EFFECT OF SHIFT WORK ON EMPLOYEE QUALITY OF WORK LIFE IN
EXPORT PROCESSING ZONES, MACHAKOS COUNTY

A CASE OF NEW WIDE GARMENTS KENYA LIMITED, ATHI RIVER

BY

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RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT FOR THE
REQUIREMENT OF MASTER OF BUSINESS ADMINISTRATION DEGREE,
SCHOOL OF BUSINESS, KENYATTA UNIVERSITY

AUGUST, 2012
DECLARATION

This research project is my original work and has not been submitted for a degree in any other University.

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DEDICATION

I would like to lovingly dedicate this work to my grandparents who brought me up in a way that taught me how to struggle to achieve and that nothing comes easy way in life.
ACKNOWLEDGEMENT

Writing a research project can be quite challenging; the road to its completion is not always easy. For the process to go successfully, help is often sought for. This is just but a small mention of the heartfelt thanks I feel.

The researcher acknowledges the professional support, friendly, guidance, advice; suggestions and ideas given by my supervisor Mr. Murungi right from the project inception.

My appreciation is also extended to the lecturers of Kenyatta University who were involved in the noble aspect of imparting knowledge to me.

Lastly, I would like to thank my immediate family members and my friends who gave me the encouragement to complete the work in the face of so many challenges.

Above all, thanks goes to the almighty God for making this course possible.
ABSTRACT

Shift work has been on the rise in the recent years and its adoption by organizations gives rise to a number of problems that have harmful effects on the physical, psychological and social well being of the employees. This study was carried out to determine the effect of shift work on employee quality of work in Export Processing Zones in Athi-River town. The study targeted 200 employees of New Wide Garments Export Processing Zone Kenya Limited. This study was motivated by the fact that the quality of work life of Export Processing zones employees had been neglected. One of the factors attributed to poor quality work life of these employees was the issue of shift work. There has been a lot of complains from Kenya Human Rights Commission and Non-governmental organizations who have questioned the quality of work life of these workers. Export processing zones employees also went on strike in the year 2004 citing poor quality of work life in the firms. This study was expected to be of significance to the Human resource managers of organizations, government, employees and scholars. The Human resource managers will benefit with the recent information on shift work. This will provide with them a crucial frame work that they can apply when evaluating or employing organizations policies concerning employee’s turnover and performance based on shift work. The government will benefit with necessary information on shift work and probably come up with policies aimed at improving the employee quality of work life. The research findings will bridge the gap in knowledge in the area of the study and inspire a series of researchers to build on the recommendations given after the research. Adequate knowledge on the effect of shift work on employees and attractive shift work schedules will have a direct to the employees. The general objective of this study was to determine the effect of shift work on employee in New Wide Garments EPZ Kenya Limited. The specific objectives aimed to determine the effect of the type of shift worked by employees, the duration of shift, the frequency of shift rotation and direction of shift rotation on employee quality of work life. The research design adopted was descriptive design. This would help the researcher establish the effects of shift work on employee quality of work life. The target population was 200 employees of New Wide Garments EPZ Kenya Limited. Sampling was used to select the respondents to participate in the study. The researcher used both primary and secondary sources to collect and analyze the data. Questionnaires were used to collect primary data. The Statistical Package for Social Sciences (SPSS) was used as an aid to analyze data. Both qualitative and quantitative analysis will be used whereby numbers about a situation will be analyzed by choosing specific aspects of that situation. The output was represented using frequency table and charts based on the research objectives. Some of the expected limitations for this study include time in proposal writing and data collection and finances since the researcher is the sole financier of the study. The researcher based the scope of his study to his locality to minimize the traveling expenses. Questionnaires were used to save time and cut the costs.
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<td>ACTU</td>
<td>Australian Council of Trade Unions</td>
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<td>CWW</td>
<td>Compressed Work Week</td>
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<td>EPZ</td>
<td>Export Processing Zones</td>
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<td>GWB</td>
<td>General wellbeing</td>
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<td>HR</td>
<td>Human Resource</td>
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<td>Hr</td>
<td>Hour</td>
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<td>Institutional Research</td>
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<td>QWL</td>
<td>Quality of Work Life</td>
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<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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<td>UE</td>
<td>European Union</td>
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<td>UK</td>
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<td>Ltd</td>
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<td>KHRC</td>
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DEFINITIONS OF KEY TERMS

Biological Clock- An internal system that controls organism circadian rhythms

Circadian- Physical, mental and behavioral changes that follow roughly 24hour cycle

Dissatisfaction- A feeling that makes one de-motivated and urges him/ her to quit the job.

Job Satisfaction- A feeling of pleasure that makes one enjoys his/ her job and stay in the same place for a long time.

Performance- Ability to accomplish a given task measured against preset known standards of accuracy, completeness, cost and speed.

Quality of Work Life- The extent to which employees can enhance their lives through their work environment and experiences

Shift work- An employment practical designed to provide service for respectively the 24 hours of the clock per each day of the week.

Sociological- Relating to human social behavior

Employee Turnover- Is the process of replacing one employee with another for any reason.
CHAPTER ONE
INTRODUCTION

1.1. Background Information

It is the utmost responsibility of any company’s management to ensure good quality of work life of its employees. The term quality of work life was first introduced in 1972 during an international labour relations conference (Hian and Einstein 1990). QWL received more attention after United Auto workers and General Motors initiated a quality of work life programs. Havlovic (1991) defined quality of work life as “favourable conditions and environment of employee’s benefits, employee’s welfare and management attitudes towards operational workers as well as employees in general”; the extent to which employees can enhance their personal lives through their work environment and experiences.

1.1.1. The Concepts and Definitions of Shift work

The following will examine the definitions of shift work and different time schedules as established by Presser et al., (1988).

Shift work systems vary widely in terms of hours worked, time of day and frequency of change and direction of shift rotation. Other shift scheduling arrangements include part time and full time shifts, splits shifts, double day shifts, discontinuous three shift systems, permanent night shifts and weekend shifts. The status of shifts worked as full time are rotating as well as fixed day and night shifts (Presser, 1988). The part time shifts may be worked as rotating shifts that consist of short morning, afternoon and evening shifts. These shifts are usually worked for less than 36 hours per week. The part time and full time shifts have been widely adopted by service sector such as hospital, which provide health care service to the public, and therefore have to be opened 24 hours a day. Split shifts may be worked at any time and divide the hours of work into two or more spells during the day. Employees are released from work after certain number of hours and are required to return to work later in the day to complete their shifts. This kind of schedule may be found in industries such as urban transportation, and restaurants where there are peak periods of activity during the day with little activity in between, (IR Research Services, 1983). Double day shifts are considered a two shift working, usually of eight hours, first shift is customarily worked from “6am to 2pm or 7am to 3pm.

The second shift is usually worked from 2pm to 9pm or 3pm to 11pm (Walker, 1978). This enables the plant to be manned for 80 hours a week without a night shift, although meals
breaks, if they cannot be covered by spare staff, will lead to reduction of the total hours worked to 75 or less. These shifts usually alternate every one or two weeks, but other arrangements are practical, such as changing shifts in mid-week or back to back working when the shifts are changed daily; the same crew are on afternoon shift of one day and the following morning. This type of shift arrangement is usually applied in the manufacturing industry. Saturday and Sunday shifts may be worked in the morning, afternoon, and evening. The hours worked for each shifts are generally greater than the 8 hours individuals whether full timers or part timers must on a rotational basis work the weekend shift. Individuals who work the weekend shifts tend to be in the transportation industry, hospitals and restaurants. Permanent night shifts may be worked because of job demands as in the case of security guards but it is fairly common for fixed and permanent shifts to be substitutes for multiple ones. A fixed day and night shift may replace the alternating day and night shift.

In general, according to Harrington et al., (1978), rotating shifts work are continuous whereas non rotating shifts are fixed. Part time and split shifts may be worked at any time and consist of short shifts. Discontinuous three shift systems may be worked at longer or shorter intervals. The double day system is divided into two separate time intervals (morning and afternoon shifts). Night shifts are usually permanent and fixed.

Wedderburn (1996) asserts that perceived economic pressures in a highly competitive environment have led to employers reducing staff levels and increasing shift work and extended hours in an effort to cut costs and increase productivity. As a result, shift work has proved to be increasingly attractive in a wide range of industries in recent years for various reasons. Dawson (2004) has pointed out that the whole concept of ‘work’ has changed in response to market pressures and technological advances. However, Wallace (2000) observes that the adoption of rotating shifts gives rise to a large of number of problems that have harmful effects to the physical, psychological and social well being of the worker.

The effects of shift work on psychological well-being and health have been well documented by comparisons between shift workers, on one hand, and non shift workers or former shift workers on the other hand (Costa 1996). One of the major problems that shift workers are confronted with is that they are required to ignore their diurnal nature, and to work and be active at times that they should actually relax, which is also known as desynchronization of the circadian periodic functions (Folkard 1996). In general, there are three types of
consequences that have been studied in relation to shift work, and particularly to rotating vs. fixed shifts: physical health variables, family and social variables, and organizational variables (Blau and Lunz 1999). Among the physical health variables, sleep problems, gastrointestinal and psycho-vegetative disorders count as the most frequently studied (e.g., Nachreiner et al. 1995, Costa 1996), whereby employees who work in rotating shifts report more physical health complaints than those with fixed shifts (Akerstedt 1985). Shift work has been related to family and social problems such as higher work/non-work conflict (Staines and Pleck 1984) and diminished leisure activities (Walker 1985), participation in voluntary organizations (Jamal 1981), education of the children (Diekman et al. 1981) as well as reduced spouse satisfaction (Smith and Folkard 1993).

Shift work, if not well-managed, results in occupational stress that leads to performance errors which are typically manifested in increased production rejects, reduced product quality and increased workplace accidents (Smith and Wedderburn 1998). Fletcher (2000) points out that shift workers may neglect rest and sleep in order to be with friends or families and that disruption to family and social lives and fatigue can result in job dissatisfaction, increased absenteeism and employee turnover. It's clear that the shift work affects employee quality of work life. This study will therefore focus on the aspects of shift work and how they affect employee quality of work life.

1.1.1. Shift work in New Wide Garments Kenya EPZ Limited

New Wide Garments Kenya EPZ limited originally known as Protex Kenya EPZ Limited is a Protex Taiwan Group's full capital subsidiary corporation in Kenya. The firm was established in Kenya in October 2001 and has workers quantity of 1250 and machine quantity of 680. New Wide Kenya Garments EPZ Limited manufactures garment products mainly for export. The products include polo shirts, crewneck, shorts, pants, wind suits etc which are 90% poly and 10% spandex. The main source of raw materials is Taiwan and China and the main market products is USA. New Wide Kenya EPZ has a production capacity of polo shirts: 35000 dozens per month, shorts: 35,000 dozens per month, tops: 25,000 dozens per month and wind suits: 16000 set dozens per month. The Company uses special equipments in its production which includes automatic spreading machine, automatic collar turning, cutting and ironing machine, and garment factory computer managing system.

