THE EFFECTS OF ASSEMBLY LINE-SIDE SUPPLY ON INDIVIDUALS
EMPLOYED IN SATELLITE OPERATIONS WITHIN AUTOMOTIVE
MANUFACTURERS

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Declaration

I, Carlo Bocchi, hereby declare:

- The work in this research paper is my own original work;
- All quoted sources quoted have been documented and acknowledged;
- This paper has not been previously submitted in full or partial fulfilment of the requirements for an equivalent or higher qualification at any other institution.

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Carlo Bocchi 2nd December 2001
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Abstract

The adoption of just-in-time in satellite operations within an automotive manufacturer, is rapidly becoming a trend within motor industry clusters. This type of organisation within an organisation adopts a lean structure to operate effectively and efficiently. The objective of this paper is to unveil factors which influence this type of workplace, particularly focusing on which factors which are relevant to Faurecia East London Plant. The literature study was used to illustrate the various theories relevant to manufacturing techniques, employee motivational and job satisfaction theories. The empirical study tested factors illustrated in the literature study. The empirical study was also used to develop a specific model suitable for satellite organisations. The model presented together with the literature and empirical study was used to formulate findings and solve the main and sub-problems.
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Chapter 1

Introduction, Problem Statement, and Research

Methodology

1.1 Introduction

In modern automotive manufacturing new approaches to just-in-time supply have been developed. As part of the outsourcing activities performed by the Original Equipment Manufacturers (OEM's), suppliers are brought to a just-in-time method of supplying components and, in some cases, built up sub-assemblies. The creation of satellite assembly units within reach of the assembly line and often alongside the assembly line, has geared manufacturers to the shortest possible assembly time.

Stock holdings are reduced and supply chains have been shortened, resulting in the reduction of logistical supply chains. This demands flexibility in the organisation as departments find that the involvement of employees has greatly increased with the increase in the degree of their responsibility and scope of work. With limited margin for error, the suppliers and assembly line workers depend on each other.
The pressure is thus moving towards error-free performance, as everyone becomes aware of the effects of their actions and the influence on others in the value chain of the manufacture of the final product.

This mounting pressure has shown both positive and negative effects on employee satisfaction. This research will deal with the investigation of such effects specifically in the supplier environments.

The concept of suppliers operating satellite operations within an OEM’s plant, is a relatively new concept in South Africa. In a personal interview with Mrs Letchmee Naidoo, the Branch Manager of the East London’s Customs Office, the law currently forbids such a practice, as there are implications pertaining to the revenue structure for imported goods. In other countries such as Japan, United States of America or the European countries, this concept has been implemented for quite some time. According to Mr. Klaus Ladzik, Logistics Manager for the Faurecia Group in Germany, the concept of line-side supply within a motor manufacturer has been successfully implemented in many manufacturing plants around the world.
At the Daimler-Chrysler plant in East London an “Industrial Park” has been set up on site, with much resistance from the South African Revenue Services (SARS), but it facilitates just-in-time supply.

This assembly line side supply poses the question as to what factors management should focus on to motivate individuals operating in satellite operations. According to Herzberg’s “Hygiene Theory” the following factors increase job satisfaction as well as motivation:

- Achievement;
- Recognition for accomplishment;
- Challenging work;
- Increased responsibility; and
- Growth and development.

The absence of the above factors can contribute to the effect of de-motivation, according to Herzberg’s model (Hellriegel, Jackson & Slocum, 1999:471).

The National Clearinghouse on Child Abuse and Neglect Information published an article, *Increasing job satisfaction and preventing burnout* retrieved April, 25, 2001 from Http://www.calib.com/nccanch/database, regarding increasing job satisfaction and preventing burnout effects. The article deals with the positive
effects of job satisfaction as well as the causes for burnout. The article states that one of the causes for employee burnout is the excessive contact with the client. This factor plays an important role in the employees of line side suppliers, as contact with the client is the order of the day.

1.2 Main problem

WHAT ARE THE EFFECTS OF ASSEMBLY LINE-SIDE SUPPLY ON INDIVIDUALS EMPLOYED IN SATELLITE OPERATIONS WITHIN OEM’S?

1.2.1 Sub-problems

• What does the literature study reveal about influences/forces that affect employees’ satisfaction at work?

• What does a literature study reveal are the differences of the factors that lead to satisfaction and create a meaningful workplace in a manufacturing environment?

• What are the effects of employees being removed from their normal working environment and moved to satellite manufacturing sites within OEM’s?
What do knowledgeable people feel are the effects of satellite manufacturing on employees? How can management ensure that the above influences do not significantly affect the employees’ ability to operate effectively?

1.3 Delimitation of research

The research is limited to the following areas:

1.3.1 Organisation to be researched

The research is specifically directed to Faurecia SAI Automotive Autoplastic (Pty) Ltd, East London plant. The Faurecia Group has five plants in South Africa, with each unit operating independently. Subsequently, each plant is considered to be an independent business unit. Only the East London plant is considered for the study.

1.3.2 Level of management

This report deals mainly with the operational levels in the organisation and therefore middle management is the main source of information. The research will therefore concentrate on the operational aspects of line-side supply and the
effects on the individuals involved therein. However, middle and top management will also be interviewed in order to gather accurate and holistic information. In most cases, middle and top management have been involved in operational matters at some stage of their career and have been promoted. Their input is thus highly relevant to the investigation at hand.

1.4 Methodology

The research discussion will start with the study of theories and models relating to manufacturing, to give the reader a better understanding of the manufacturing structures adopted in automotive manufacturing. The literature study will investigate the relevant theories and models relative to Faurecia’s business structure. This will be covered in Chapter Two.

In Chapter Three the author will illustrate the 22 key factor model in detail. In Chapter Four the author will interview employees by means of a questionnaire regarding line-side supply. The questionnaire and questions will be based on information gleaned from the literature study.

In Chapter Five, the results of the questionnaire will be analysed. Statistical analysis, as well as the author’s observations, will be explained to solve the sub-
problems and ultimately the main problem of the study. In Chapter Six conclusions and recommendations will be illustrated by the author's own model.

1.5 Definition of terms

In order for ease of reading the following terms will be discussed:

1.5.1 Manufacturing process

According to Slack, Chambers, Harland, Harrison & Johnston, (1995:140), there are “general approaches” to manufacturing. The type and structure of the operation dictate the type of process applied. Because of the nature of Faurecia’s business, this clearly determines the type of manufacturing process being implemented. The argument is focused on the current process type and top management’s ideal process type and therefore its effects on the employees. According to Slack et al (1995:140), the most common manufacturing processes are:

- Project processes;
- Jobbing processes;
- Batch processes;
- Mass processes; and
• Continuous processes.

Because of the limitations of the study and the nature of Faurecia’s operation, the manufacturing system relevant to the study is batch processing. This type of operation plans and schedules production runs in variable batches or lot sizes, which are synchronized to achieve maximum output (Aquilano & Chase, 1991:641).

1.5.2 Synchronized manufacturing

The Venture Industries Handbook (2000:5) defines synchronized (or synchronous) manufacturing as: “Helping people to learn how to: produce the right product at the right time, in the right quantities, based on customer needs.” The fundamental concepts of synchronous manufacturing are described as follows:

• Customer driven in cost, quality and service;
• People doing the work, managing the workplace;
• Flexible production based on pull systems, short production runs and zero defects;
• Team approach with flexible, skilled workers working together;
• Mutual respect for one another; and
• Decisions and actions based on facts.

Adendorff, Botes, de Wit, Loggerenberg and Steenkamp (1997:138) note that synchronous manufacturing “...finds applications where components and sub-assemblies of finished products are manufactured by the same plant.” This statement is appropriate for the plant in East London, as different processes are used within the same organisation. Adendorff et al (1997:138) go on to describe synchronous manufacturing as a product manufacturing process that is matched to the production structure of the OEM in order to deliver a finished product and limit the work in progress.

