

# The Impact of Work Design and Stress on Employees Productivity at a Call Centre

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**Abstract**—Work design represents an arrangement in the workplace that has the objective of overcoming employee alienation and job dissatisfaction that come about from mechanical and repetitive tasks in the workplace. This is important in the call centre working environment where employees spend long hours seating and providing high concentration to work activities. This paper discusses the application of work design principles and its impact on employees in an organisation in order to improve the productivity of a call centre. Qualitative questionnaires, observations and interviews were applied to employees of the call centre with a focus on identifying design problems and main stressors at work. The findings in this research focus on the need to improve equipment, tools and the health of employees. The paper demonstrates how work design can have an influence on employees' productivity and how it can increase stress levels.

**Keywords**—Ergonomics, productivity, stress, and work design.

## I. INTRODUCTION

WORK design is a wide topic which involved a lot of controversy and popularity due to the fact that work design affects the workers everyday in the workplace. Work design allows employees to see how their work methods, layout, and handling procedures link together as well as the interaction between people and machines. Job design is the process of structuring work and designating the specific work activities of individual or group of individuals to achieve certain organisational objectives [1].

Today work design can be a major source of stress for employees in an organisation. Stress is present everywhere, and can be found in many organisations like: hospitals, enterprises, universities, and others organisations. Stress can be caused by many factors which can be related to work or personal life. Stress is an interaction between an individual and the environment characterized by emotional strain that affect a person's physical and mental condition [2].

In the work design, there are stressors that have a negative impact on the performance of employees. The stressors are the following: long hours, work overload, time pressure, and lack of variety in the job. Also others stressors are: job insecurity, low pay, poor career prospects, empowerment, lack of

participation in decision-making and non work-related events.

Many people spend most of their time indoor's which greatly influence their mental status, actions, abilities and performance. Better outcomes and increased productivity is assumed to be the result of better workplace environment. Better physical environment at the office can boosts the employees and ultimately improve their productivity.

The growth of call centres in South Africa has been somewhat controversial. On the one hand, national government and regional economic development agencies see call centres as a valuable source of jobs and economic development in a labour intensive industry. Firms and companies see remote, technology mediated call centres as a cost effective way of providing services and sales to customers at a distance. Similarly, customers may gain from new or lower cost services. On the other hand, consumers often complain about low quality service in at least some call centres, while unions and some analysts express concern about stressful working conditions.

## II. LITERATURE REVIEW

### A. Work design

Work design, also known as job design, is a relatively new science that deals with designing the task, workstation, and working environment to fit the human operator better [3]. According to these authors, work design is typically known as human factors in the United States, while the term ergonomics is used internationally. Designing the workplace, tools, equipment, and work environment to fit the human operator is called ergonomics. DuBrin (2006) defines the notion of work design differently. This author views job design as the process of laying out job responsibilities and duties and describing how they are to be performed [4].

The importance of job design also comes from its potential for motivating workers. There are four types of work design which are: the motivational approach, the biological approach, and the mechanistic approach.

The motivational approach to job design makes the job so challenging and the worker so responsible that the worker is motivated just by performing the job. The motivational approach includes more challenges and responsibility in jobs to make them more appealing to employees [4].

The biological approach is based on ergonomics and focuses in minimising physical strain on the workers. It does so by reducing strength and endurance requirements and

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making improvements to upsetting noise and climate conditions [4].

The mechanistic approach emphasises total efficiency in performing a job. This approach assumes that work should be broken down into highly specialised and simplified tasks that involve frequent repetition of assignments. It is described by job specialisation which is the degree to which a job holder performs only a limited number of tasks [4].

Job design also includes the following:

- Job enlargement changes the job to include more different tasks and should add interest to the work but may or may not give employees more responsibility [4]. Job enlargement involves putting more variety into a worker's job by combining specialized tasks of comparable difficulty. This technique was first used in the late 1940s in response to complaints about tedious and overspecialized jobs [7].

