ Dissatisfied

☐ Strongly dissatisfied

Q7. Please indicate these welfare facilities listed below that are available and accessible to you on site by ticking. *You can tick more than one.*

☐ Sanitary facilities (wc toilets, privies, chemical closet)

☐ Washing facilities (hand wash basins, shower-bath)

☐ Drinking water

☐ Changing room and lockers

[] Rest facilities

[] canteen

[] First aid box (es)

[] Soap

[] Worker accommodation

[] Drying facilities (towers)

[] Shower-bath

[] Dust bins

Q9. Please indicate using the scale provided how satisfactory these welfare facilities are in

relation to their purpose. Scale: 5= *very satisfactory*; 4= *satisfactory*; 3 = *moderately satisfactory*; 2 = *less satisfactory*; 1= *not satisfactory*.

NO.	FACILITIES	levels of influence				
		1	2	3	4	5
1	Sanitary facility (WC toilets)					
2	Washing facility (hand wash basin,)					
3	Drinking water					
4	Changing room and locker					
5	Rest facility					
6	Canteen					
7	First aid boxes					
8	Soap					
9	Worker accommodation					
10	Drying facility (towel)					
11	Dustbin					
	Others (please specify)					

12						
13						
14						

Q10. Factors that influences construction worker satisfaction with site welfare provisions

Please kindly rate on the scale the level of influence the following factors have on construction worker satisfaction with site welfare provisions.

5= extremely influential; 4=very influential; 3=moderately influential; 2=slightly influential; 1= not at all influential

NO.	FACTORS	levels of influence				
		1	2	3	4	5
1	Organizational Support					
2	Clean and hygienic environment (canteen, washroom, changing rooms and lockers, rest facilities)					
3	Clean drinking water					
4	Management Commitment					
5	Management Involvement in Safety					
6	Adequate space					
7	Labor management relations					
8	Humanistic management practices					
9	Worker/management communication and cooperation					
10	Facility easily accessible (location appropriate)					
11	Facility regularly maintained					

12	Separate sanitary facilities for ladies and gents					
13	First-aid facilities readily available and with required adequate content					
	Others (please specify)					
11						
12						
13						

Q11. Strategies for improving construction worker satisfaction with site welfare provisions

Please kindly rate the following strategies that can be employed to improve construction worker satisfaction with site welfare provision on site

5= extremely significant; 4=very significant; 3=moderately significant; 2=slightly significant; 1= not at all significant

NO.	STRATEGIES	levels of influence				
		1	2	3	4	5
1	Effective planning					
2	Enactment of strict safety rules and procedures					
3	Involvement of management					
4	Effective communication					
5	Supervising workmen					
6	Reduction of work pressure					
7	Promoting safe work behavior among workmen					
8	Adequate information					
9	Attractive work place					
	Others (please specify)					
10						

11						
12						

THANK YOU!

KNUST