The Venture Industries Handbook (2000:20) describes other main features of a synchronized plant. One feature referred to is empowerment i.e. giving decisional power to the people who are in close contact with the operation. The second main feature referred to, is the ability to identify problems quickly and to solve them in the shortest possible time.

The main objective of a synchronized system is to generate an organisation, which can compete in the global village. The organisation empowers its people, provides long-term success and security and develops a harmonious climate amongst its employees. In South Africa there is a need for positive organisational climates. Siegel (1999:20) explains that seventy-seven percent (77%) of South
Africans have been exposed to negative experiences and behaviour in the workplace. A positive atmosphere in the workplace is conducive to positive labour relations. In South Africa, labour relations play an important role as the country’s political situation impacts heavily on the productivity levels of organisations (Anstey, 1999:55).

1.5.3 Just-In-Time

The just-in-time theory is a component of both lean and synchronous manufacturing, but its core concepts form an important basis for both lean and synchronous manufacturing. Todd (1995:10) defines just-in-time as the process that “…involves the progressive reduction and elimination of relevant wastes by exposing fundamental problems… so they don’t keep on re-occurring.”

There are basic ground rules for just-in-time production: Todd (1995:10) identifies these as follows:

- Partnership sourcing (or supplier alliance);
- Zero defects (no waste);
- Make today what will be shipped tomorrow; and
- Involve everyone to eliminate any kind of waste.
Just-in-time is an essential basis for synchronous manufacturing, as waste reduction is an important aspect of productivity improvement.

1.6 Summary

In this chapter the main problem and sub-problems have been identified. The key terms were explained to introduce the reader to the topic being studied. Methods of research have been illustrated. The discussion will now focus on related theories on job satisfaction in the workplace.
Chapter 2

Manufacturing theories and employee satisfaction.

2.1 Introduction

This chapter comprises of two parts. The first part will illustrate related manufacturing theories, which will explain current trends in modern manufacturing. The second part of the chapter will describe classical motivational theories, which are related to the manufacturing environment. The theories explained in this chapter are:

Manufacturing related theories:

• Lean manufacturing;
• Goldratt’s Theory of Constraints (TOC);
• Kaizen theory; and
• World-class manufacturing.

Classical motivation theories:

• Maslow’s hierarchy of needs;
• Herzberg’s two factor theory;
• Hackman-Oldham job enrichment theory;
• The cultural web theory;
• McGregor’s X and Y theory; and
• Bavendam Research’s theory of job satisfaction.

Each will be discussed in detail below.

2.2 Overview of related literature

2.2.1 Lean Manufacturing

Lean manufacturing systems are similar to synchronous manufacturing systems as the lean theory includes the concept of synchronous flow of material. “Takt time and Continuous Flow-All operations should ideally build the pace of customer demand” (Likert 1999:29).

Todd (1995:11) refers to “World-Class” manufacturing instead of lean manufacturing, as the word “lean” does not describe the process sufficiently to cover all the aspects of this type of manufacturing system. The term “lean manufacturing” was first introduced by the Massachusetts Institute of Technology. Both World-Class manufacturing and lean manufacturing use a similar approach and, therefore, need not be considered separately.
The Venture Manual refers to lean manufacturing as the original theory behind synchronized manufacturing. The two theories both originated from the production system adopted by Toyota (Liker, 1999:29). The original theory was referred to as “lean manufacturing”, as the focus was primarily on the reduction of waste and improved management of material flow. The term “lean” has different connotations. Therefore, to avoid any misinterpretations of the word “lean”, it was changed to “synchronized”.

Liker (1999:30) praises the simplicity and functionality of the Toyota manufacturing system. Thiicho Ohno, the designer of the Toyota system, used simple systems, such as coloured coded cards (kanbans) to trigger production movements (pull system). This gave the shop floor operators the information necessary to perform the required task. This simple method of material flow management can assist in the handling of complex tasks such as the assembly of a vehicle.

Another aspect that makes lean manufacturing similar to synchronous manufacturing is the use of pull systems. This system is defined by Imai (1997:27) as follows: “The previous process produces only as many products as are consumed by the following process”. This method is also used in just-in-time manufacturing systems (Imai 1997:27). Again, it is important to point out the similarities between the theories as the concepts are shared.
Lean manufacturing also stresses the importance of waste reduction. According to Hellriegel et al (1999:735), Toyota identified waste in seven areas. The “Toyota Seven Wastes” were identified and therefore reduced to achieve a lean production and are listed as follows:

- Waste of overproduction (also irregular production);
- Waste of time on hand (waiting);
- Waste in transportation;
- Waste of processing itself;
- Waste of stock on hand (inventory);
- Waste of movement; and
- Waste of making defective products.

This type of waste elimination is shared with synchronous manufacturing concepts.

2.2.2 Goldratt’s Theory of Constraints (TOC)

The theory of constraints (TOC) is based on cause and effect and their reciprocal relationship. It stresses the importance of actions and results, to enable the company to be an effective manufacturer. TOC shares a similarity with
synchronous manufacturing insofar as both theories use the concept of total removal of waste, which leads to better quality, higher profitability and continuously improving performance (Goldratt & Cox, 1985: preface). TOC deals primarily with scheduling production to be able to reduce cycle time and eliminate unnecessary stocks.

Naylor (1996:323) describes the TOC drums-buffer-rope (DBR) concept. The drums set the pace (schedule constraint), the rope is the pull system that drives the products through the process and the buffer refers to stock held in order to avoid any fluctuations or bottlenecks in the production line.

Goldratt’s theory is also based on the following concepts (Goldratt & Cox, 1985:preface):

- Analysis of current performance;
- The drive for quality;
- Production automation;
- Material flow management;
- Performance measurement;
- Synchronized manufacturing; and
- The competitive edge race.
These are basic concepts, which form part of Goldratt’s theory, and are the foundations for synchronous manufacturing. Goldratt & Cox (1986: preface) often refer to the need for synchronized manufacturing as a production system, in order to speed up the production line, locate constraints and focus on improvement. Synchronous manufacturing is a collation of lean manufacturing concepts together with Goldratt’s TOC. Theories on manufacturing are similar, and use similar concepts, but each theory depicts a unique way of assessing a problem and generating solutions.

2.2.3 Kaizen theory

Kaizen is a Japanese term to define continuous improvement. Imai (1997:1) defines Kaizen as a philosophy that involves everyone - both managers and workers - to constantly improve ways of performing tasks. This in not limited only to work, but also expands to include both social life and home life. The Kaizen concept is based on common sense and low cost approaches. Imai (1997:2) also mentions the difference between the Western approach and the Japanese approach. Western management enjoys innovation while Japanese management enjoys the low-risks approach and the frequent tendency to return to the old ways of doing things.

The Kaizen theory is based on the following principles and concepts:
• Kaizen and management: maintenance and improvement;
• Process versus results;
• Follow the process cycles;
• Quality as first priority;
• Illustration of facts with data; and
• The next quality check is the customer.

It is important to implement Total Quality Management, Just-in-time production and Total Productive Maintenance in order to be able to implement a successful Kaizen system as described by Imai (1997:7).

2.2.4 Profile of a world-class organisation

According to Haynes & Pisano (1994:77), manufacturing companies recognize the fact manufacturing strategies can improve output. These organisations recognize the need to become “world class” players. According to Maritz (2000:29) a world class manufacturer has the following characteristics:

• Sales improve and inventories become less;
• Manufacturing times shrink;
• Quality improves and new product introduction is more dynamic;
• Employee attendance is improving;
• Change is accepted; and
• Employees seem to have time.

All the above characteristics have a direct influence on how organisations perform activities and how work is organised. Employee involvement plays an important role in the world-class organisation in order to keep performance standards and to continue improving its performance.

2.3 Employee motivation theories

2.3.1 Maslow’s hierarchy of needs

Hellriegel et al (1999,465) define a need as ” A strong feeling of deficiency that creates an uncomfortable tension. The tension causes a person to take action to satisfy the need. Satisfying the need reduces the intensity of the motivating force.”