- Job rotation moves employees from one task to another and distributes the group tasks among a number of employees. Similarly, job rotation involves creating more variety for employees. Job rotation allows workers to periodically change jobs, by moving them from one specialty to another specialty [7].

- Job enrichment allows employees to assume more responsibility, accountability, independence when learning new tasks or to allow for greater participation and new opportunities [4].

There are principles of work design that must be considered in order to fit the task and workstation to the human operator [3]. Determining work surface height by elbow height and adjusting the work surface height based on the task being performed are key principles. Providing a comfortable chair with adjustability for the seated operator, to encourage postural flexibility and to provide anti-fatigue mats for a standing operator are equally important principles. Also another crucial principles are to locate all tools and materials within the normal working area, to fix locations for all tools and materials to permit the best sequence and to arrange tools, controls and others components optimally to minimize motions [3].

Some problems can still persist despite work design being properly implemented. There are also serious drawbacks to highly divided jobs:

- Monotony: the shorter the task, the more often operators will need to repeat it. Repeating the same task, for example every 30 seconds, eight hours a day and five days a week, can hardly be called a fulfilling job [5].

- Physical injury: the continued repetition of a very narrow range of movements can, in extreme cases, lead to physical injury. The over-use of some parts of the body (especially the arms, hands and wrists) can result in pain and a reduction in physical capability [5].

- Low flexibility: dividing a task up into many small parts often gives the job design a rigidity which is difficult to change under changing circumstances. For example, if an assembly line has been designated to make one particular product but then has to change to manufacture a quite

different product, the whole line will need redesigning [5].

- Poor robustness: highly divided jobs imply materials or information passing between several stages. If one of these stages is not working correctly, for example, because some equipment is faulty, the whole operation is affected [5].

Ergonomics in the office: as the number of people working in offices has increased, ergonomic principles have been applied increasingly to this type of work, at the same time; legislation has been moving to cover office technology such as computer screens and keyboards [5].

Behavioural approaches to job design: the ideas and concepts concerning motivation theory contribute to the behavioural approach to job design. Jobs which are designed purely on division of labour, scientific management or even purely ergonomic principles can alienate the people performing them. Job design should also take into account the desire of individuals to fulfil their needs for self-esteem and personal development. This achieves two important objectives of job design which are: first, it provides jobs which have an intrinsically higher quality of working life an ethically desirable end in itself. And second because of the higher levels of motivation, it engenders, it is instrumental in achieving better performance for the operation, in terms of both the quality and the quantity of output [5].

The work environment design should provide good, safe, comfortable working conditions for the operator. Experience has conclusively proved that plants with good working conditions out produce those with poor conditions. The economic return from investment in an improved working environment is usually significant. In addition to increasing production, ideal working conditions improve the safety record, reduce absenteeism, tardiness, and labour turnover, raise employee morale, and improve public relations [6].

This method is generally referred to as horizontal loading. The objective is to make the job more appealing and rewarding. Job enlargement allows employees to identify their contributions to the overall production of products and goods: Proponents of job enlargement claim it can improve employee satisfaction, motivation, and quality of production. Unfortunately, research reveals that job enlargement, by itself, does not have a significant and lasting positive impact on job performance. Researchers recommend using job enlargement as part of a broader approach that uses multiple job design techniques [7].

Work design has its consequences on employees by affecting the way they perform their duties. One of the consequences is stress.

### *B. Stress management*

Stress can be related to job activities or to events occurring away from work. It is very difficult to separate their work and personal lives. People have different ways to react and handle stress at work. Some factors can engender stressful work activities like technological change, downsizing, sudden reorganisations and expected changes in work schedules [8].

Others factors as competition, lack of participation in decision making, empowerment can influence the way employees feel at work. Also conflicts with other people, immediate supervisor, not having enough time to do expected duties are factors at work that have an impact on employees. Finally the violence in the workplace and no work- related events can increase the level of stress of employees [8].