Shift work is a reality for a notable percentage of Kenyan working population. New Wide Garments Kenya EPZ indeed operates on a 24/7 hour clock in order to meet its production
targets and ensure adequate supply of its products to the intended market. As a result, the firm has employed continuous work shift to accommodate a profitable number of employees who can meet the production target and market demand for garments for export. The firm operates in two shift work schedules, i.e. morning schedule (7am-5pm), and nightshift schedule (7pm to 6am) in line with its production demands. The workers are required to rotate their shifts or even work on a 12hour or 24 hour shift. Keeping shift workers motivated, available at work, productive and in sound health can pose a challenge to HR managers. Workers in EPZ firms toil under harsh working conditions which are believed to affect their quality of work life. One aspect that has been argued out about is the issue of shift work.

Kenyan NGOs “Focus on working conditions (2004), workers are placed in several categories. These comprises sewing machines operators who do the actual stitching of seams in clothing, helpers who sort through the clothing and remove lose threads, quality controllers who inspect the end product for defects and supervisors. The machine operators, helpers and quality controllers work while sitting or standing between 8hours, 12 hours or 24 hours daily with only 45 minutes break in between in order to fulfill the quota set by the supervisors. Often the machines get hot and without ventilation, the workers are constantly in a state of extreme discomfort. They cite a case in which workers especially pregnant women have collapsed or fallen seriously ill after long hours of shift work.

Darren Tylor (2005) established that workers in EPZ Athi River were forced to work for long shift hours with no breaks and with little pay thus putting their health, and family lives in danger. Noting the nature of working hours, the women workers are not required to become pregnant or be away from work as a result of the same or else they would lose their jobs. These harsh working conditions indeed affect employees in terms of their health and family and social lives. In addition, a report released by (KHRC) “The manufacture of poverty” (2004) indicates that workers in EPZ Athi River, are required to work for long shift hours. The report narrates that the workers are not adequately paid for the long worked hours and this places them on a high social economic strain. It adds that as a result of working for long shift hours under poor sanitary conditions in the factories and lack of proper equipment or training for handling chemicals and machinery, the employees are thus exposed to health hazards. It is no doubt that shift work impacts shift employee’s quality of work life and therefore, understanding the relationship between shift work and shift employees is critical.
for developing an effective and fair shift management practices in order to improve employees morale and job satisfaction.

1.2. Problem Statement

The primary purpose of any organization is to be able to achieve its goals and objectives satisfactory. The maximum prosperity of both the worker and the employer is usually perceived in relation to performance and productivity (Laden 1982). Much research has been conducted on how to increase productivity and organizations have employed all the possible ways to ensure higher productivity and higher profits and being competitive in the market. One aspect that has been employed to enhance productivity, ensure continuity in production and cut costs involved in production has been the practice of shift work.

As the need for extended operating hours grows, more and more organizations are adopting work schedules that require longer and/or multiple shifts. However, the implementation of shift work has created a number of problems that dictate a pattern of living that directly affects the employees both at work and in their family and social life. Walker et al., (1978), agree that the most wide spread problem noted by shift workers is lack of quality and quantity of sleep. He contends in his study that 89% of former shift workers transferred to day shift as a result of medical reasons attributed to working on shifts. Simon et al., (1990) in his study on shift work and family life concluded that rotating shifts creates problems for both males and females domestic roles, whereas permanent night shifts creates problems in sexual partner roles of shift workers. In comparing fixed shift and versus rotating shifts, Simon (1990) reveals that for shift workers who are single, dating or having a relationship with someone may be problematic, especially if they are assigned rotating shifts; the reason being that their shifts schedules may conflict with the other individual’s schedule.

Most of the firms in EPZ operate on shift work in order to meet their production targets and workers have no choice but to work on shifts some of which have difficulties working on. There have been arguments from Kenya human right commission and Non governmental institutions that the quality of work life of EPZ workers has been compromised. The same workers went on strike on the year 2004 citing poor quality work life. One of the factors attributed to poor QWL is the issue of shift work. It is therefore in this regard that the researcher intends to conduct this study to determine whether shift work affects employees QWL. The study will contribute to our knowledge on shift work and its effect on QWL.
issue of QWL is very significant in that an employee wellbeing on the job grants them certain power, status, dignity and a feeling of well achievement and the researcher believe that it is very important to understand the social, psychological and physiological problems generated by shift work because once its drawbacks have been identified and understood, it will be easy to find a solution to the problem. The study will provide essential information on how shift work affects the employee quality of work life and suggest improvement on shift work management.

Some of the studies done in this area include; working in 24/7 economy challenges for American families by Harriet B. Presser (2003) which examine the reasons for shift work and its implications on employees, Social problems of shift work done in UK by Wiley (1985) and Implication of shift work and Irregular Hours of work by Wallace (2003). There are major gaps since most of the scholars have researched on shift work and employee health in other countries.

1.3. Objectives of the Study

1.3.1. Main objective

The main objective of this study was to determine the effect of shift work on employee quality of work life in New Wide Garments Kenya EPZ limited, Athi- River town.

1.3.2. Specific objectives

a. To determine the effect of the type of shift worked on employee quality of work life in New Wide Garments EPZ Kenya Ltd.
b. To determine the effect of shift duration on employee quality of work life in New Wide Garments EPZ Kenya Ltd.
c. To determine the effect of frequency of shift rotation on employee quality of work life in New Wide Garments EPZ Kenya Ltd.
d. To determine the effect of the direction of shift rotation on employee quality of work life in New Wide Garments EPZ Kenya Ltd.

1.4. Research Questions

a. How does the type of shift worked affect the employee quality of work life in New Wide Garments EPZ Kenya Ltd?
b. How does shift duration affect the employee quality of work life in New Wide Garments EPZ Kenya Ltd?
c. How does the frequency of shift rotation affect the employee quality of work life in New Wide Garments EPZ Kenya Ltd?
d. How does the direction of shift rotation affect the employee quality of work life in New Wide Garments EPZ Kenya Ltd?

1.5. Significance of the Study

1.5.1. To the government
The government will benefits with the necessary information on shift work and probably come up with policies aimed at improving the employee quality of work life.

1.5.2. Academia
The research findings will bridge the gap in knowledge in the area of study. The study will inspire a series of researchers to build on the recommendations given after the research. This is important since not much study has been carried out in the area.

1.5.3. Human Resource managers
The study will provide recent information on shift work to human resource managers and leaders of organizations that they can apply when evaluating or employing organization’s policies concerning employee’s turnover and performance based on work shift.

1.5.4. Employees
Attractive shift work schedules and adequate knowledge on the effect of shift work on employee quality of work life will have direct benefit to the employees.

1.6. Scope of the Study
The researcher limited the scope of his study to the effect of shift work on the employee quality of work life in Export processing zones specifically to the New Wide Garments EPZ Kenya Limited. The firm is located at Athi River town, 30 kilometers from Nairobi. The study targets 200 employees of New Wide Garments Kenya EPZ limited.

1.7. Assumptions of the Study
The researcher assumed that the respondents will give out the required sincere information on shift work and quality of work life during data collection. The researcher also assumed that all firms in EPZ, Athi –River operates on shift work.
1.8. Limitations of the Study

Sourcing for funds was expected to be a challenging task especially considering the nature of the research work and owing to the fact that the researcher was the one solely financing this study. The finances were required for stationery, photocopy, typing services, and traveling. To minimize this expenditure the researcher limited the scope of his study to his locality to cut the cost of travelling.

The available time for research was quite limited provided that this project was to be submitted within a specified short period of time. The researcher used questionnaire as the instrument of collecting data to minimize the problem of time.

The study covered only one firm in EZP. The generalization of study was limited as the challenges of one firm may not be the same as other firms. The method used was descriptive research whereby the variables cannot be controlled by the researcher.
CHAPTER TWO
LITERATURE REVIEW

2.1. Introduction

This chapter deals with the review of literature related to the study. The chapter examines what various scholars and authors have said about shift work and employee quality of work life, in particular. It covers the theoretical review of literature, empirical review of the literature and conceptualization of the research problem.

2.1.1. Historical aspect of shift work (How Shift Work was developed)

Shift work has always existed in various forms even before the industrial Revolution. Industries such as Iron founding, glass making, lime burning and paper making in which the nature of production makes continuity necessary, have always used a shift system (Folkard & Monk, 1998). The legislation permitting continuous shift work was first adopted by Quebec Provincial Law in Canada. A decree presented on 27th October 1936 states that “whose operation must, by reason of the nature of the work itself, necessary continue without interruption at any time of the day, night or week. An order of the 22 June 1937 specified, in addition, that shift work might be adopted for workers in processes that, although not themselves necessary continuous in character, are technically dependent on processes that are necessarily continuous (Maurice 1975). As a result “no limitation was placed on the number of working hours for industries or works which were subjected to the completion of other countries or other provinces” (An Act Respecting The Limitation of Working Hours, Ch 40: 27).

2.1.3. Reasons for shift work

The reason behind the implementation of shift work is as follows; the more a firm is able to have employees work around the clock, this allows the industry to survive and compete with other industries (Cologuhoun & Retenfranz, 1980). “It improves the efficiency of the organization of production so as to achieve maximum returns” (Maurice, 1975). The legislation also reflects changes in the nature of the work itself and in technological requirements that, little by little, led to the extension of shift working to the most diverse branches of economic activity. Multiple shift systems allowed machines to work longer and has been widely practical, because it reduces prime costs and saves capital, especially in the steel and chemical industry. For example, Maurice (1975), report that technological requirements make continuous operation necessary in the iron and steel and chemical
industries. A blast furnace or a distillation column cannot be shut down without giving rise to serious technical difficulties. According to Maurice, in these industries, certain operations could be stopped momentarily without any great damage, except that the stoppage would lead to a marked increase in production costs. This is why it becomes necessary for workers operating machines to work on a continuous basis because it saves money and it also results in greater labor efficiencies.

In some industries the technology determines that the process shall be operated 24 hours a day. This applies to most furnaces as in iron and steel manufacture or oil refining where continuity of working is essential in other continuous processes with gases, liquids or chemicals in which the materials flow in pipes and tubes, the technology demands continuous working. Even if the process can be temporarily closed or slowed down, the length of the starting and stopping times makes it impractical and almost impossible. "In these kinds of industries, for example chemical, oil refining, metal making, the cost of plant is often very large in relation to the labor costs, so that shift working is an economic as well as technological necessity (Maurice, 1978)

The US Department of labor 1986, reported that at the 28% of workers who said that they had selected shift work, most did so to attend school while working, to be able to keep a second job, to create improved child-care arrangements in their families, or to earn better pay. These four reasons are considered positive benefits of working non-standard hours. There are other reasons why individuals choose to work shifts, specifically night shifts. Jane C. Hood (1998) conducted a longitudinal case study of 63 public building custodians. Her findings reveal that most of the public building custodians prefer working at night. The reason for this is because they are unobserved by higher status daytime clientele. Furthermore, shift custodians have both more freedom from supervision and more control over their work pace and work method. Night custodian work in day-occupied building generally involves great deal of local job autonomy for individual custodians and minimal degree of supervision. Simon, 1990 stipulates that night workers report that smaller crews make it easier to form cohesive teams of worker. They also noted that a quiver workplace in that it is easier to concentrate and the rules of dress and comportment are frequently flexible.