Maslow represented these needs in his model called the hierarchy of needs. This theory suggests that individuals possess a five-level set of needs, which they attempt to meet in sequence at some stage during their lifetime. Maslow’s hierarchy of needs is illustrated in Figure 2.1.
From Figure 2.1 the following factors can be noted:

- **Physiological needs**: Such as food, clothing and shelter. These are the basic needs that Maslow identified as a first level satisfaction.
• **Security needs:** These needs include safety, stability, sickness and pain. Employees need the safety of a stable job, medical care and financial reward.

• **Affiliation needs:** People need friendship, love and sense of belonging. Employees value work relationships with fellow workers and their superiors. In addition, the sense of belonging to a reputable organisation is seen as part of their affiliation needs.

• **Esteem needs:** refers to the need of self-respect and recognition from others. In the workplace, respect and recognition are important factors for employee satisfaction. Rewards, such as promotions, bonuses and praise for good performance are part of the fulfilment of esteem needs.

• **Self-Actualisation needs:** Self actualisation is a higher level need that is based on the desire for personal growth, self fulfilment and the realization of their full potential (Hellriegel et al 1999:466). This is the ultimate goal, as a person feels successful and actualises his own dreams. Employees who satisfy self-actualisation needs display problem solving abilities, initiative and entrepreneurship. This can be described as the ultimate goal of employee satisfaction.
2.3.2 Herzberg’s two factor theory

“Herzberg’s two factor theory identifies the aspects of the job and the organisational contexts that contribute to satisfaction” Hellriegel et al., (1999: 471). This theory is based on the relationship between employee satisfaction and productivity.

Herzberg based his research on two basic principles: factors that were expected by employees as a given standard and motivating factors that can increase job satisfaction. For example, higher responsibility can be perceived as a motivating factor as the employees feel in control, although lack of responsibility might not necessarily lead to dissatisfaction. While absence of standard requirements, such as medical cover or a pension fund might lead to dissatisfaction, its presence might not necessarily lead to job satisfaction. The two factors described by Herzberg were:

Motivators factors: “Job characteristics that, when present, should create high levels of motivation” (Hellriegel 1999:471).

Hygiene factors: “ Characteristics of the work environment outside the job that, when positive, maintain a reasonable level of job motivation but not necessarily increase it” (Hellriegel, 1999:471).
An article from Jarvis, *Production technologies and job employment issues*. Retrieved April, 24, 2001 from: Http://www.sol.brunel.ac.uk/~jarvis/bola/operational/jobissues.html. Herzberg’s theory and research is to improve job satisfaction by re-designing jobs to increase the effects of motivational factors. Jarvis continues that Herzberg recommended job enrichment - re-designing jobs in terms of their meaningfulness, content, responsibility, opportunities of achievement and recognition. These applications were found to be more successful for white-collar jobs than blue collar and for groups seeking more responsibility.

2.3.4 Hackman-Oldham job enrichment theory:

Job enrichment is defined by Hellriegel et al (1999:451) as: “Creating job simplifications to broaden and add challenge to the tasks required in order to increase productivity”.

In modern manufacturing, creating challenging work and simplify arduous tasks has proven to cause a change in the relationship between employee and work. Secondly, it changes the behaviour of employees to create a positive attitude towards the organisation. Thirdly, it offers opportunities for changes and improved ways of performing tasks (Hellriegel et al, 1999:451).
The concept of job enrichment as a motivator was developed and tested by Hackman and Oldham. This theory explained the relationship between employees and their work. The theory starting point was the key job characteristics, which are:

- Skill variety;
- Task Identity;
- Task significance;
- Autonomy; and
- Feedback.

The above characteristics directly or indirectly affect the following critical psychological states:

- Experienced meaningfulness of work;
- Experienced responsibility or work outcomes; and
- Knowledge of actual work results.

2.3.5 The cultural web theory
Johnson & Scholes (1999:73) define the cultural web as a representation of the generally accepted assumptions, or a paradigm, existing within an organisation and its physical manifestations upon the organisational culture. Organisations will develop unique cultural webs, in order to develop coherent and effective functionality. The theory of Johnson & Scholes is based on factors, which influence the assumption that determines the paradigm and the characteristics of the organisation. According to the model the elements are:

- **Rituals and routines** are ways and procedures that employees have to perform in order to complete tasks. Rituals and routines are the accepted ways of doing things. There are different types of rituals: for example an extreme case can be illustrated by the way people socialize, by having drinks at a bar, or by speaking about friends. More formal rituals are, for example, the induction process of new employees, promotion procedures or training programmes. Routines are characterized by repetitive tasks, which characterize the operation, such as repetitive purchases performed by company buyer or routine maintenance performed on a machine.

- **Stories** also form part of the organisation culture. Members tell each other stories regarding events or tales regarding the history of the organisation. According to Johnson & Scholes (1999:76), stories “...have to do with
successes, disasters, heroes, villains and mavericks who deviate from the norm”. Stories are tales which make the organisation unique.

• **Symbols** form part of the organisation as they portray an image of the firm. Logos, signs, writing style, buildings and terminology represent the organisation and what it stands for. The nature of the organisation’s climate is also expressed by symbols. For example, a very formal environment is often noted by the way members address each other. Another symbol which characterizes organisational culture, is the organisation’s own terminology and jargon.

• **Power structures** are very important to the organisation as powerful people are closely related to the key assumption of the paradigm. The key values of the paradigm are closely related to top management’s values and assumptions. Top management’s power of steering the business in the most beneficial direction is part of the paradigm. The type of power can be at different levels, depending on the structure and the organisation layout. Power is not always based on seniority but, in most cases, senior management has a greater influence on strategic planning.

• **Control systems** refer to monitoring and supervising activities. It is important to emphasize the importance of effective controls to direct the
organisation in the right direction. Reward systems are also part of the control systems, as effective employees need to be motivated and stimulated to perform. Such reward systems can be used strategically to stimulate the individual as well as teams, depending upon the organisation structure.

- **Organisation structures** and power structures are very similar as they normally follow the organograms. The organisation structure reflects what is important in the organisation and how it actually operates. Organisations can be formal or informal, mechanistic or organic, tribal or functional, service or product oriented et cetera.

### 2.3.6 McGregor’s Theory X and Y

According to Brown (1996:281), “…traditional Western human resource management in manufacturing falls under McGregor’s (1987) theory X types.” This theory categorizes management into two groups: X-types and Y-types. X-type managers believe that staff needs to be lead and motivated while type Y, more characteristic of Japanese culture, believe that employees have capabilities and self-motivation to such an extent that they do not need controlling and firmly believe that management should use suggestions and ideas from employees.
Traditional Western management has strong type X traits and although it is changing towards a more co-operative type Y management culture, the X-type management still exists in many western industries. Brown (1996:283) states that management opinion of employee’s capabilities directly influences the creative input of employees. Creative energy can be encouraged by management attitudes this has proven to be a powerful tool for continuous improvement in all areas of the business.

2.3.7 Employee involvement: The self-managing work team strategy.

Hellriegel et al (1999:579) define a work team as: “A small number of identifiable, independent employees who are held accountable for performing tasks that contribute to the achievements of organisational goals.” The concept of self-managing teams goes one step further, where employees are involved in delivering an entire service. The concept of self-managing work teams is based on multi-skilled workers that interact to form an independent entity as part of an organisation. There are many theories that embrace the idea of the employee involvement:

Shaw (2000:1) reports that there is an interdependence and preference between group work and group member satisfaction. In his research, Shaw proved that
there is a relationship: “...group work was significantly related to group-member performance.”

According to Robbins (2001:193), employee involvement has become a “...convenient catchall term to a variety of technique....it encompasses such popular ideas as employee participation or participative management, workplace democracy, empowerment and employee ownership.” All these terms can be referred to as employee involvement.

Robbins defines employee involvement as, “ A participative process that uses the entire capacity of employees and is designed to encourage increased commitment to the organisation’s success.” According to Heller (1998:5), the organisational structure of work teams is becoming a widely preferred practice.