Stress has been defined in different ways over the years. Originally, it was conceived of as pressure from the environment, then as strain within the person. The generally accepted definition today is one of interaction between the situation and the individual. It is the psychological and physical state that results when the resources of the individual are not sufficient to cope with the demands and pressures of the situation. Thus, stress is more likely in some situations than others and in some individuals than others. Stress can undermine the achievement of goals, both for individuals and for organisations [9].

The workplace factors that have been found to be associated with stress and health risks can be categorized as those to do with the content of work and those to do with the social and organisational context of work. Those that are intrinsic to the job include long hours, work overload, time pressure, difficult or complex tasks, lack of breaks, lack of variety, and poor physical work conditions (for example, space, temperature, light) [10].

Each category has its own stressors which are:

- For job content, the stressors are: work over-load or under load, complex work, monotonous work, too much responsibility, dangerous work, conflicting and ambiguous demands.
- For working conditions, the stressors are: toxic substances, poor conditions (noise, vibrations, lighting, radiation, and temperature), work posture, physically demanding work, dangerous situations, lack of hygiene and lack of protective.
- For employment conditions, the stressors are: shift work, low pay, poor career prospects, flexible labour contract, and job insecurity.
- For social relations at work, the stressors are: poor leadership, low social support, low support, and low participation in decision making, liberties and discrimination [11].

An examination of various South African newspapers provides a clear overview of the job requirements confronting members of the South African Police Service (SAPS), who are faced with various extraordinary incidents on a regular basis. These incidents include domestic violence, murder, suicide, internal and external corruption, riots, disaster management, law enforcement situations, cash-in-transit heists, sexual offences and road accidents. Exposure to these situations increases police members' risk of experiencing stress-related psychological, physical and social disorders such as depression, post-traumatic stress disorder, cardiovascular disorders, digestive disorders, and alcohol and drug abuse

[12].

### III. METHODOLOGY

#### A. Observations

Observations in the qualitative study are intentionally unstructured and free-flowing: the researcher can shift focus from one thing to another as new and potentially significant objects and events present themselves. The primary advantage of conducting observations in this manner is flexibility. The researcher will take advantage of unforeseen data sources as they surface [13].

To conduct observations as part of a qualitative study:

- The researcher did the following: the researcher made the use of notes and audiotapes. The researcher asked the manager to introduce us to the people he wants to watch.
- The researcher described briefly our study and get participants 'consent.
- During the observation, the researcher remained quiet and inconspicuous, yet be friendly to anyone who approached us. The researcher wanted to encourage people to develop relationships with us and to take us into their confidence.
- And the researcher took field notes; we divided each page of our notebook into two columns. The researcher used the left column to write our preliminary interpretations [13].

By doing observations, the researcher wanted to see how employees fit in the workplace. The researcher, also wanted to know the working condition in the company. Finally what kind of environment the employees are exposed to everyday.

#### B. Interviews

Interviews can yield a great deal of useful information. The researcher will ask questions about people beliefs and perspectives about facts, feelings, motives, present and past behaviours, standards for behaviour and conscious reasons for actions or feelings. Interviews in a qualitative study are rarely as structured as the interviews conducted in a quantitative study [13].

To conduct a productive interview, we will do the following:

- Identify some questions in advance. An unstructured interview effectively required considerable experience and skill. The researcher must sense when the conversation is drifting in an unproductive direction and gently guide it back on course. The researcher prepared few questions in advance that had been related to the question problems.
- The researcher encouraged people to talk about a topic without hinting that they give a particular answer. The researcher considered how participants 'cultural backgrounds might influence their responses. The researcher made sure your interviewees are representative of the group by choosing people whom the researcher expects to give our typical perceptions and perspectives.
- The researcher found a suitable location, a quiet place where we and our interviewee are unlikely to be distracted or interrupted. The researcher got written permission by

explaining the nature of the study and our plan for using the results. The participants signed an informed consent form. The researchers established and maintained rapport by beginning the conversation with small talk that can break the ice.

- The researcher focused on the actual rather than on the abstract or hypothetical. We did not put words in people's mouths by letting people choose their own way of expressing their thoughts. A good interviewer is above all, a good listener who lets people say what they want to say in the way they want to say it [13].