Bohlander et al., (1977) presented more reasons as to why individuals work non-standard hours. Employees are able to adjust their work hours according to their own rhythms.
Individuals have a choice to work either night shift or morning shifts, whichever one they feel more comfortable with. As a result, “night people” and “morning people” work with greater enthusiasm, concentration and enjoyment. Working shifts reduces “rush hour rage” as workers utilize the buses and trains at other than peak load periods. Travel time and travel costs are thereby reduced. In addition, recreation can be utilized during less crowded hours and shopping can be done when stores are less crowded.

According to Wedderrburn (1996), shift work is needed for primarily for two reasons. First is to utilize expensive physical facilities to the maximum, and second is to ensure that some essential activities that extend beyond normal one shift working are carried out without interruption. Thus when companies invest billions of dollars in a factory they like to operate such facilities round the clock, that is twenty-four hours a day, to get maximum returns from such investments. Then there are some activities that need to be carried out round the clock. Think of a facility that monitors the movements of missiles approaching a country to ensure protection of the country and its people from any surprise attack. This facility cannot be shutdown.

In addition, shift work is attractive to people because they perceive it as an opportunity to have multiple days off for leisure and care activity, reduced commuting problems and associated costs, and fewer work days with no loss of pay (Wedderburn 1996). Traditional working hours and employment deter a considerable number of the population from working due to the fact that ‘responsibility for childcare in particular has a knock-on effect on women’s employment and earnings capacity’ (Oppenheim 1990). The willingness to take shift work is also enhanced by the opportunity for shift workers to moonlight in other jobs due to their having larger blocks of days off from work. Twelve-hour shifts generally provide more opportunities for personal activities outside work (Smith et al. 1998). Financial motives may well tempt shift workers to take up a second (and even third) job during the period designated for rest and recuperation.

2.2. Theoretical Review

2.2.1. Sociological Model of Shift Work

Simon (1990) suggests that the sociological Model of Shift work has repercussions on the workers social life that can also lead to social isolation. These repercussions differ for different shift schedules and are at times influenced by the workers age, job seniority, marital
and family status. While most workers do not appear to be fundamentally alienated from work, the great majority are alienated from the way in which work is regulated in relation to time.

Research indicates that the worker experiences social isolation. Simon (1990) reports that social isolation can be a major, ongoing problem for morning, afternoon, and evening rotating shift workers. For instance, “those individuals working rotating shifts have little or no control over their ability to attend meetings or events planned long in advance. Workers on afternoon shifts miss most evening gatherings. Access to community services such as medical and dental offices and stores may also be troublesome if ones work shift collides with the standard hours of such services” Simon (1990). Thus, according to Simon (1990), shift workers may find it more difficult to set aside time to spend with family and friends, than do people who perform daytime work. Single and married shift workers often have trouble participating regularly in recreational, cultural, social, or political groups in their neighborhood and community. Consequently, many shift workers may be lonely and feel isolated because they seem to be living in the “margins of society”. Shift workers seem to experience more difficulties balancing their lives and activities with the rest of the members of the society. The great majority are alienated from the way shift work is regulated in relation to time. In other words, they sleep when others are awake and working, and are awake when others are asleep. This may also explain why shift workers are described as working “unusual” and “abnormal” hours.

Charlton et al., (1989) described shift workers as experiencing role conflict and feelings of frustration and despair because the workers may feel that they cannot carry out all of their roles. For example, the workers may feel that they cannot continue to work and also fulfill their roles of good spouses and parents, the reason for this may be due to the fact that work may prevent them from spending more time with their families. For instance, “shift workers are frustrated by their inability to protect the family and provide companionship to their spouse” (Hertz & Charlton, 1989). However, if the individuals do not work, they may feel frustrated and perhaps even guilty over the fact that they are not living up to their potentials as good providers and spouses. Shift workers may have a difficulty time balancing their multiple roles e.g., as husbands/wife; father/mother; friend; shift worker etc. Workers may experience role strain because they are unable to live up to their role expectations which may have been imposed upon them by society's norm. Cunningham et al., 1989 explain some of
the distress of shift work as being due to social factors, e.g., frequent absences from the family, insufficient recreation and disruption of family organisation.

The sociological Model of Shift work suggests that most workers are socially alienated because they seem to experience difficulties in balancing their lives and social activities with the rest of the members of society. In addition, shift workers also experience various role conflicts because shift work keeps preventing workers from fully engaging in their various roles. For example if they at work they are unable to provide child care (Mott et al., 1989). The Sociological Model tells has that much demand is placed on the workers, for example, to be able to work various shifts, provide companionship to their spouses, and/or be attentive to their children etc. Workers may experience role conflicts because they may have difficulty fully living up to their various role expectations as a result of shift work (Cazamian, 1978)

2.2.2. Circadian Model of Shift work

The circadian Theory claims that there exists an internal biological ‘clock’ in every individual designed to expect active wakefulness during daylight and restful sleep at night. The precise timing of these rhythms is shown to be dependent on environmental time cues (Minors & Waterhouse, 1981; Monk & Folkard, 1985; 1992). Monk & Folkard (1992) reported that the Circadian system is kept on track by an entrainment mechanism that uses zeitgebers (German for ‘time givers’) coming from the environment (daylight/darkness) and the behavior (social interaction, meal times, etc.) of the individuals. The human circadian system is influenced by, and goes in accordance with, a 24 hour solar cycle. For instance, human body temperature, heart rate, and blood pressure, vary according to the time of the day. Rhythmicity is not only present at the biological level; it is also present in our environmental and social behavior. For instance, the circadian theory reports that during the daytime most individuals are supposedly awake, active and taking meals.

This theory explains that an individual’s blood pressure, heart rate and temperature will rise during the daytime and fall at night. Furthermore, the circadian theory implies that the normal social rhythm is one of daytime work, evening leisure and night sleep. It is with the problems associated with living differently from the norm, in particular working at night or on shift, that the Circadian Theory of shift work concerns itself (Minors & Waterhouse, 1981).

In general, the circadian theory suggests that some people cope quite well with shift work, others rather badly. Those who cope badly with shift work are considered morning types,
follow a rigid pattern, and fall in the category of sleeping longer (Walker. 1978). In sum, the circadian theory reports that in every individual there exists an internal biological clock that is dependent on environmental time cues.

The Circadian system consistently adjusts the individual’s body rhythms to accommodate sleep at night and wakefulness in the morning. The circadian system can be misaligned, when a disruption in both sleep and daytime functioning occurs. This usually occurs in individuals who work different shift schedules, or particularly work the night shift. The reason for this is because shift work interrupts the natural ebb and flow of the body. This appears to be largely due to the fact that the workers bodily rhythms cannot properly adjust to their shift schedules. As a result of this, most workers experience disorientation, and a decline in performance and health which jeopardizes the workers safety and well being (Minor & Waterhouse, 1992). The circadian theory also stresses that shift work is not for everyone. The theory classifies individuals according to personality and circadian type, habitual sleep type, in order to determine who could be at added risk for shift work coping problems of one sort or another (Monk & Folkard, 1992).

The researcher will adopt the Sociological model which suggests that most workers are socially isolated because they seem to experience difficulties in balancing their lives and social activities with the rest of the members of society. The Sociological model appears to be the most informative in interpreting the effects of shift work on shift employee quality of work life.

2.3. Shift Work and Employee Quality of Work Life

Although there is no formal definition of quality of work life (QWL), industrial psychologists and management scholars agree in general that QWL is a construct that deals with the well-being of employees (Danna and Griffin, 1999). One might argue at this point that QWL is the same as job satisfaction, however it has been stated that QWL differs from job satisfaction in that job satisfaction is construed as one of the many outcomes of QWL (Greenhaus et al., 1987). It is also stated that QWL does not only affect job satisfaction but also satisfaction in other life domains such as family life, leisure life, social life, financial life and so on. Therefore, there is evidence to say that the focus of QWL goes beyond job satisfaction by encompassing the effect in non-work life domains, and satisfaction with overall life, personal happiness, and subjective well-being.
There is a generally accepted view that shift work may lead to a range of problems for many employees thus affecting their quality of work life (Wallace, 2000). These problems fall broadly into three categories: physical and psychological health, social and domestic disruption and sleep disturbances and fatigue. One approach to try and to reduce these problems has focused on the design of the shift system. Certain aspects of the shift system are thought to be more problematic. Thus much research has focused on trying to identify those aspects i.e. the type of shift, the duration of shift, the frequency of shift rotation, and the direction of shift rotation and how they affect employee quality of work life. The researcher will look at these aspects of shift work and how they affect the employee quality of work life.

2.3.1. Type of Shift work

There is little doubt that the type of shift worked affects the employee quality of work life. For instance, working night shifts affects quality and length of sleep, especially for workers whose shift ends in the morning. These workers have been awake all night when their bodies wanted to sleep and now they have to sleep when they should be awake. They also have to try to sleep when the rest of the world is awake and often noisy (UE 2003).

Walker, (1978), agrees that the most widespread problem noted by night shift workers is lack of quality and quantity of sleep. The researcher reports that “in a study conducted by Aanonsen (1964) on factory workers found that 89% of former night shift workers who transferred to day work for medical reasons had experienced difficulties in sleeping but following the transfer to day work only 16 per cent complained of sleeping badly”. In other words night shifts affects employee’s quality and quantity of sleep thus affecting their health. In addition, due to the disruption to their circadian rhythms, nightshift workers have a higher incidence of ulcers and other gastrointestinal disorders (Coburn and Sirois 1999). When rotating work shifts occur the body never gets accustomed to working one time period. Researchers have compared night shift workers with day shift workers in the same work environment who have never worked shifts and have found night shift workers to be significantly less healthy than day workers (Wallace 2003).

Maurice et al (1978), report that the output of shift work is generally thought to be lower at night than by day. The reason for this is because “physiological rhythms should reduce working capacity at night”. In other words, a workers energy level is slower in the evening
than in the daytime. Other reasons why output of night shift is smaller than that of the day shift is because “there is smaller number of supervisory personnel, there is lack of overall coordination and production, and there also exists an inadequacy of the technical assistance available at night” (Maurice, 1975). In a study by Averia et al. (2001), involving nurses, where job performance was evaluated using memory error rate, the author reported that nurses assigned in the night shift experienced a significant higher memory error rate, poor mental health, more subjective feelings of fatigue, and longer stimuli reaction time as compared to when they were assigned in the day shifts and those with permanent shift schedule.

Night shift compared to day work causes adverse affects on the workers personal relationships and family roles, especially for nurses, physicians, and emergency medical specialists (Dunham, 1977). In comparing day shifts and night shifts, Simon (1990) reveals that for workers who are single, dating or having a relationship with someone may be problematic. It’s therefore evident that the type of shift worked by the employee may determine his or her quality of work life.