The traditional organisation type gives way to the flatter, more dynamic performance-oriented team structure. Hutton (unpublished: 2) states that job satisfaction is one of the team’s working goals as: “...involving all employees in the decision making process to increase job satisfaction”.

There are other important external factors that influence work teams structure and functioning. These are:
- Function and purpose;
- The organisation’s own culture and beliefs;
- Organisation design and activity types; and
- The human resource management practices adopted to boost employee’s performance.

Internal influences, which affect team structures as reported by Tubbs (1988:96), are:

- Physical environment: how employees view their surroundings and facilities;
- Group size: bigger groups vs. smaller groups, depending on task;
- Status and power: individual satisfaction with status and power gained by the team; and
- Leadership style adopted.

Figure 2.2: Forces influencing the workplace
Factors illustrated in Figure 2.2, are related to the environment surrounding the employees. Research, conducted by Shaw (2000:1), shows that there are other forces that influence the effectiveness of group work. These forces are part of the individual's values that directly influence the preference to organise work in groups, which leads to better performance and a higher level of job satisfaction. According to Shaw (2000:2) these individual values are:

- Personal interests;
- Shared interests;
- Family values; and
- Circles of friends.

The above values have a direct relationship with the satisfaction/dissatisfaction of the group work. It is important for the organisation to evaluate the employee's culture and values to establish if the workforce is group or individual work oriented.

2.3.7 Bavendam Research Incorporated: theory of job satisfaction

Bavendam Research Inc. surveyed 15000 white-collar employees in the United States of America and identified six factors that were directly responsible for job
satisfaction. The factors researched by Bavendam Research Inc. are illustrated in Figure 2.3

Figure 2.3: Factors influencing job satisfaction.

Source: Bavendam Research Inc. (Http://www.employeesatisfaction.com)

The five factors investigated by Bavendam Research and illustrated in Figure 2.3 are:

- **Opportunity:** Bavendam research revealed that employees who are more satisfied want their jobs to offer challenging opportunities for increased responsibility. This was the prevailing factor which had the highest bearing on job satisfaction in the workplaces researched
• **Stress:** The negative effect of stress and interference of work with personal matters has a direct effect on job satisfaction.

• **Leadership:** According to Bavendam Research Inc. good leaders motivate people, and good leaders motivate people.

• **Work standards:** Employees are satisfied when co-workers take pride in their work. As quality of production improves, the satisfaction increases.

• **Fair Reward:** Employees show greater job satisfaction when they are rewarded for their good work.

• **Adequate authority:** Freedom of decision-making and authority to do specific tasks are great sources of job satisfaction. The feeling of being responsible for success can lead to great job satisfaction, as well as self-actualisation.

2.4 Summary

In this chapter the fundamental concepts of modern manufacturing have been investigated with the objective of exploring modern thinking in a just-in-time environment. The second part of the chapter illustrates classical motivational theories used to motivate employees. In Chapter Three the discussion will now focus on the relationship between just-in-time manufacturing and employee motivation.
Chapter 3

The impact of modern manufacturing on employee motivation

3.1 Introduction

In this chapter the discussion focuses on modern theory, relative to the just-in-time work environment, and its effects on employees’ motivation. Classical motivation theories did not take into consideration modern manufacturing methods and modern management challenges.

The 22 key factor model focuses on real life experiences in the work place and translates important key factors into management styles adopted. This theory has been selected as it describes situations relating to just-in-time production. Terez’s theory goes beyond the concept of job satisfaction and develops a model of meaningful workplace.
3.2 The 22 key factor model

According to Terez (2001:2), there is a difference between meaningful work and job satisfaction. His definition of meaningful work goes much deeper than the concept of job satisfaction. “In a meaningful workplace, it’s less about needs and expectations, and more about hopes and dreams and fulfilment.” Terez’s model reiterates the top level of Maslow’s hierarchy of needs, as organisations should not only satisfy generic needs but rather fulfil the employees’ need for self-actualisation. The 22 keys discussed by Terez are illustrated in Figure 2.2. The 22 keys are:

- Challenge;
- Balance;
- Direction;
- Fit;
- Invention;
- Ownership;
- Personal development;
- Relationship building;
- Worth;
- Relevance;
- Acknowledgement;
- Equality;
- Flexibility;
- Informality;
- Validation;
- Oneness;
- Service;
- Respect;
- Self identity;
- Dialogue;
- Purpose; and
- Support.

Figure 3.1 represents the 22 keys and the interrelation between the keys and the work environment. A detailed explanation of each key will follow.
Figure 3.1: The 22 keys

Source: Adapted from Terez (2001:2)

Figure 3.1 illustrates the following factors in the model. These are discussed below:
3.2.1 Challenge

“People are falling far short of their potential, not because they lack in talent and skills, but because the workplace fails to call on their full expertise.” (Terez, 2001:2) Employees are exposed to many different work situations, which can induce unsatisfactory work conditions. In the motor assembly industry, it is often found that people suffer from boredom from repetitive jobs. Once the assembly work is mastered, the job does not offer any more challenges. It is important for management to keep the challenge up, to use employees to their full potential.

3.2.2 Balance

“People at all levels of the organisation respect the fact that there is life beyond work.” (Terez, 2001:2-2) It is important in an organisation to strike a balance between work life and private life.

The balance is achieved when the employee’s private life is not negatively influenced by his work life. This is especially true in just-in-time manufacturing where people are continuously exposed to time pressure and stressful environments. In a balanced organisation employees feel proud of their work place and even feel at home at work.
3.2.3 Direction

Management’s vision and, ultimately, direction greatly influences employees’ feelings and the meaningfulness of their work. Employees feel that are part of vision, goals, and objectives. As part of the employee’s involvement, direction forms a vital part of employee development and formation. Management indicates the way and employees are the instruments to realize the vision. Organisations without clear direction cannot stimulate their employees and therefore will not be able to motivate them to achieve higher levels of satisfaction.

3.2.4 Fit

“Individual employees clearly see how they and their work fit into the bigger mission of the organisation” (Terez 2001:4-1). As in most organisations, employees experience a feeling of belonging or being part of a meaningful organisation.

The organisation can benefit as employees will be able to tap into their strengths and develop more interest in their work. Being part of the organisation will stimulate an alignment between their wants and what they do at work.
3.2.5 Invention

Innovative thinking is often disregarded in most traditional organisations. Employee suggestions and creativity is a powerful asset if properly used. The workplace has opportunities to be creative and people are open to new ideas, trends and approaches if correctly motivated. Modern manufacturing places a strong emphasis on the involvement of all employees. According to the Venture manual, the organisation has set targets on how many ideas each employee should implement. This serves as a measurement of both involvement as well as motivation.

3.2.6 Ownership

According to Terez (2001:12-1) “People view themselves as owners of their work and act accordingly”. Therefore, ownership of the task or job has a direct impact on the behaviour of employees. This concept reinforces the empowerment theory of self-managing work teams as the members are personally responsible for their performance.

Ownership is also a powerful tool to boost formal and informal communication, as employees ensure that everyone is in the communication loop. Terez (2001:12-1) also explain that positive changes are performed at all levels to improve
productivity. Renton (1998:24) reinforces the argument as ownership and commitment towards common goals, at team level, is a key performance dimension to create a meaningful workplace.

3.2.7 Purpose

As the organisation has a purpose, each individual needs to have a purpose within the organisation. Owing to differences between individuals, each person has different aspirations and desires to fulfil a specific purpose in his or her working life. According to Bowin and Harvey (2001:83), there is a relationship between job meaning fullness, autonomy and job feedback. They represent this relationship in a formula illustrated in Figure 3.2.

Figure 3.2: The relationship formula

\[
\text{Motivating Potential} = \text{Job} \times \text{Autonomy} \times \text{Job Meaningfulness} \times \text{Job Feedback}
\]

Source: Bowin and Harvey (2001:83)
Purpose can be further broken down into three very important factors which can directly influence employee motivation. Bowin and Harvey (2001:83) explain:

- **Skill variety**: How many employees’ skills have been exploited. Under utilization can lead to unhappiness.