The researcher interviewed twenty people for 15 minutes. The researcher needed to go deeper regarding employees feelings, emotions in the organisations. Also the researcher found out that some employees were not comfortable in their jobs, and were stress about the working condition they are exposed to in the company.

### *C. Questionnaires*

The questionnaire can be viewed as a restricted channel of communication and hence that should be used with great care for the purpose of fact finding. It does not give an immediate opportunity to readdress comments like the interview [13].

The researcher gave questionnaires to the participants and time to answer all the questions. Participants could respond to questions with assurance that their responses would be anonymous. The responses may be more truthful than they would be in a personal interview, especially when addressing sensitive or controversial issues. But questionnaires have their drawbacks such as: the majority of people who receive questionnaires do not return them and the people who do return them are not necessarily representative of the originally selected sample [13].

The researcher distributed two different types of questionnaires to employees. The first type was questions based on work design and the second one was based on work related stress. The researcher gave the questionnaires to twenty workers in the organisation.

## IV. CASE STUDY, DATA COLLECTIONS AND DESIGN

### *A. Company background*

Radio Television Marketing is a call Centre from Canada based at Midrand, it was created in 2001 for the purpose of recording, typing, and sending back the message that people leave on their voicemail in French and English. In the company, they recruit both people who speak French and English. There are different sections in the company which are: the English section and the French section. Those sections receive different messages from people overseas. In the French section, the messages are from Canada and are in French from their French side and the messages are translating in French from France so that others French people can understand it properly. And in the English, the messages are in French and then translated in English for English people in Canada.

### *B. Work design related problems*

There are some employees who were suffering from carpal tunnel syndrome and low back pain.

For the carpal tunnel syndrome:

Employees complained about the pain and numbness, one on the middle finger and the others the thumb was involved. These problems were caused by the carpal tunnel syndrome because during repetitive hand motions such as typing, the tendons became irritated causing swelling and inflammation within sheath.

Another fact was that, these employees worked for long periods of time without interruption, they felt uncomfortable while in front of their computer screens. The people who are sick had difficulties to perform their job successfully and took longer times to finish their daily tasks. This affects the daily routine of the company.

For the low back pain:

Because the chairs are so uncomfortable, some employees were suffering from low back pain and complaining about nerve irritation which is where the nerve of the lumbar spine was irritated by mechanical impingement or disease anywhere along their paths, from their roots at the spinal cord to the skin surface it made them uncomfortable while working.

### *C. Stress related problems*

At Radio television marketing, employees are under a lot of stress because of work overload, working condition which include: work posture, the physical demanding work. Some employees were stress about the low pay because the salary could not cover all their expenses and it affect the way employees work.

Another group of persons complained about the poor career prospects and was stress about that. Employees did not have enough career prospects; they perceived that they were not going far with their job. They were stress about job rotation and enrichment from the organisation.

## V. RESULTS AND RECOMMENDATIONS

### *A. Results based on work design*

This investigation revealed that employees who were complained about the computers, the desks and the chairs, the organisation decides to change all the equipment because of all the complaints. The management spent a lot of money to change everything that need to be updated in the organisation. The company needed new equipment like: ergonomics keyboards, ergonomics chairs, and ergonomics computers. Management took the decision to use of ergonomics office furniture will have many benefits for both the employees and employer. Ergonomics office furniture could help the organisation to make more money and employees to get raises. With ergonomic furniture in mind, employees would be more comfortable at work, to enjoy their more, and to be more productive. Management realized that ergonomic office furniture's are important to improve their productivity.

The investigation revealed that employees who suffered

from the carpal tunnel syndrome and the low back pain where sent to the hospital to receive treatment when those workers were sick and away, it caused delay in the way activities were performed. Being aware of the consequences of this situation, management decide to replace and adjust the keyboards, computer screens, and others equipment in order to create a good and healthy working environments. Employees at RTM were satisfied and relieved because the call center took their health conditions into consideration, created a working environment that is safe and saw the importance of implementing ergonomics principles.