### 2.3.2. Shift Duration

A shift may last for 8hrs or 12hrs or more than 12hrs depending on the nature of work and the demand of the outputs or service rendered. Long shift for instance 12hrs shift is generally linked to fatigue and health concerns (Williamson, 1997). The extended work hours may unfavorably affect a worker’s health and the recovery time after completing a block of 12-hour shifts, which may sometimes last longer (Mitchell 1997). The difficulty is that the extended work breaks are only achieved by concentrated periods of work, which leave little time for any other activities other than simple body maintenance. Fatigue is generated by excessive hours worked per day, too little time off between work shifts and too many consecutive days worked without rest days (Tepas et al. 1997). Fatigue can cause many problems, such as increased driving accidents (Sirois 1999).

Extended working hours increase the risk impact on fatigue. This affects the amount of time available for sleep and social activities (Williamson, 1997). As work hours increase, the individual compensates by reducing the amount of time available for sleep and other activities. In a situation where an employee works for more than 48hours a week the increased compensation between sleep and other activities results in sleep of limited quality.
and length. The individual begins to accumulate a sleep debt, which causes fatigue level to rise and its effects on health and safety of an employee (Smith, 1994). Vernon (1921) in his study observed that workers who worked for more than twelve hours instead of eight hours had an accident risk that was increased by factor 11.5 to 2. Another study by Nachreiner et al. (2000) confirmed that the risk of accidents or errors in performance increases with an increase in number of hours worked.

A decrease in productivity can also be observed as reported by Vernon (1923) in his study on production losses through accidents. He confirmed that performance (quality & quantity) decrease with shifts durations beyond eight hours since accidents and errors disturb production/service and cause a lot of costs. US studies after World War II recommended the eight hour work day as a general guideline as they found longer working days to cause production losses, absenteeism and accidents. These findings have been repeatedly acknowledged through the century. Tiffin and McCormick (1965) in their study summarized for example that: “it is quite commonly agreed that as the working day is lengthened, the accident rate increases in greater proportion to the increase in number of hours worked”. Moreover, Wallace et al (2000) describes that long working hours especially affect attention and organization of behavior, which again affect productivity. Tucker report in a more recent study (1998) a decrease of self reported vigilance with duration of work especially during twelve-hour night shift.

Time for work, sleep and leisure activities can be regarded as a zero-sum game; an increase in working hours inevitably leads to a reduction in time for sleep and/or leisure activities. Thus the results of several studies show that family life and work life balance are being affected by the number of working hours per week (Worrall & Copper, 1999). An increase in the actual number of working hours leads to a decrease in quality of work life (Jansen et al., 2004).

2.3.3. Frequency of Shift Rotation

The irregular work schedules are referred to as unsocial hours, which are linked to weekend work, evening and night work and morning shifts (NOHSC 2005). Irregular work schedules become known as ‘toxic schedules’ and are believed to affect the employee quality of work life (Wedderburn 1996). However, it is still inconclusive whether shift rotation affects people’s longevity because research in this area is still lacking. Shift rotation can be a double-
edged sword in terms of its impacts on workers' family and social lives. On one hand, shift work rotation that is based solely on organizational requirements and does not acknowledge the personal, domestic and social needs of its employees, may result in difficulties in scheduling childcare and attending school functions with children (UE 2003). Normal family life, social life and community involvement will be disrupted. Studies show that many shift workers who keep on rotating their shifts frequently suffer from additional stress caused by missing out on important parts of their social and family life and may not have sufficient time to recover from work in order to fulfill other needs (Baker et al. 2000). Spouses may work completely different shifts frequently, thus creating a situation where couples who are employed spend less time together. Unmarried shift workers miss out on the social life that most permanent day shifts workers have (UE 2003). The dislocation of family and social life may result in pressures on relationships, domestic workloads and community activities (Baker et al. 2000).

Frequent shift rotation affects the marital roles of shift workers. It affects the domestic routine of both male and females shift workers (Dunham, 1977). Monk et al., (1985) examined the effects of shift rotation on quality of work life specifically on marital happiness and family integration, and the evidence of strain and friction in the family. He concluded that rotating shift work has a ‘two-step’ effect upon family. First of all, the conflict between the hours of work and the times usually given over to certain role behavior seems to result in reports of difficulty and interference with valued activities. Secondly, there seems to be a cumulative effect of these various interferences with role performance leading to some reduction in marital happiness and even greater reduction in the ability to coordinate family activities and to minimize strain and friction among family.

Mott at el, (1965) reveal that the highest output of shift workers is obtained in afternoon shift and the lowest in the morning and night shift because of a decrement in mental performance and this occurs regardless of the frequency of rotation “weekly, fortnightly, or monthly” (Maurice, 1975). These same authors also found that a reduction in output also occurs on permanent night shifts for the same aforementioned reasons. In conclusion, Monk & Folkard (1992) suggest that a highest level of substance abuse occurs among shift workers and this negatively affects job performance. They also reveal that less work production occurs in rotating night shift and permanent night shift.
In a study by Hertz et al (1989) on air force security guards, it was found that shift rotating interferes with individuals’ role as a parent, more so than fixed shifts. Comparing fixed shifts with rotating shifts according to this study, it seems that rotating shifts cause shift working parents to be dissatisfied with their child rearing roles. Most male shift workers on rotating shifts claim that they have a difficult time providing ‘companionship for the children, to teach skills or control and discipline, and maintain close family relationships’ (Folkard, 1985). This may be due to the fact that most rotating shift workers may find that they spend whole week without ever interacting with their children. The children are asleep by the time the shift workers come home from work and are up and off at school by the time the shift workers wakes up in the late morning and vice versa.

2.3.4. The Direction of Shift Rotation
Shift systems can be distinguished by the direction of shift rotation involved when the worker changes from one block of shifts to the next. Direction of shift rotation can either be forward (delaying shift system or backward (advancing shift systems). Forward rotating systems are known as delaying shift because the change from one shift to the next involves delaying the phase of the body clock—that is, effectively extending the day by remaining awake for longer.

It has been commonly suggested that delaying the phase of the rhythm is more compatible with the natural endogenous rhythm of the body clock. This suggestion is based upon early research findings that the endogenous rhythm runs with a period of around 25 hours, although recent research has indicated that the period may be closer to 24 hours than was previously thought (Folkard 1985). In accordance with the findings, it has been suggested that delaying systems are preferable to advancing (backward rotating) systems. This view was confirmed by early research on the topic which found that delaying systems were associated with fewer physical, social, and psychological problems, reduced fatigue, improved sleep quality, and were viewed more favourably by workers who had experienced both systems (Landen RO, 1981). In a similar vein, according to Fraden K (1984), there is some evidence to suggest that air travelers adjust more quickly to westward flights which require a delay of the body clock, than to eastward ones requiring advance.

In a cross sectional comparison of delaying and advancing systems, Barton and Folkard (1993), found advancing systems to be associated with poorer physical and psychological
wellbeing and higher levels of chronic fatigue. However, further analyses indicated that these differences were only significant when considering advancing systems that included quick returns (a break of only 8 hours when changing from one shift to another). Advancing systems with quick returns were also associated with the highest levels of disruption to social and domestic life and the lowest levels of job satisfaction. Measures of sleep disturbance tended to favor delaying systems, although the effects were mostly non-significant. In their suggested explanation of the absence of strong effects, Barton and Folkard (1993) cited in their research findings which indicated that, while the timing of the work period may be delayed, sleep onset times remain unaffected by the direction of shift rotation, as people have a choice of when to go to sleep. Thus, during a complete rotation between three shifts, the timing of sleep will be phase advanced once, phase delayed once, and not shifted once, regardless of whether or not workers are on an advancing or delaying shift system. Barton and Folkard (1993) concluded that direction of rotation may be less critical than the combination of direction of rotation and the duration of break when changing from one shift to another.

Barton et al., (1994) reported a longitudinal study of the effects of changing from a delaying to an advancing system. They found an increase in sleep difficulties between successive afternoon shifts which they attributed to undesired adaptation to working nights immediately before working afternoons. Few differences between the two types of system were found in health and wellbeing, and it was concluded that advancing shifts may not be as harmful as originally suggested. The main implications of their findings related to acute effects, although it was conceded that the 6 months over which the study was conducted may not have been sufficient time for the build-up of health related problems.

2.4. Empirical Review of Literature

Even though various studies have been done on the area of shift work and employee quality of work life, no research has been done on the same in Kenya, more especially in the Export processing zones.

Dunham et al (1977) conducted a study on the effect of shift work on employee family and social lives. On comparing shift work and day work, the study concluded that shift work causes adverse effects on workers personal relationships and family roles, especially for
manufacturing workers, physicians, nurses, and emergency medical specialists. Comparing fixed shifts and rotating shifts the study reveals that for shift workers who are single, dating or having a relationship with someone may be problematic, especially if they are assigned rotating shifts. The researcher in above study explains this to be as a result of the fact that their shift schedules may conflict with other individual’s schedules. In addition, the study asserts that rotating shift workers also have difficulty in keeping contacts with their secondary groups (the extended family, friends and neighbours). According to Maurice (1975), the reasons for these difficulties are two-fold. Firstly, the irregularity of the distribution of free time which is as result of irregularity of work schedules makes the continuity of such informal contacts more difficulty. Secondly, for rotating shift workers, there is an added dimension of difficulty whereby their friends extended family etc, have trouble keeping track of their shift changes. As a result shift workers informal social relations are adversely affected.

According to the study, it means that the digestive system is preparing itself for a period of fasting, in order to obtain sound, comfortable sleep (it is regulating itself for the next day’s meal). However, according to Cazamian (1978), because most night workers eat late at night, they may be overworking their digestive systems and this may not only lead to gastrointestinal disorders such as ‘constipation’, it may also cause obesity in some workers. For instance, the study found that 20% of the females had obesity.

Walker et al (1978) conducted a study on shift work and health of factory workers. The study found that 89% of former shift workers who transferred to day work for medical reasons had experienced difficulties in sleeping but following the transfer to day work only 165 complained of sleeping badly. In other words, shift workers seem to experience problems with sleeping, more so than day workers. For instance, a study by Betancourt et al (1981) found a higher incidence of sleep problems among night shift workers in industries such as chemical, iron, steel works, nursing and air crew attendance. The problems are more serious for those who rotate shifts, however, even permanent night workers tend to have more frequent difficulties involving the duration and quality of sleep. For example, the reason why permanent night workers have difficulty with sleeping is because “the later the worker goes to bed the shorter the duration of sleep” (Carpentier, 1978). The study assumes that during the afternoons where most night workers attempt to sleep, they may be subject to various disturbances such as light, noise of children, traffic noise that may cause most workers to be
awakened. The researchers agree that the most wide spread problem noted by rotating shift workers is lack of quality and quantity of sleep which in turn affect their health.