- **Task Identity**: Is the employee’s task meaningful for the organisation? Is the task relevant for the employee? According to Terez (2001:2) “Individual employees feel that their work makes a positive difference in some way”

- **Task Significance**: “…is the degree to which the job has a substantial impact on the lives of other people, whether in the same organisation or in the external environment.” (Bowin and Harvey, 2001:83) According to Terez (2001:3-1), job meaningfulness is thriving when employees feel that their task has significance.

Organisations, in order to boost job meaningfulness, should become mission driven instead of rule driven or individual task driven. All employees feel part of the bigger picture.
3.2.8 Self Identity

According to Bowin and Harvey (2001:83), autonomy is another factor that directly influences motivation. Self identity, as explained by Terez (2001:5-1), thrives on individuality: people own space, have freedom of operation and independence.

Organisations need to be part of the team culture without forgetting the importance of individuals and their needs to be recognized and to be independent. Autonomy gives the opportunity to employees to take part in planning and to control their work. Employees also feel trusted and worthy of such trust.

The effects of not having freedom can play a great psychological role in the relationship between the organisation and the employee. A great degree of autonomy gives the employee a feeling of being personally responsible for the task.

3.2.9 Dialogue

Communication is an important tool to build relationships and prosperous human resource interaction. In modern management, dialogue has formed part of the
employee involvement. Terez (2001:20-1) explains that in companies that have
efficient dialogue with their staff, the following is achieved:

- There is a continuous flow of constructive dialogue at all levels;
- Employees feel free to talk about work related problems and issues;
- The dialogue is honest, as there is no fear of recrimination; and
- Employees do their best to set aside differences to understand other perspectives.

Terez 2001:20-1, states that the negative effects of poor dialogue could be
disastrous, especially at shop floor level:

- Conversation is mainly superficial and does not deal with meaningful
  problem-solving issues;
- Employees are not allowed to know about many important aspects; they
  are just told the necessary;
- Some employees are routinely kept out of important and relevant issues;
  and
- Conversation with work colleagues is often seen as a waste of time.

According to Bowin and Harvey (2001:83), feedback and communication of own
performance has a direct effect on motivation. As illustrated in Figure 3.1, job
feedback has a direct impact on motivation as the communication, efficiency and know-how is conveyed, will have a direct impact on the employee interpretation of the message. Furthermore, effective dialogue will indicate to the employee how he or she performs on the job.

3.1.10 Relationship building

Relationship building is predominantly effective when: (Terez 2001:7-1)

- Employees value the opportunity to build relationships within the organisation;
- Employees understand the benefit of having good relationships with suppliers, clients and society;
- The organisation is designed for interaction between individuals and builds solid relationships, which endure the effects of environmental changes.

Modern management is in favour of using the workforce as a source of competitive advantage. According to Grobler (2001:30), modern management has developed a trend of using human resource management as a strategic tool to gain competitive advantage.
Dunphy and Stace (1988:317) have developed a model for improved relationship building and adaptation to change. This model is based on a matrix where management styles and strategy types have a direct relationship with the approach to employee management. The model is represented in Figure 3.3.

Figure 3.3: Adaptation to change model

Source: Dunphy and Stace (1998:317)

Figure 3.3 represents the four types of evolution, they are discussed in details below:
• **Participative evolution**: Owing to environmental changes, organisations are continuously subject to reshaping to fit in with the environment. This type of strategy uses co-operation from the employees to achieve the desired change. The open and participative type of relationship with the employees is important for the implementation of such changes.

• **Charismatic transformation**: This strategy is based on the ability of leaders to accomplish rapid changes without disruption. Charismatic transformation is particularly effective in organisation where relationships are well established.

• **Forced evolution**: This type of strategy is the reverse of charismatic transformation. This strategy is used to make adjustments over a longer period of time, but without the support of the employees.

• **Dictatorial transformation**: This change of strategy is used during a crisis, when major restructuring is needed which may counter entrenched interests of the corporate culture. This strategy can directly affect the relationship between employees and top management.

Modern management is moving towards the participative and teamwork type of management styles. This type of management is conducive to good relationship
building, which will lead to improved productivity, higher company loyalty and higher organisation capability (Grobler 2001:31).

3.2.11 Acknowledgment

Acknowledgment is a fundamental of reward and recognition for work done. According to Terez (2001:1-1), what is important is how acknowledgment is perceived in the organisation. Terez (2001:1-1) gives the following examples of good acknowledgment for performance:

- Employees should be rewarded with genuine appreciation rather than handing out extrinsic rewards;
- Milestones are recognized and accomplishments celebrated; and
- Following big projects, the organisation enjoys the recognition.

Recognition for achievement should not go unnoticed; employees need pride, especially when milestones have been achieved.

3.2.12 Worth

Worth is very closely linked to acknowledgement, but should not be overlooked. Employee worth is really the perception of one’s value, both monetary as well as personal. According to Terez (2001:22-1), employees feel worthy when:
• The company values its employees, and will endeavour to please them;
• Employees feel that they are paid what they are worth;
• Employees’ input is solicited and welcomed; and
• The organisation believes that each employee is an expert in his field.

Furthermore, self-worth is an integral part of everyone’s personality and it can affect behaviour. It can have positive effects, as the person feels rewarded by his or her perception of self worth. However, it can also have negative effects as individuals could set standards which are too high for themselves, causing a feeling of failure (Terez, 2001:3-1). Management should set guidance for such standards of achievement and ensure that each individual in the organisation feels worthy.

3.1.13 Support

Support refers to aid that management offers to employees, it can be in many forms such as:

• Resources (e.g. capital, time and tools);
• Motivation. (e.g. counselling, guidance and stimulation);
• Expertise and knowledge;
• Trust; and
• Coaching and training.

According to Terez (2001:20-2), employees seek management support to achieve goals and objectives, both for personal or work-related reasons. It is up to management to recognize and utilize employees as well as encourage and empower them to achieve goals in their personal and work life.

It is important to note that a supporting culture within an organisation has proven to generate innovative ideas. Terez (2001:20-2) also mentions that organisations should invest more in its employees as they prove to be great assets.

3.2.14 Personal development

A closely related factor to support is personal development. Training and coaching are essential tools to develop people, but the ultimate goal is to develop people to achieve their full potential. (Terez 2001:13-1) This can be achieved by rotating work, providing job variety or addressing a wide spectrum of issues.

Brown (1996:282) reported a model where three keys were used to illustrate the ingredients to develop individuals. Figure 3.4 illustrates the interaction of three
factors that world-class Japanese manufactures use as a basis for personal development.

Figure 3.4 The three-factor model

![Three factor theory in Japanese manufacturing](image)

Source: Adapted from Brown (1996:282)

In Figure 3.4 three factors mentioned by Brown (1996:282), clearly indicate that individual needs for training and development have to be aligned to the group as well as to the task to be performed. The three factors will certainly have to be
considered by management to develop individuals, adequately without narrowing the scope of the individual and his or her own potential.

3.2.15 Relevance

In many organisation protocols, rules and regulations can create a network of irrelevant tasks, which ultimately leads to employee frustration and anger. Employees have to be able to see the relevance of each task that he or she performs. Terez (2001:16-1) explains that valueless rules and policies, and organisation bureaucracy lead to unhappy employees and inefficient workplaces. Bureaucracy can be seen as a form of excessive control by management, where freedom of decision is not welcomed and employees should do as they are told. Relevancy of a task is an aspect which is often overlooked by management.

3.2.16 Service

According to Terez (2001:19-1) the workplace should be a place where people help each other to be successful. Workers should provide a service to one another to interact and function together. The service aspect of an organisation includes the following:
Formal learning:

- Training;
- Mentorship; and
- Apprenticeships.