### *B. Results based on stress*

Management realized during this investigation that employees were put under a lot of stress that were affecting the quality of their work and the productivity of organisation. They realized that they needed to something about some of issues that were stressing the employees, and they decided to change their relationship with their employees, they wanted to be more open to their employees. They have a group discussion with employees so that they will know exactly what the issues that put them under stress, and think of a way to improve the situation. At the beginning, employees thought that the organisation did not care about the way they feel and just want to make profit and did not want to do something about the issues that stress them. In return, the company starts to demonstrate concern about the welfare of their employees, not just for the work. The organisation decided to make the use of method to be able to deal with stress. The methods are: counselling, etc.

### *C. Recommendations*

The company should buy new equipment and the equipment should be office ergonomics furniture for every employee even the one who does not complaint to prevent more problems to come concerning the ergonomic. The company should change the chairs to ergonomic chair that should contain armrest that may be adjusted to different heights according to the individual's physical measurements.

Also the organisation should buy ergonomics computer and ergonomic desk to make the workers comfortable while doing their job. The office should be redesign to suit the employees better to be more comfortable so that they will not be stress by the work design. The organisation needs to buy equipment that can protect employees' sight when they exposed to computer light.

Regarding the physical injuries, the organisation should buy ergonomics chairs for the employees who are suffering from low back pain. An ergonomic chair where the backrest of the chair should meld to the individual's back to support the spine and that have a small pump that allows the lumbar support to be inflated or deflated according to the user's need. An ergonomic chair should be highly adjustable including not just a knob for lowering and raising the chair but adjustability I the back tilt and the height of the arm rests. It should also have a sturdy frame, a great deal of support, especially in the lumbar

region and padding that has some give and supports the body without losing shape.

All employees with carpal tunnel syndrome should avoid repetitive motions of the wrist and hand. For instance, those who utilize computers daily significantly decrease symptoms by maintaining proper wrist positioning while typing.

The company should make the use of some job techniques to reduce stress and help boost employees' morale. The organisation should adopt reinforcement techniques that will reward employees who excel, they should encourage feedback, and they should explore health related options like wellness program and insurance incentives. The company should incorporate an outside facilitator or coach into the employees program. Personal are more willing to provide input to an outside source and supervisors will gain from receiving anonymous feedback. The organisation needs to have a design strategy that included support spaces such as meditation, exercise, and relaxation rooms. These rooms would provide employees with comfortable, stress-free venues to enhance creativity and productivity.

## VI. CONCLUSION

In an organisation, it is important to have healthy employees that give their best every single day. The comfort of employees must be one of the primary objectives of an organisation, so that employees will produce the best and the organisation will make profit. This investigation puts its attention on the work design related problems, and how work design can cause stress to employees in an organisation.

During the investigation, employees were actually observed even of some of them were a little reluctant and the main problems affecting employees' health conditions and job performances were addressed. In order to come up with ideas that helped the company acquire adequate equipment to satisfy employees 'needs, each problems were given specific solution that at least put the employees at ease while working.

Also, the investigator made the use of observations, interviews, and questionnaires to have the views of employees regarding the issues concerning work design and how their work increase their stress. The researcher collected information to understand the way the organisation works, by having an understanding of employees behaviours at the workplace. Information were gathered about problems in the workplace. It was found that many employees were stress about their job and it was affecting the way they performed their jobs. It was also found that the working conditions in the workplace did not fit the employees properly and was affecting their health . some were suffering of carpal tunnel syndrome and others low back pain. The researcher also paid attention to work stress issues as: low pay, work overload, working conditions (work posture and physical demand of the work).

The researcher used differents books on work design and stress to have more knowledge on the subject. Possessing that knowledge helped him explain and handle questions of

manager and employees with more tact. The literature review was very useful to the research because there was the need to know about what different authors said about work design and stress.

The researcher examined every piece of information that he gathered in the organisation and proposed solutions to help the manager to improve the productivity of employees based on the case study of the investigation.

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