Simon et al (1990) on a Scandinavian study on shift work and employees health report that shift work severely affects shift workers general health. On comparing factory shift workers with day workers the report concluded that “there were more stomach disorders among shift workers than day workers and particularly there was a greater incidence of peptic ulcers”. The study assumes that when comparing fixed shift workers versus rotating shifts, it seems that various gastric and intestinal disorders arise in individuals working the permanent night shift. The study explains that the reason for this is due to the fact that “regular night work disrupts the circadian rhythm of nutrition” In other words, working the night shift involves eating a meal during the evening which indeed may disrupt the individuals digestive system is in the process of de-activation (Carpentier, 1978).

Simon et al (1990) in his study found that shift work causes workers to be out of synchrony with their body schedules. Rotating shifts, afternoon and night shifts causes various nervous disorders. For example, the study found that there are two and a half times (64%) more workers disorders among workers on rotating shifts than among day workers (25%) and that, 32% of the workers formerly on rotating shift were moved to day shift suffered from nervous disorders as against only 13% of the workers who had always been employed on normal schedules.

In a number of studies conducted in a wide range of industries which consisted of Iron, steel, textiles and services established that workers who worked on shifts complained of headaches, stomach pain, indigestion, dyspepsia, constipation, loss of appetite, psychological depression and anxiety (Monk, 1991). The studies conclude that these various physiological and psychological problems experienced by shift workers result from disturbances to ‘time’ orientated body functions. In other words, the workers have never mentally or physically adjusted to working on shifts.

A study by Regestein et al (1991) on oil refining shift employees established that the workers indulged in heavier use of caffeine as well as significantly greater use of alcohol (16% of men on shift had more than four drinks daily). The same study reveals that several shift workers had increased incidence of tranquilizer use and nervousness. As a result, most of these
workers appeared to experience more job stress, severe emotional problems and physical ailments. The ramification of such disorders suggests that shift work and the problems of individual just described exemplify the problems associated with rotating shift work specifically the night shift which affect individual performance on the job (Folkard, 1992).

Dembe et al., (2005) in his study concluded that there is abundant evidence that working in jobs requiring especially long hours and non standard shifts raises workers risks for injury and disease. The study estimated that working long hours increases the likelihood for the on job injuries by 61%. The study also showed that working evening shifts carry 38% greater chance of job injury and night shift a 31% increased risk of job injury compared with working in a conventional day shift.

Shen & Dicker, (2008) conducted a study on the impact of shift work on shift workers with regard to their health, family and social lives in National Food Pty Ltd, Australia. The research established that health problems including fatigue sleep deprivation and weight gain accounted for the major concerns that managers had for shift workers. All shift workers managers interviewed in the study felt that working night shifts produces fatigue and it’s hard to recover at home. The study also concluded that shift work has an impact on marriage and relationships as well. There was a general consensus that shift work placed relationships under stress and resulted in many break ups.

2.5. Critique of Literature Review

In the view of the advantages and the disadvantages related to shift work, it’s no doubt that there are more negative consequences to working on shifts than there are benefits. More problems occur for those employees working on rotating shifts and permanent night shifts. Previous research evidence suggests that shift work causes a number of problems for shift employees. Whether the cause is due to disruption in circadian bodily rhythms causing individuals to have psychological distress and neurosis, or to role conflicts and alienation, remains somewhat unclear. What is clear, however, is that the negative effects occur for most shift workers. The literature does not deny the fact that permanent night and rotating shift do have benefits for workers. Employees who prefer to work rotating shifts do so because they do not wish to follow a monotonous routine, and are never bored because of it. For instance, most employees on rotating shifts have the advantage working with different
people, which makes their working environment more interesting. Others prefer working different hours because it provides variety, and every shift is different (Harrington, 1978).

On the issue such as rate of on-job health, the literature is not clear on whether it is female or male shift workers that encounter more of these problems. It automatically assumes that it is the same for both genders. Furthermore, most of the information deals with male shift workers in industries, such as iron, steel work and textile. And very limited information is exists on female shift workers. In fact, the literature mainly focuses on female health care workers, who are in nursing industry. Therefore, a skewed view of shift work is being presented especially, given the fact, that men and women have different life experiences. For example, female shift workers are usually in house hold and child care responsibilities (Folkard, 1992), and this creates a double burden for most of them. Not only do they have to adjust themselves to working rotating and permanent night shift, they also have to adjust household and family obligations in accordance with the shift they are working. Thus, as a result, shift work, coupled with personal responsibilities, may increase stress experienced by female shift workers. Female may encounter a higher degree of health problems. However, such a probability has not been proven or refuted. The reason for this is because female shift workers are under-represented in the literature.

In addition, the literature does not thoroughly explain the differential effects of shift work (i.e. fixed morning and afternoon shift). It mainly focuses on the effects of night and rotating shifts. It only states that these are the industries (iron, steel, and textile and health services) where individuals are more likely to experience physical, psychological, and social problems. It does not explain whether it is the nature of work itself that causes the stress (some jobs regardless of what one does, causes problems) or whether it is the fact that shift work in conjunction with the job demands causes such problems. In other words, the literature does not separate job demands from shift work demands. It does also not indicate whether it is actually shift work itself that causes the employees to have so many problems; or whether it may be the case where these individuals are initially predisposed to these problems and shift work just serves to accelerate them.
2.6. Conceptual Framework

Figure 2.1: The Effect of Shift Work on Employee Quality of Work Life

<table>
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<tr>
<th>Independent Variables</th>
<th>Dependent Variable</th>
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Source: Researcher (2012)

The figure shows the relationship between the independent variables and dependent variable. The independent variables are the aspects of shift work affecting employee quality of work life.

Type of Shift work- Day Shift, mid morning or night shift

Frequency of Shift- How frequent shift changes i.e. every week, every two weeks or every month

Duration of Shift- 8hrs or 12hr shift or even more than 12hrs

Direction of Shift Rotation- Direction of shift rotation can either be forward rotating system or backward rotating system

Forward rotating system involves changing from morning shifts to afternoon shifts, and then from afternoon to nights.

Backward rotating system involves change in the opposite direction i.e. night to afternoon shift, and then to morning shift
2.6.1. Measurement of Quality of work life

There are few recognized measures of quality of working life, and of those that exist few have evidence of validity and reliability, that is, there is a very limited literature based on peer reviewed evaluations of available assessments (Van Laar et al, 2007). A recent statistical analysis of a new measure, the Work-Related Quality of Life scale (WRQoL), indicates that this assessment device should prove to be a useful instrument, although further evaluation would be useful. The WRQoL measure uses six core factors to explain most of the variation in an individual’s quality of working life: Job and Career Satisfaction; Working Conditions; General Well-Being; Home-Work Interface; Stress at Work and Control at Work.

The Job & Career Satisfaction scale of the Work-Related Quality of Life scale is said to reflect an employee’s feelings about, or evaluation of their satisfaction or contentment with their job and career and the training they receive to do it. Within the WRQoL measure, JCS is reflected by questions asking how satisfied people feel about their work. It has been proposed that this Positive Job Satisfaction factor is influenced by various issues including clarity of goals and role ambiguity, appraisal, recognition and reward, personal development career benefits and enhancement and training needs.

The General well-being scale of the Work-Related Quality of Life scale, aims to assess the extent to which an individual feels good or content in themselves, in a way which may be independent of their work situation. It is suggested that general well-being both influences, and is influenced by work. Mental health problems, predominantly depression and anxiety disorders, are common, and may have a major impact on the general well-being of the population. The WRQoL GWB factor assesses issues of mood, depression and anxiety, life satisfaction, general quality of life, optimism and happiness.

The WRQoL Stress at Work sub-scale reflects the extent to which an individual perceives they have excessive pressures, and feel stressed at work. The WRQoL SAW factor is assessed through items dealing with demand and perception of stress and actual demand overload. Whilst it is possible to be pressured at work and not be stressed at work, in general, high stress is associated with high pressure.

The Control at Work subscale of the WRQoL scale addresses how much employees feel they can control their work through the freedom to express their opinions and being involved in decisions at work. Perceived control at work as measured by the Work-Related Quality of
Lifescale is recognized as a central concept in the understanding of relationships between stressful experiences, behaviour and health. Control at work, within the theoretical model underpinning the WRQoL, is influenced by issues of communication at work, decision making and decision control.

The WRQoL Home-Work Interface scale measures the extent to which an employer is perceived to support the family and home life of employees. This factor explores the interrelationship between home and work life domains. Issues that appear to influence employee home work interface include adequate facilities at work, flexible working hours and the understanding of managers.

The Working Conditions scale of the WRQoL assesses the extent to which the employee is satisfied with the fundamental resources, working conditions and security necessary to do their job effectively. Physical working conditions influence employee health and safety and thus employee Quality of working life. This scale also taps into satisfaction with the resources provided to help people do their jobs.

The researcher concentrated on the following indicators of QWL which are largely influenced by shift work as proposed by Walton (1973)

1) General wellbeing of the employee (physical and psychological wellbeing)
2) Work and total life space (Work life balance)
3) Social relevance of work life (Social life)
4) Home work interface (Family life)
CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction
This chapter describes how the study will be designed and conducted. It explains the design of the study, target population, sampling techniques, description of research instruments, data collection techniques and the analyzing tools used to make the conclusions.

3.2. Research Design
The study used a descriptive design to determine the effect of shift work on employee quality of work life. Descriptive research methodology was adopted for this study as it involves the description and interpretation of circumstances that prevail at the times of the study. The chosen research design would help the researcher to establish the effects of shift work on employee quality of work life. The researched utilized instruments such as questionnaires administered to the employees and the supervisors.

3.3. Target Population
Borg et al (1989) define target population as, ‘all members of a real or hypothetical set of people, events or objects to which a researcher wishes to generalize the results of the research study.’ The target population for this study consisted of 200 employees. The researcher drew respondents from the supervisors and workers of the New Wide Garments EPZ Kenya Limited. The choice of this firm was based on the fact that the researcher was a resident of the town and found it easier and cheaper to collect data from the firm.

The target population was as follows

Table 3.1: Target Population

<table>
<thead>
<tr>
<th>Category</th>
<th>Target Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisors</td>
<td>20</td>
</tr>
<tr>
<td>Employees</td>
<td>180</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
</tr>
</tbody>
</table>

Source: Author (2012)
3.4. Sample Design and Procedure

Sample is a subset of population. A sample of 30% of target population was drawn from the population using random sampling. This sampling method ensured that researcher was able to estimate the attributes and characteristics of the whole population. Sampling was adopted to minimize the cost, ensure faster data collection and since the data set is smaller it was possible to ensure homogeneity and to improve accuracy and quality.

Table 3.2: Sample Size

<table>
<thead>
<tr>
<th>Category</th>
<th>Target Population (100%)</th>
<th>Sample Size 30% of Target Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisors</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>Employees</td>
<td>180</td>
<td>54</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>60</td>
</tr>
</tbody>
</table>

Source: Author (2012)

3.5. Data Collection Instruments and Procedures

Data was collected by use of structured questionnaires among the employees and their supervisors in their work places. This procedure eliminates bias since the identity of respondents is to be protected. The researcher used questionnaire because it conveniently covers a large number of respondents. It also allows the respondents to give their own responses in a free environment and help the researcher get out information that would have been obtained through interviews. The questionnaires was administered through drop and pick method.