Informal learning:

- On the spot coaching;
- Process training (practical);
- Social induction process; and /or
- Simply offering help to perform a task.

Service also has another aspect, as the company should also guide their employee’s through personal development. Personal counselling becomes a service rather than a form of disciplinary action.

3.2.17 Informality

As explained in the previous key, there are aspects that management needs to take into consideration. The main focus has always been on the formal aspect of the business, but there are other informal aspects, which make the meaningful workplace interact. Terez (2001:9-1) suggests the following practices to enhance the informal aspect of the workplace:
- Open door policy;
- Flexible dress code. Let employees decide what is appropriate;
- Plan social events from time to time. (e.g. celebrate after the end of a project);
- Let the employee decorate his or her own offices, or work station; and
- Share news with everyone in the organisation.

3.1.18 Flexibility

Organisations have rules and regulations to deal with certain situations. Terez (2001:8-1) disagrees with having inflexible sets of rules. Employees see inflexible systems as a form of dictatorship. In addition, rules should allow the employees to perform what the customer requests, within limits. Terez (2001:8-1) also believes that even when policies and procedures are in place, employees understand that specific circumstances may require different approaches. Flexibility is a form of trust that is placed in the employee to act responsibly. Inflexible rules create division amongst employees and management.
3.2.19 Respect

Terez (2001:17-1), feels that in order to create a harmonious workplace, the following characteristics should be considered to enhance the respect of people:

- People respect one another regardless of title, position or gender;
- People are considered when taking decisions as it can affect them;
- All people are treated equally and fairly, as rules apply to everyone;
- Employees should not be told what to do, but rather have the freedom to realize what should be done; and
- Rules and policies should not have a patronizing tone.

3.2.20 Equality

Equality is closely linked to respect. It is important to mention equality as a separate aspect, especially in modern times. Equality has become a very important factor especially in South Africa, with its history of racial problems.

As different people interact in the workplace, it is up to management to dissipate barriers and differences between employees. Terez (2001:6-1) explains when equality is achieved in an organisation:
• People in the organisation feel that they are on the same level throughout the organisation;
• Job titles project responsibility and not superiority;
• At meetings, people of all levels have the same right to express their opinions;
• All employees are equally important in the organisation; and
• No employee should feel like a “Second-class citizen”.

3.2.21 Validation

According to Hellriegel et al (1999:478), “Positive reinforcement creates a pleasant consequence by the use of rewards to increase the likelihood that the behaviour will be repeated.” Validation can be compared to positive reinforcement as management rewards good performance in order to stimulate the same behaviour again. Employees are motivated by the positive impact of their work on the organisation (Terez 2001:21-1). Employees who are rewarded are more motivated and willing to perform even better.

3.2.22 Oneness

According to Terez (2001:11-1), teamwork and togetherness are fundamental points of the 22 key theory. Oneness is aimed at creating a sense of unity within
the organisation where everyone is involved in the social interaction of the workplace.

The feeling of “we are all in this together” gives employees a common goal to achieve the organisation’s mission. Oneness will also create trust amongst employees as they interact positively.

3.3 Summary

In this chapter, the 22 key model was investigated and compared with similar theories and models. Terez’s model best illustrates tendencies of modern management and the way the workplace is changing. The motor industry is a very progressive industry, which strives to achieve maximum performance with the least amount of resources. In the next Chapter the effects of just-in-time on employee’s motivation will be discussed in detail.
Chapter 4

Research Methodology

4.1 Introduction

In Chapter Two various models of manufacturing concepts were explained as well as theories regarding motivation and employee satisfaction. In Chapter Three, the theory of the 22 keys was analysed. The relationship between the manufacturing environment and employee motivation is now analysed.

The literature study proved that there is a relationship between management styles and employee motivation. This is the basis to solve sub-problem one. In Chapter Three the difference between job satisfaction and meaningful workplace, as well as their interdependence, was explained with the illustration of the 22 key factor theory. The empirical study will reveal any relationship between satellite manufacturing within a motor manufacturer’s cluster and job satisfaction. The methodology used to address sub-problems and the main problems are explained in this chapter.
4.2 Research design

According to Leedy (1997:5), research’s role is “... to provide a method for obtaining those answers by inquiring and studying the evidence within the parameters of a scientific method.” These parameters are:

- Research originates from a main problem or question;
- Research has a goal;
- Research is formally planned and methodical;
- The main problem is broken down into more manageable and specific sub-problems;
- Research revolves around the main problem;
- Research uses critical assumptions, such as self-evident truths;
- Data is interpreted to resolve the main problem as far as possible; and
- Research has a closed cycle, as it develops from a point and through logical explanation, returns to the problem with a plausible solution.

The main problem in this study is

WHAT ARE THE EFFECTS OF ASSEMBLY LINE-SIDE SUPPLY ON INDIVIDUALS EMPLOYED IN SATELLITE OPERATIONS IN OEM’S?
Following from the main problem, the sub-problems below were developed to facilitate the solution of the main problem:

- What does the literature study reveal regarding influences/forces that affect employee satisfaction at work?
- What does a literature study reveal are the difference of the factors that lead to job satisfaction and create a meaningful workplace in a manufacturing environment?
- What are the effects of employees being removed from their normal working environment and moved to satellite manufacturing sites within OEM's?

The research procedure to solve the main and sub problems was laid out as follows:

- In Chapter Two, the literature study proved that there are forces which influence employees' behaviour in the workplace. Various theories were used to illustrate these forces.
- In Chapter Three, the theory of 22 key factors was illustrated to explain the difference between job satisfaction and meaningful workplace. This
theory was selected as it best describes factors to be considered in a manufacturing environment.

- In order to solve the third sub-problem, a questionnaire based on the 22 key factors and related theories was designed and circulated to all employees of the organisation being studied.
- The results gained from the study will also be used, in conjunction with the literature study, to solve the main problem.

4.3 The empirical study

The questionnaire was developed by using the various models illustrated in Chapter Two and Three. The questions were formulated with the objective to determine the most relevant points. A pilot study was undertaken to verify the questionnaire’s readability. Five respondents were used, instructions had to be changed and the 22 keys factors adjusted for a correct interpretation.

The questions address the issue of just-in-time manufacturing and it is aimed to uncover the factors which influence job satisfaction. The questions selected for the questionnaire are mainly multiple choice type and Lickert rating scale type questions. According to Allison, O'Sullivan, Owen, Rice, Rothwell and Saunders (1996: 83), the best way to represent views and opinions is to use the rating Lickert scale type questions.
According to Thomas (1996: 121), the questions should not lead the respondents to a set answer. The questions have been kept simple and the wording has been kept basic to allow respondents to understand the question unambiguously.

According to Thomas (1996:121), the questionnaire should not be too long and should be user friendly. The questions should be evenly spaced in a way to avoid misunderstanding of the various sections.

The population to be targeted for the study is the entire staff complement of Faurecia’s East London plant. The size of the population is 29 employees. The population includes all levels of employees. Each employee was given a questionnaire on 30 October 2001. The response rate was 100 percent as all employees were present and completed the given questionnaire.

4.4 The Population analysis

Owing to the differences in race, gender and employment level, each category will be classified as the importance of different backgrounds has an influence on the responses.
Table 4.1: Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>17</td>
<td>59</td>
</tr>
<tr>
<td>Female</td>
<td>12</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>100</td>
</tr>
</tbody>
</table>

As reported in Table 4.1 the population has a majority of male respondents, although a gender split will not be analysed, it is important to note the imbalance of respondents.

Table 4.2: Race

<table>
<thead>
<tr>
<th>Race</th>
<th>Responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>1</td>
<td>3.45</td>
</tr>
<tr>
<td>Black</td>
<td>13</td>
<td>44.83</td>
</tr>
<tr>
<td>Coloured</td>
<td>9</td>
<td>31.03</td>
</tr>
<tr>
<td>White</td>
<td>6</td>
<td>20.69</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>100</td>
</tr>
</tbody>
</table>

The population race is in line with the racial distribution of the region of the Eastern Cape.