3.6 Validity and Reliability

Joppe (2000) defines reliability as the extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. Kirk and Miller (1986) identify three types of reliability referred to in quantitative research, which relate to: (1) the degree to which a measurement, given repeatedly, remains the same (2) the stability of a measurement over time; and (3) the similarity of measurements within a given time period. Charles (1995)
adheres to the notions that consistency with which questionnaire [test] items are answered or individual’s scores remain relatively the same can be determined through the test-retest method at two different times. Joppe (2000) provides the following explanation of what validity is in quantitative research: Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are. The reliability of the questionnaires was determined by test-retest reliability method. In order to test validity and reliability of the instrument to be used, a pilot study was carried out.

3.7. Data Analysis and Presentation
The Statistical Package for Social Sciences (SPSS) was used as an aid to analyze data. Both qualitative and quantitative analysis was used whereby numbers about a situation was analyzed by choosing specific aspects of that situation. Descriptive statistics was used to analyze the quantitative data that was obtained. Appropriate descriptive statistics i.e. frequency counts, means and percentages was employed. Data interpretation was done using frequency tables, bar and line graphs, and pie charts
CHAPTER FOUR
RESEARCH FINDINGS

4.1. Introduction

This chapter presents data analysis and discussions on the study findings on the effects of shift work on employee quality of work life in New Wide Garments EPZ Kenya Ltd in Machakos county, Athi-river town.

4.2. Analysis of Response Rate and Background Information

4.2.1. Analysis of Response Rate

The researcher distributed 200 questionnaires to 200 employees of New Wide Garments EPZ Kenya Limited. All the 200 employees responded to the questionnaires representing a 100% response rate. A sample size of 60 employees was selected to present the population.

4.2.2. Background Information

The researcher required the respondent to indicate the following characteristics: gender, age, level of education, and work experience. This was in attempt to find out the relationship between the characteristics and the quality of work life. This is shown in the following figures 4.1, 4.2, 4.3 and 4.4 below

Figure 4.1: Respondents Gender

![Gender Pie Chart]

- Female: 62%
- Male: 38%
Figure 4.1: showed that 38% of the respondents were males, while 62% were women. This implies that the EPZ work force is majorly dominated by women. This would be attributed to the nature of job considering the fact that the firm deals with sewing, stitching, ironing, and cutting, light jobs associated with women.

**Figure 4.2. Respondent’s Age**

Figure 4.2 shows the respondents’ age. It was obtained from the 60 respondents

![Respondent's Age](image)

Figure 4.2 showed that 47% of the employees aged below 30 years, with 32% aged between 31 and 40 years and 21% of the respondents aged above 40 years. This would mean that New Wide Garments EPZ Kenya Ltd work force is dominated young employees.
The study established that 13% of the respondents were primary school leavers, 72% ‘O’ Level/KCSE graduates, 14% were college graduates and 1% university graduates. This shows there is need to train most of these employees since most of them have only acquired basic education. This can be done by way of seminars, workshops in service course and on the job training. The courses should be geared towards equipping the employees with skills and knowledge in the area of their work and on issues that affect their quality of work life for instance the issue of shift work.
The findings in figure 4.4 revealed that slightly more than half of the respondent's i.e. 66% had been working in the firm for a period of 1-5 years and 11% had served in the firm for a period of 6 to 10 years. 7% had worked for over 10 years and 16% had worked for less than a year. It can therefore be argued that majority of the workers do not stay in the firm for long and most of them leave the firm after 6 years of work.
4.3. Analysis of Shift Scheduling

4.3.1. Nature of Shift Work

The respondents were required to indicate the nature of shift they were working at. They were required to indicate whether they were working on a fixed shift schedules or rotating shift schedules. The findings revealed that 78% of the respondents work on rotating shifts schedules whereas 22% work fixed shift work schedules. This is a clear indication that majority of EPZ employees work on a rotating shift schedules.

4.3.2. An analysis on the Respondents response rate on the type of shift work

<table>
<thead>
<tr>
<th>Type of Shift</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day Shift</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Night Shift</td>
<td>17</td>
<td>28</td>
</tr>
<tr>
<td>Rotating Shift</td>
<td>31</td>
<td>52</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>
The respondents were required to indicate the type of shift work they worked on. The findings on table 4.1 showed that 52% of the respondents work on rotating shift schedules, 28% work on night shift schedules and 20% on a fixed day shift schedules. This is a clear indication that shift rotation is the order of the day of the most of the workers in New Wide Garments EPZ Kenya Ltd.

4.3.3. An analysis on the Respondents Response Rate on the Number of Hours Worked

Table 4.2. Respondents Number of hours worked

<table>
<thead>
<tr>
<th>Number of Hours</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Hours</td>
<td>14</td>
<td>23</td>
</tr>
<tr>
<td>12 Hours</td>
<td>36</td>
<td>60</td>
</tr>
<tr>
<td>Others</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The respondents were required to indicate the number of hours worked in a shift. The findings in table 4.2 revealed that 60% of the respondents work 12 hours in a shift, 23% work 8 hours in a shift, 17% work either more than 12 hours in a shift or less than 8 hours in a shift. This is a clear indication that majority of the employees work for long shifts.
4.3.4. An analysis on Respondents Level of Satisfaction with the number of Hours Worked

![Pie chart showing level of satisfaction with the number of hours worked](chart)

The respondents were required to indicate whether they were satisfied or dissatisfied with the number of hours worked. The findings established that 77% of the respondents were not satisfied with the number of hours they were working on, whereas 23% were satisfied with the number of hours worked. High level of dissatisfaction indicates that the quality of work life of the employees is compromised in a way. Job satisfaction is one of the indicators of good quality work life.

4.3.5. An analysis of Respondents level of preference on the Nature of work

<table>
<thead>
<tr>
<th>Level of Preference</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Shift</td>
<td>49</td>
<td>82</td>
</tr>
<tr>
<td>Rotating shift</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Table.4.3. Respondents level of preference on the Nature of Shift Work
The respondents were required to indicate whether given a chance they would prefer working on fixed shift or rotating shift. The findings indicated that 82% of the respondents preferred working on fixed shift schedules whereas only 18% preferred working on rotating shift schedules. The findings indicate that most of the employees preferred working on fixed shift schedules even most of them worked on rotating shift schedules.

4.4. Self-Assessment on Quality of Work Life

An individual’s self-assessment helps in determining the employee’s quality of work life. A positive or negative self-assessment will determine how good or poor the quality of work life of the employees is. The study aimed at determining the employees self-assessment on quality of work life. The employees were asked to give information on their quality of work life in relation to various statements. Ten structured statements were incorporated with a scale ranging from strongly Agree to strongly Disagree. For ease of analysis, strongly Agree and Agree were combined as Agree while Disagree and strongly Disagree became Disagree. The respondent’s percentages of agreement and disagreement with the various statements are shown in the table 4.4 below:

<table>
<thead>
<tr>
<th>Statements</th>
<th>Agree F(%)</th>
<th>Neutral F(%)</th>
<th>Disagree F(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is hard to take time off during my work to take care my personal or family matters</td>
<td>42(70)</td>
<td>4(7)</td>
<td>14(23)</td>
</tr>
<tr>
<td>The demands of my job often interfere with my family life</td>
<td>39(65)</td>
<td>7(12)</td>
<td>14(23)</td>
</tr>
<tr>
<td>Where I work, employees and management work together to ensure the safest possible working conditions</td>
<td>13(22)</td>
<td>5(8)</td>
<td>42(70)</td>
</tr>
<tr>
<td>Conditions on my job allow me to be about as productive as I could be</td>
<td>15(25)</td>
<td>11(18)</td>
<td>34(57)</td>
</tr>
<tr>
<td>I am satisfied with the working conditions provided by my company</td>
<td>19(32)</td>
<td>9(15)</td>
<td>32(53)</td>
</tr>
<tr>
<td>I have an opportunity to develop my own special abilities</td>
<td>17(28)</td>
<td>2(3)</td>
<td>39(69)</td>
</tr>
<tr>
<td>At the place where I work, am treated with respect</td>
<td>23(38)</td>
<td>0(0)</td>
<td>37(62)</td>
</tr>
<tr>
<td>Statement</td>
<td>N</td>
<td>F</td>
<td>Total</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-----</td>
<td>----</td>
<td>-------</td>
</tr>
<tr>
<td>Am happy working for my employer</td>
<td>6(10)</td>
<td></td>
<td>43(72)</td>
</tr>
<tr>
<td>I am satisfied with the quality of work in my company</td>
<td>2(3)</td>
<td>3(5)</td>
<td>55(92)</td>
</tr>
<tr>
<td>The working environment in my company is motivating</td>
<td>7(12)</td>
<td>8(13)</td>
<td>45(75)</td>
</tr>
</tbody>
</table>

From the table above, majority of the employees indicated that it is hard for them to take time off during working hours to attend their personal matters, stated that the demands of their work interfered with their family lives, only agreed that the employees and management work together to ensure the safest possible working conditions. agreed that the conditions on their jobs allow them to be as about productive as they could be, with stating that they were satisfied with the working conditions provided by their company. stated that they could have an opportunity in their job to develop their own special abilities with agreeing that they were treated with respect at their place of work. stated that they were happy working for their employer, with stating that the working environment in their company is motivating and only indicating that they were satisfied with the quality of work life in their firm. From these results, it is evident that these employees have poor quality work life. The quality of work life of these employees compromised as per the findings of the study.

4.5. Analysis of Variables Under Study

According to the literature review, it is worth noting that shift work impacts employee quality of work life. The researcher looked into the aspects of shift work and how they affect the employee quality of work life. These aspects include; type of shift work, shift duration, frequency of shift rotation and direction of shift rotation as analyzed below

4.5.3. Type of shift work and employee Quality of work life

The type of shift work can have an adverse effect on employee quality of work life as established in the literature review. The study aimed at determining the effect of the type of shift work on employee quality of work life in EPZ employees. Employees were required to give information on the type of shift they work affect their quality of work life. Five structured statements were incorporated with a scale ranging from strongly Agree to strongly
disagree. For ease of analysis, strongly agree and agree were combined as Agree while disagree and strongly disagree were combined as disagree. The respondent’s percentages of agreement and disagreement with various statements are shown in the table 4.3:

Table 4.5: Type of shift work and Employee Quality of work life

<table>
<thead>
<tr>
<th>Statements</th>
<th>Agree F(%)</th>
<th>Neutral F(%)</th>
<th>Disagree F(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>My relationship is negatively affected by the type of shift I work</td>
<td>43(72)</td>
<td>3(5)</td>
<td>14(23)</td>
</tr>
<tr>
<td>My shift allows me enough time with my spouse</td>
<td>7(12)</td>
<td>6(10)</td>
<td>47(78)</td>
</tr>
<tr>
<td>I get the value I deserve for the kind of work I do in my shift</td>
<td>9(15)</td>
<td>2(3)</td>
<td>49(82)</td>
</tr>
<tr>
<td>Working at night has caused me to experience problems with my health</td>
<td>51(85)</td>
<td>1(2)</td>
<td>8(13)</td>
</tr>
<tr>
<td>Working at night affect the quality and quantity of my sleep</td>
<td>56(93.4)</td>
<td>2(3.3)</td>
<td>2(3.3)</td>
</tr>
</tbody>
</table>

From the table 4.5 above, majority of the employees 43(72%) stated that their relationship was affected by the type of shift they worked while only 7(12%) agreed that their shift allows them enough time with their spouses. 9(15%) indicated that they get the value they deserve for the kind of work they do in their shifts. 51(85%) indicated that working at night cause them to experience problems with their health with 56(93.4) agreeing that working at night affect their quality and quantity of their sleep. These results are in line with the findings of Simon (1990) who found that night shift compared to day work causes adverse effects on workers personal relationships, family roles and also the quality and quantity of sleep.

4.5.4. Shift duration and Employee quality of work life

The study aimed at determining the effect of shift duration on employee quality of work life in EPZ employees. Employees were required to give information on the effect shift duration on their quality of work life. Five structured statements were incorporated with a scale ranging from strongly Agree to strongly disagree. For ease of analysis, strongly agree and agree were combined as Agree while disagree and strongly disagree were combined as disagree. The respondent’s percentages of agreement and disagreement with various statements are shown in the table 4.6:
From table 4.6 above only 12(20%) of the employees stated that they were satisfied with the number of hours they work, 48(80%) indicating that working for long hours make them get fatigued. 39(65%) stated that working for long hours has led them to having increased headache, backache etc with 9(15%) stating that they have enough time to get their job done. 41(68%) indicated that working for long hours affects their concentration at work. From the results it’s evident to argue that shift duration affect employee quality of work in EZP.

4.5.5. Frequency of shift rotation and Employee quality of work life

The study aimed at determining the effect of frequency of shift rotation on employee quality of work life in EPZ employees. Employees were required to give information on the effect frequency of shift rotation on their quality of work life. Five structured statements were incorporated with a scale ranging from strongly Agree to strongly disagree. For ease of analysis, strongly agree and agree were combined as Agree while disagree and strongly disagree were combined as disagree. The respondent’s percentages of agreement and disagreement with various statements are shown in the table 4.7:

<table>
<thead>
<tr>
<th>Statements</th>
<th>Agree F(%)</th>
<th>Neutral F(%)</th>
<th>Disagree F(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have trouble going to sleep/waking up after changing shift</td>
<td>52(87)</td>
<td>2(3)</td>
<td>6(10)</td>
</tr>
<tr>
<td>My sexual relations is negatively affected by shift rotation</td>
<td>43(72)</td>
<td>4(7)</td>
<td>13(21)</td>
</tr>
<tr>
<td>I have become addicted to smoking, drinking and taking</td>
<td>35(58)</td>
<td>9(15)</td>
<td>16(27)</td>
</tr>
</tbody>
</table>
From table 4.7 above, 52(87%) employees indicated that they had trouble going to sleep/waking up after changing shift, 43(72%) agreed that their sexual relations were negatively affected by shift rotation. 35(58%) indicated that as a result of frequent shift rotation, they resulted into smoking, drinking and increased rate of caffeine taking whereas 38(63.3%) stated that they had increased or lost their weight as a result of frequent shift rotation. 57(95%) suggested that shift rotation interfered with their leisure activities. These results conform to Wedderburn (1996) findings that irregular work schedules affect employee’s quality of work life.

### 4.5.6. Direction of shift rotation and Employee quality of work life

The study aimed at determining the effect of direction of shift rotation on employee quality of work life in EPZ employees. Employees were required to give information on the effect of direction of shift rotation on their quality of work life. Five structured statements were incorporated with a scale ranging from strongly Agree to strongly disagree. For ease of analysis, strongly agree and agree were combined as Agree while disagree and strongly disagree were combined as Disagree. The respondent’s percentages of agreement and disagreement with various statements are shown in the table 4.8:

<table>
<thead>
<tr>
<th>Statements</th>
<th>Agree F(%)</th>
<th>Neutral F(%)</th>
<th>Disagree F(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I sleep adequately when I change shift from day time to night</td>
<td>6(10)</td>
<td>4(7)</td>
<td>50(83)</td>
</tr>
<tr>
<td>I feel more fatigued when I change shift from day time to night</td>
<td>37(62)</td>
<td>2(3)</td>
<td>21(35)</td>
</tr>
<tr>
<td>I often visit to the hospital when I change my shift to night</td>
<td>32(53)</td>
<td>7(12)</td>
<td>21(35)</td>
</tr>
<tr>
<td>I experience gastrointestinal problems when I change my shift from day to night</td>
<td>45(75)</td>
<td>5(8)</td>
<td>10(17)</td>
</tr>
<tr>
<td>I feel stressed up changing my shift from night to day shift</td>
<td>47(78)</td>
<td>1(2)</td>
<td>12(20)</td>
</tr>
</tbody>
</table>
From the table 4.8 above, majority of the employees 50(83%) indicated they disagreed the fact that they sleep adequately when they change their shifts from day time to night time. Only 37(62%) stated that they feel more fatigued when they change shift from day time to night time. 32(53%) suggested that they usually visit to hospital when they change shifts from day to night. 45(75%) stated that they experience gastrointestinal problems when they change their from day to night whereas 47(78%) indicated that changing shift from night to day made them feel stressed up. From these results, it is evident that the direction of shift rotation has an impact on the employee quality of work life.

The study further sought to determine other effects of shift work on employee quality of work life in their places of work. Employees made the following suggestions: some suggested that that shift work affect their financial stability in that it accords them an opportunity to attend more than one job and also due to the fact that shift work particularly night shift is paid twice the normal day shift. They also suggested that that working on shift reduce the rate of absenteeism since the employees are able to attend most of their outside work activities more so when the shift they are working on are convenient. Other noted effects of shift work on employee quality of work life include; job performance, productivity, and job satisfaction.

The study further sought to establish recommendations that could minimize the effects of shift work on employee quality of work life. The question yielded the following recommendations: employees working on shift work should be well sensitized on the effects of shift work employee quality of work life. They should be well advised on the effects of shift work on employee’s quality of work life. They should be well informed on the appropriate shift schedules. Employers should come up with the appropriate shift schedules that best suits the employees. The employees should work on given shifts at their own liberty. The government should come in to regulate the practice of shift work and the number of hours the shift employees are supposed to work, and the employer should provide appropriate working conditions for the employees working on shift work schedules more so night work shifts. Workers union should be on tolls to ensure that the quality of work life of the employees is upheld at all times.
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

This chapter presents the findings, conclusion and recommendations arrived at. The chapter also presents suggestions for related studies that could be carried out in the future.

5.2. Summary of Findings

The study was to investigate the effect of shift work on employee quality of work life in New Wide Garments EPZ Kenya Ltd. The study aimed at determining different aspects of shift work i.e. type of shift work, shift duration, frequency of shift rotation and the direction of shift rotation affect employee quality of work life in New Wide Garments EPZ Kenya Ltd. Related literature review was used to guide the study to make conclusion. The study employed random sampling procedure to select employees who provided relevant data for study. The sample consisted of 60 employees from a target population of 200 employees of New Wide Garments EPZ Kenya Ltd.

The researcher applied statistical package for social sciences to analyze the data. Descriptive statistics such as frequencies and percentages were used to summarize the data. The researcher focused on four main determinants of quality of work life namely; family and social life, psychological and physical well being and work life balance. From the analysis, the study summarized the following: From the findings it was established that workers would prefer working on a fixed schedule. The reason being that they are able to know from day to day what type of routine they are following. This provides workers with a sense of security because in this way their work hours do not dictate their lives. Working fixed schedules means being able to know with certainty when to do the house hold chores, and when appointments can be made. Workers are able to structure their life styles in an orderly fashion. Workers would prefer working on fixed schedules where they can plan for recreational time with their families.

From the results on employee's assessment on their quality of work life in EPZ, it was clear that according to their response that their quality of work life was compromised. Most employees agreed that shift work shift work affects their quality of work life. Whether type of shift work affect employee quality of work life, the study found that the type of shift work
affects employee quality of work life. For instance, the study established that shift work interferes with employee’s social, family and leisure time. In sum, the study reveal that working night shift is burdensome because it negatively affects their sexual relations and this corresponds to what has been found in research by Monk and Folkard (1992). Furthermore, the study reveals that shift workers do not like working the night shifts because it affects their quality and quantity of sleep. Night shift work also interferes with the time spend with family. Workers find it hard to cope at home because of different work schedules they have with their spouses. Most of the respondents revealed that their marital relations are negatively affected by shift work. They claimed that night shift work interferes with the time spend with the spouses. It causes more arguments, and that their sexual relations are adversely affected.

On the effect of the frequency of shift rotation on employee quality of work life, most of the employees noted that frequent shift rotation affected their social hours thus affecting their marital lives and inducing them to stress. It was noted that workers who frequently changed their shifts had an increase in drug and substance intake to alleviate the stress. As a result of frequent rotating shift schedules, nothing is planned ahead of time, due to the fact that their work schedules may conflict with planned leisure activities. So, for these workers, their home life and social life is usually on stand-by. In other words things can only be planned at a moment’s notice.

On the effect of shift duration on employee quality of work life, it was established that extended hours of work unfavorably affected employee’s health and recovery time. From the results most of the respondents noted of experiencing backache and headache for working for long shifts. Employees also noted that they experienced fatigue and frequently visited hospital as a result of the same. On the effect of the direction of shift rotation on employee quality of work life, majority of the employees noted that changing shift from day to night was more preferable compared to changing from night to day. This direction was associated with fewer physical, social, psychological problems, reduced fatigue and improved sleep quality.

The study also found other effects of shift work on employee quality of work life which include effect on job performance, job satisfaction, employee turnover, productivity and rate of errors at the place of work.

On the recommendations that could be put in place to minimize the effects if shift work on employee quality of work life, the study found out that those employees working on shift
work should be well sensitized on the effects of shift work employee quality of work life. They should be well advised on the effects of shift work on employee’s quality of work life. They should be well informed on the appropriate shift schedules. Employers should come up with the appropriate shift schedules that best suits the employees. The employees should work on given shifts at their own liberty to ease stress on them as a result of working on shifts they did not like. The government should come in to regulate the practice of shift work and the number of hours the shift employees are supposed to work, and the employer should provide appropriate working conditions for the employees working on shift work schedules more so night work shifts. Workers union should be on tolls to ensure that the quality of work life of the employees is upheld at all times. Government also ought to come with policies regulating the practice of shift work and actions be taken to firms who are not in a position to uphold the laid down procedures on shift work and employees quality of work life.