Table 4.3: Position held

<table>
<thead>
<tr>
<th>Race</th>
<th>Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation Manager</td>
<td>1</td>
<td>3.45</td>
</tr>
<tr>
<td>Purchasing Manager</td>
<td>1</td>
<td>3.45</td>
</tr>
<tr>
<td>Financial Manager</td>
<td>2</td>
<td>6.90</td>
</tr>
<tr>
<td>Supervisors</td>
<td>2</td>
<td>10.34</td>
</tr>
<tr>
<td>Clerks</td>
<td>2</td>
<td>6.90</td>
</tr>
<tr>
<td>Team leaders</td>
<td>4</td>
<td>13.79</td>
</tr>
<tr>
<td>Operators</td>
<td>16</td>
<td>55.17</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 4.4: Overall split by category.

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management and salary staff</td>
<td>9</td>
<td>31.03%</td>
</tr>
<tr>
<td>Wage staff</td>
<td>20</td>
<td>68.97%</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

The empirical study will analyse responses by overall category as reported in Table 4.4. For the reader information Table 4.3 reports a breakdown of the respondents’ position.

4.5 The questionnaire

The questionnaire has 10 questions. Each section has a direct relation to a theory explained in Chapter Two and Three.

- The first question is related to the basic needs explained by Maslow. This question is aimed at evaluating the stage of each individual. The Lickert scale type question will facilitate the respondent to express his or her view on the basic need theory.

- The second question is based on motivation factors in the work place. What are the motivating factors and which are not? The factors described in the questions are the 22 keys from Terez’s model. This question will uncover what keys are considered by the employees as motivational factors and which are not related to motivation. The question is based on Herzberg’s two-factor theory.
• The third question is also based on Terez’s 22 key theory. The respondent is asked to rate the 22 keys in order to uncover what factors drive performance and what motivates employees. This question is particularly important, as the respondents have to select 10 factors which are important to them.

• The fourth question is based on the cultural web theory. This question will uncover feelings of respondents towards the organisation culture and perception of the organisation’s image. The structure and control system is evaluated. A simple yes or no answer was chosen to indicate if the cultural web has a positive or negative effect on the morale of the organisation.

• The fifth question deals with self-managing work team strategy. The respondents are required to choose between individualistic and team related traits. In addition, the question is aimed at determining how the individual motivation is generated.

• Question Six deals with the work team concept. The analysis concentrates on the strengths and weaknesses recognized by the respondents. The factors are related to the internal and external forces explained by Tubbs
(1988:96). The objective of this question is to understand which factors have greater influence on the teams within the organisation.

- In Question Seven respondents are asked to rank six factors, which relate to Bavendam Research’s (Http://www. employeesatisfaction.com) theory of job satisfaction. This section will explore which of the factors are the most important for the respondents.

- Question Eight deals with the 22 key theory. The respondents were asked to rank all 22 keys in order of importance. The respondents are already familiar with the 22 keys so it should be easier for them to rank the factors which are considered of primary importance. The final model of meaningful workplace within the element being investigated, will be drawn from the primary factors mentioned by the respondents in this question.

- Question nine deals with specific factors which are relative to the organisation’s location. The respondents are asked to rank, those factors that affects employees within an organisation operating on just-in-time, within an automotive manufacturer organisation. This question will also aid the author to formulate a model based on the 22 keys which will address such employees’ difficulties within their environment.
In question ten the author evaluates if the respondents have any knowledge of the following:

1. Just-in-time;
2. Kaizen theory;
3. World class manufacturing;
4. Theory of constraints; and
5. The self-managing work team strategy.

4.6 The statistical representation of the data

The questionnaire results will be statistically analysed and interpreted. According to Leedy (1997:243), there are four characteristics of statistical data, these are:

- The kind of data to be analysed: the data analysed is discrete data, which refers to facts regarding the population such as nationalities, race and gender et cetera. These factors are independent of each other.
- The scale of measurement: a ratio analysis will be used to determine the common factors in each question. A graphical representation will also be used to represent the relationship between factors.
• The number of groups from which the data arises: one group is being analysed in this study and therefore a one-group data will arise from a single group of subjects.

• Variables analysed: the study is focused on different theories and subjects and therefore it will generate a range data.

4.7 Statistical measurement

According to Leedy (1997:253), in statistical data collection the researcher has to concentrate on a central point around which the data revolves. In the questionnaire, the possible answers are numerous. Therefore the focus of the study has to be on the central point where there is a maximum response rate. Questions relating to the 22 key factor model need to be analysed carefully to determine the central tendency.

4.8 Summary

In this chapter the layout and the planning of the questionnaire has been set out. The population was analysed in a preliminary study to identify clearly the respondents targeted for the study. A question analysis was performed to give the reader a better understanding of the empirical study. In the next chapter the data collected will be compared and conclusions drawn from the data interpretation.
Chapter 5

Findings and interpretation of the empirical study

5.1 Introduction

In this chapter the results from the questionnaire are evaluated and interpreted. The data interpretation will then be used for the solution of the main problem.

Questions one to eight deal primarily with the different theories explained in Chapter Two. The data will be used to evaluate the motivation of the employees at Faurecia’s East London Plant. Question nine is directly related to the 22 key model. From the results, a model will be developed to differentiate between motivational factors and those factors which influence the meaningfulness of the workplace.

5.2 The data interpretation

In Question One the respondents seem to be divided into two distinct groups: one is aspiring to career and self-actualisation needs, while the other seeks basic needs as a priority. Table 5.1 shows the response pattern and Figure 5.1 is a graphical representation of responses, overall and by category. Management and
salary staff makes up the majority of the group aiming at self-actualisation needs, while the operator level have chosen basic needs as a priority. It is important to note the four wage staff members who value career as a priority. Faurecia should further investigate the aspirations of the employees who have self-actualisation needs.

Table 5.1: Results of Question One of the empirical study.

<table>
<thead>
<tr>
<th>Overall responses</th>
<th>No of responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Basic needs such as food, clothing and housing</td>
<td>10</td>
<td>34.48%</td>
</tr>
<tr>
<td>- Career and personal growth.</td>
<td>10</td>
<td>34.48%</td>
</tr>
<tr>
<td>- Friendship and belonging</td>
<td>1</td>
<td>3.45%</td>
</tr>
<tr>
<td>- Self-respect and recognition.</td>
<td>2</td>
<td>6.90%</td>
</tr>
<tr>
<td>- Safety and security.</td>
<td>6</td>
<td>20.69%</td>
</tr>
<tr>
<td>Totals</td>
<td>29</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Breakdown by category</th>
<th>Salary Staff</th>
<th>Wage staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Basic needs such as food, clothing and housing</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>- Career and personal growth.</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>- Friendship and belonging</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>- Self-respect and recognition.</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>- Safety and security.</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Totals</td>
<td>9</td>
<td>20</td>
</tr>
</tbody>
</table>
Figure 5.1: A graphical representation of responses to Question One.

**Question 1**

- Basic needs such as food, clothing and housing.
- Career and personal growth.
- Friendship and belonging.
- Self respect and recognition.
- Safety and security.