5.3. Conclusion

A number of conclusions can be drawn from this study. The Quality of work life of the employees of Export Processing Zones, Athi-river is poor and this indeed puts them in a jeopardizing situation. The researcher made the following conclusions based on the findings of the study and as supported by the literature review: Majority of the employees in EPZ experience poor quality work life and this among other factors is attributed to the poor practice of shift work schedules. Type of shift especially night shift affect employee health and quality and quantity of sleep simply because our bodies are designed by nature to expect wakefulness during the day and restful sleep during the night and most employees find it hard to adopt to this change of biological clock. Shift duration, frequency of shift rotation and direction of shift rotation could also affect employees if not well designed and implemented. The researcher also established that shift is advantageous to employees in that they can have multiple jobs, can have time off duty and the employer can ensure continuous production and minimize the cost of production. However, shift work if not well managed can have adverse effects on employee quality of work life.

Though the practice of shift work has been on the rise in the recent years, little has been done to provide the employees with the best shift practices that are adaptable and less disadvantageous. HR managers and the employee’s needs to be well sensitized on the repercussions of shift work on employee’s quality of work life. Hence the HR managers
should come up with the appropriate shift schedules that the employees can adapt and be comfortable working on.

5.4. Recommendations

The findings of this study have significant implications for HR practitioners and therefore the study recommends the following. First, since shift work is likely to result in ineffective communication making it difficult for employees to understand management strategies or to develop strong leadership, how to improve communication with and between shift workers therefore should become a major concern of managers in industries that have shift work rosters. Second, the management should provide regular on-the-job training to shift workers on safety, time and work stress management and healthy diet so that they become better informed and better equipped to handle the job. Training is particularly important to young employees and those who have been working shifts for a short period. Also, due to the fact that shift work has costs in terms of disadvantaging workers in missing out on their social and family lives, companies should provide some form of social and family counseling or organize occasional social events in order to increase employees’ job satisfaction and morale, and reduce absenteeism and employee turnover. Management should improve the workplace facilities, especially catering, and health in order to reduce the negative impacts of shift work on workers’ health (i.e. diet) and to improve employee morale and job satisfaction. Worth mentioning is the issue of working conditions. If the working conditions in the work environment are conducive for employees then the effects accruing from shift will surely be minimized. Government should also come in and play a critical role in ensuring that the factors that compromise employee’s quality of work life are well regulated.

5.5. Suggestion for Further Research

The study examined the effects of shift work on employee quality of work in New Wide Garments EPZ Kenya Ltd in Machakos County. For further understanding on how shift work affects employee quality of work life, further research should give attention to the following:

1. A study on the long term effects of shift work on employees in Cement Industry
2. A study on the factors contributing to adoption of shift work in leather Industry
3. A study on the effects of shift work on employee performance and productivity
4. A study on factors contributing to poor quality work life in Export processing zones
REFERENCES


Bohlander, George w & Hinman, Felicitas (1977), Flextime- a New Face on the work clock-Policy and practice publication. Institute of Industrial Relation, University of California Los Angeles.


Dawen Tylor, (2005), Human rights still under threat in Export Processing zones. Inter Press service.


Fletcher, A. (2000). Laboratory based validations of work related fatigue model based on hours of work. Frankfurt, German.


Olmsted, B. (1994), Creating a Flexible Workplace, New York: AMACOM


Shen and Dicker, (2008): Impact of shift work on employees, Department of Management, Faculty of Economics and Management, Monash University, Melbourne, Australia


Tucker p. Smith (1998), Comparison of eight and twelve hour shift: Impact on health,
wellbeing, And alertness during shift.


Worrall, L & Cooper C.L. 1999. Working pattern and working hours: Their impact on UK Manager’s leadership & organizational development Journal
APPENDICES

APPENDIX I

LETTER TO THE RESPONDENTS

Dear Respondents,

I am a postgraduate student studying Masters of Business Administration, School of Business Kenyatta University. I am presently conducting a research on the effect of shift work on employee quality of work life in New Wide Garment EPZ Kenya Limited. The purpose of this letter is to request you to fill in the questionnaire. Note that the information provided by you will be treated in strict confidence and at no time will your name or that of organization be referred directly. This information will be used for academic purpose only.

Yours Sincerely,

Elijah Kimeu
APPENDIX II: QUESTIONNAIRE

This questionnaire has been drafted for the sole purpose of helping the researcher to investigate the effect of shift work on employee quality of work life. The information requested herein is needed for academic purposes only and will be treated with strict confidence.

Kindly respond by ticking [✓] in the boxes provided or by writing a brief statement in the spaces provided.

Section I: Background of Respondents
1. Gender: Male [ ] Female [ ]
2. Your age in years
   30 and below ( ) 31-40 ( ) Above 40 ( )
3. Highest Education level:
   Primary ( ) Secondary ( ) College ( ) University ( )
4. Work Experience:
   Less than one Year [ ] 1 to 5 Years [ ] 6 to 10 Years [ ] Above 10 years ( )

Section II: Shift Scheduling
5. Do you work a fixed shift or rotating shifts?
6. Which of the shift or shifts do you usually work (i.e. day or night)?
7. What are hours you usually work (8hrs or 12hrs)
8. Do you feel satisfied or dissatisfied with the number of hours you usually work?
9. Given the choice would you prefer to work a fixed or rotating shift?
10. Why would you prefer to work a fixed shift/rotating shifts?

SECTION III: Employee Quality of Work Life

In the table below, various statements are provided regarding employee quality of work life. Please circle the one that suits you best.

1. It is hard to take time off during your work to take care of personal or family matters
   a. Strongly agree
   b. Agree
   c. Disagree
   d. Strongly disagree
   e. Neutral
2. The demands of my job often interfere with my family life
   a. Strongly agree
   b. Agree
   c. Disagree
   d. Strongly disagree
   e. Neutral

3. The safety and health conditions where I work are good.
   a. Strongly agree
   b. Agree
   c. Disagree
   d. Strongly disagree
   e. Neutral

4. Conditions on my job allow me to be about as productive as I could be
   a. Strongly agree
   b. Agree
   c. Disagree
   d. Strongly disagree
   e. Neutral

5. I am satisfied with the working conditions provided by my company
   a. Strongly agree
   b. Agree
   c. Disagree
   d. Strongly disagree
   e. Neutral

6. I have an opportunity to develop my own special abilities
   a. Strongly agree
   b. Agree
   c. Disagree
   d. Strongly disagree
   e. Neutral

7. At the place where I work, am treated with respect
   a. Strongly agree
   b. Agree
   c. Disagree
   d. Strongly disagree
   e. Neutral

8. Am happy working for my employer
   a. Strongly agree
b. Agree
c. Disagree
d. Strongly disagree
e. Neutral

9. On my job, I know exactly what is expected of me
   a. Strongly agree
   b. Agree
   c. Disagree
d. Strongly disagree
e. Neutral

10. The working environment in my company is motivating
   a. Strongly agree
   b. Agree
c. Disagree
d. Strongly disagree
e. Neutral

**Section IV: Effects of Shift Work on Employee Quality of Work Life**

In the table below, various statements are provided regarding effects of shift work on employee quality of work life. Please indicate the extent to which you agree or disagree with each statement by placing a tick [✓] where appropriate. Use the following scale to respond.

SA-Strongly Agree A-Agree N-Neutral D-Disagree SD-Strongly Disagree

<table>
<thead>
<tr>
<th>11. Type of Shift</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. My relationship is negatively affected by the type of shift I work</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>b. My shift doesn’t allow me to have enough time with my spouse/mate</td>
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<tr>
<td>c. I do not get the value I deserve for the kind of work I do in my shift</td>
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<tr>
<td>d. Working at night has caused me to experience problems with my health</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
e. Working at night affect the quality of my sleep

<table>
<thead>
<tr>
<th>12. Duration of Shift</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Am not satisfied with the number of hours I work</td>
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<tr>
<td>b. I often get fatigued working long shifts</td>
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<tr>
<td>c. I have had an increase in headache, backache etc as a result of working long hours</td>
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<td></td>
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<tr>
<td>d. I do not have enough time to get my job done</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Working long hours affect my concentration at work</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>13. Frequency of shift rotation</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I have trouble going to sleep/waking up after changing my shift</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>b. My sexual relations is negatively affected by shift rotation</td>
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<tr>
<td>c. I have become addicted to smoking, drinking, caffeine and other kinds of chemical intake</td>
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<tr>
<td>d. I have experienced weight loss/gain</td>
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<tr>
<td>e. Shift rotation interfere with my leisure activities</td>
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</table>

<table>
<thead>
<tr>
<th>14. Direction of Shift rotation</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I sleep do not adequately when I change shift from day time to night</td>
<td></td>
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</tbody>
</table>
b. I feel more fatigued when I change shift from day time to night shift

c. I often visit to the hospital with when I change my shift to night time

d. I experience gastrointestinal problems when I change my shift from night to day

e. I feel stressed up changing my shift from night to day

15. Please indicate other effects of shift work that you have experienced in your place of work

_________________________________________________________________________________________________________________

_________________________________________________________________________________________________________________

_________________________________________________________________________________________________________________

_________________________________________________________________________________________________________________

_________________________________________________________________________________________________________________

Section V: Recommendations

16. What do you think could be done to minimize the effects of shift work on employee quality of work life?
_________________________________________________________________________________________________________________

_________________________________________________________________________________________________________________

_________________________________________________________________________________________________________________

_________________________________________________________________________________________________________________

Thanks so much for your time and cooperation
APPENDIX III

Work Plan for the Project

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<th>Activity/Month</th>
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<th>3\textsuperscript{rd}</th>
<th>4\textsuperscript{th}</th>
<th>5\textsuperscript{th}</th>
<th>6\textsuperscript{th}</th>
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<tr>
<td>Report Writing</td>
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<tr>
<td>Finalization and</td>
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<tr>
<td>Submission of Report</td>
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## APPENDIX IV
### Budget Estimates

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<th>Item</th>
<th>Unit Cost@</th>
<th>Cost(Kshs)</th>
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<td>Printing of Proposal</td>
<td>51pages @ Kshs. 10 by 6copies</td>
<td>3060</td>
</tr>
<tr>
<td>Photocopying</td>
<td>6 Copies, 80pgs @ Kshs.2</td>
<td>960</td>
</tr>
<tr>
<td>Traveling Expenses</td>
<td></td>
<td>6000</td>
</tr>
<tr>
<td>Computer Services</td>
<td>Internet &amp; typing</td>
<td>8000</td>
</tr>
<tr>
<td>Binding</td>
<td>6copies@ Kshs. 80 by 2</td>
<td>960</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>Item</td>
<td>7000</td>
</tr>
<tr>
<td>Printing and photocopying of Research Report</td>
<td>Item</td>
<td>2000</td>
</tr>
<tr>
<td>Binding of Final Report</td>
<td>Item</td>
<td>4000</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>Item</td>
<td>5000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>36,960</strong></td>
</tr>
</tbody>
</table>
APPENDIX V: List of firms in Export Processing Zones, Athi-River Town

1. New Wide Garments EPZ Kenya Ltd
2. Rupa Cotton Limited
3. Botanical Extracts EPZ Ltd
4. Celebrity Fashion K. EPZ Ltd
5. Future Garments EPZ Ltd
6. Global Apparels (K) Ltd
7. Ricardo EPZ Ltd
8. Altex EPZ Ltd
9. Global EPZ Kenya Ltd
10. Nodo EPZ Kenya Ltd