**Question 1 - Employee categories**

- Wage staff
- Salary Staff

- Basic needs such as food, clothing and housing
- Career and personal growth
- Friendship and belonging
- Self respect and recognition
- Safety and security
- Totals
In Question Two, the respondents were asked which of Terez’s 22 keys are regarded as motivational factors. With reference to Herzberg’s two-factor theory, the aim of this question is to determine which of the 22 keys are not regarded as motivational factors. It is interesting to note that four respondents felt that the entire 22 keys are motivational factors. The factors which are not regarded as motivational factors are illustrated in Figure 5.2 and the response details are reported in Table 5.2. The respondents felt that the formal vs. informal workplace was the least important, while worth recognition and support from organisation were the most important factors.
Figure 5.2: A graphical representation of responses to Question Two.
Table 5.2: Results of Question Two of the empirical study.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>No responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenge.</td>
<td>5</td>
<td>4.17%</td>
</tr>
<tr>
<td>Personal development.</td>
<td>2</td>
<td>1.67%</td>
</tr>
<tr>
<td>Direction.</td>
<td>6</td>
<td>5.00%</td>
</tr>
<tr>
<td>Fit within the organisation.</td>
<td>4</td>
<td>3.33%</td>
</tr>
<tr>
<td>Balance within the organisation.</td>
<td>9</td>
<td>7.50%</td>
</tr>
<tr>
<td>Invention.</td>
<td>9</td>
<td>7.50%</td>
</tr>
<tr>
<td>Ownership of process.</td>
<td>7</td>
<td>5.83%</td>
</tr>
<tr>
<td>Relationship building.</td>
<td>3</td>
<td>2.50%</td>
</tr>
<tr>
<td>Worth recognition.</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Relevance of job.</td>
<td>4</td>
<td>3.33%</td>
</tr>
<tr>
<td>Acknowledgement of performance.</td>
<td>3</td>
<td>2.50%</td>
</tr>
<tr>
<td>Equality in the work place.</td>
<td>4</td>
<td>3.33%</td>
</tr>
<tr>
<td>Flexibility of the organisation.</td>
<td>5</td>
<td>4.17%</td>
</tr>
<tr>
<td>Formal vs. informal workplace.</td>
<td>15</td>
<td>12.50%</td>
</tr>
<tr>
<td>Validation.</td>
<td>6</td>
<td>5.00%</td>
</tr>
<tr>
<td>Oneness.</td>
<td>13</td>
<td>10.83%</td>
</tr>
<tr>
<td>Organisation services.</td>
<td>11</td>
<td>9.17%</td>
</tr>
<tr>
<td>Self-identity for the individual.</td>
<td>4</td>
<td>3.33%</td>
</tr>
<tr>
<td>Dialogue.</td>
<td>4</td>
<td>3.33%</td>
</tr>
<tr>
<td>Purpose of the job.</td>
<td>3</td>
<td>2.50%</td>
</tr>
<tr>
<td>Respect for the individual.</td>
<td>3</td>
<td>2.50%</td>
</tr>
<tr>
<td>Support from the organisation.</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>1.00%</td>
</tr>
</tbody>
</table>

Therefore it can be concluded that the following keys are not motivational factors at Faurecia East London:

- Formal vs. informal workplace;
- Oneness;
- Organisation services;
• Balance in the organisation; and
• Invention.

It is important to note that five respondents do not regard challenge as a motivation factor.

In Question Three the respondents were asked to indicate which factors influence positively on their productivity. 25 percent of the respondents felt that challenge influences their performance positively. Why was challenge not selected as a motivating factor in Question Two? Challenge is considered by Hackman-Oldham’s theory of job enrichment, as one of the important factors that make work meaningful.

This supports the view that challenge is not just a means of satisfying people but it can be used to boost and improve performance. The second factor that can be considered of primary importance, is acknowledgment of performance. Figure 5.3 and Table 5.3 illustrate how employees responded:
Table 5.3: Results of Question Three of the empirical study.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>No responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenge</td>
<td>15</td>
<td>25.66%</td>
</tr>
<tr>
<td>Personal development.</td>
<td>6</td>
<td>10.34%</td>
</tr>
<tr>
<td>Direction.</td>
<td>1</td>
<td>1.72%</td>
</tr>
<tr>
<td>Fit within the organisation.</td>
<td>1</td>
<td>1.72%</td>
</tr>
<tr>
<td>Balance within the organisation.</td>
<td></td>
<td>0.00%</td>
</tr>
<tr>
<td>Invention.</td>
<td></td>
<td>0.00%</td>
</tr>
<tr>
<td>Ownership of process.</td>
<td>3</td>
<td>5.17%</td>
</tr>
<tr>
<td>Relationship building.</td>
<td></td>
<td>0.00%</td>
</tr>
<tr>
<td>Worth recognition.</td>
<td>5</td>
<td>8.62%</td>
</tr>
<tr>
<td>Relevance of job.</td>
<td>2</td>
<td>3.45%</td>
</tr>
<tr>
<td>Acknowledgement of performance.</td>
<td>10</td>
<td>17.24%</td>
</tr>
<tr>
<td>Equality in the work place.</td>
<td>3</td>
<td>5.17%</td>
</tr>
<tr>
<td>Flexibility of the organisation.</td>
<td>2</td>
<td>3.45%</td>
</tr>
<tr>
<td>Formal vs. informal workplace.</td>
<td></td>
<td>0.00%</td>
</tr>
<tr>
<td>Validation.</td>
<td></td>
<td>0.00%</td>
</tr>
<tr>
<td>Oneness.</td>
<td>1</td>
<td>1.72%</td>
</tr>
<tr>
<td>Organisation services.</td>
<td>2</td>
<td>3.45%</td>
</tr>
<tr>
<td>Self identity for the individual.</td>
<td></td>
<td>0.00%</td>
</tr>
<tr>
<td>Dialogue.</td>
<td></td>
<td>0.00%</td>
</tr>
<tr>
<td>Purpose of the job.</td>
<td>3</td>
<td>5.17%</td>
</tr>
<tr>
<td>Respect for the individual.</td>
<td>1</td>
<td>1.72%</td>
</tr>
<tr>
<td>Support from the organisation.</td>
<td>3</td>
<td>5.17%</td>
</tr>
</tbody>
</table>
Figure 5.3: A graphical representation of responses to Question Three.

Question Four dealt with Johnson & Scholes’ cultural web theory. 75 percent of respondents were positive towards the routines and the image of the organisation, while 65 percent of respondents were happy with the control system of the organisation. On analyzing the data, it was discovered that management and salary staff have a higher percentage of negative perceptions of the company culture than the wage staff.

This indicates unhappiness with the organisation’s culture at higher levels. Table 5.4 and Figure 5.4 illustrate the employees’ responses:
Table 5.4: Results of Question Four of the empirical study.

<table>
<thead>
<tr>
<th>Total responses</th>
<th>Yes</th>
<th>No</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you happy with the routines that you have to perform in your job?</td>
<td>22</td>
<td>7</td>
<td>75.86%</td>
</tr>
<tr>
<td>Do you like the image of your organisation?</td>
<td>23</td>
<td>6</td>
<td>79.31%</td>
</tr>
<tr>
<td>Are you happy with the organisation structure and control system?</td>
<td>19</td>
<td>10</td>
<td>65.52%</td>
</tr>
</tbody>
</table>

Management and salary staff

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you happy with the routines that you have to perform in your job?</td>
<td>7</td>
<td>2</td>
<td>22.22%</td>
</tr>
<tr>
<td>Do you like the image of your organisation?</td>
<td>4</td>
<td>5</td>
<td>55.56%</td>
</tr>
<tr>
<td>Are you happy with the organisation structure and control system?</td>
<td>2</td>
<td>7</td>
<td>77.78%</td>
</tr>
</tbody>
</table>

Wage Staff

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you happy with the routines that you have to perform in your job?</td>
<td>15</td>
<td>5</td>
<td>25.00%</td>
</tr>
<tr>
<td>Do you like the image of your organisation?</td>
<td>19</td>
<td>1</td>
<td>5.00%</td>
</tr>
<tr>
<td>Are you happy with the organisation structure and control system?</td>
<td>17</td>
<td>3</td>
<td>15.00%</td>
</tr>
</tbody>
</table>

Figure 5.4: A graphical representation of responses to Question Four.

![Question Four Graph](image-url)
Question Five tested the respondents’ pre-disposition to work in teams. As can be seen from the results in Table 5.6, 68 percent of respondents prefer to work as a team, 72 percent see themselves as leaders and 58 percent feel self-motivated. This is a clear indication that there is teamwork preference and the majority (72 percent) of respondents feel that they have leadership skills.

The third section of Question Five gave a 58 to 42 percent split between self-motivation and motivation from a leader. It is difficult to classify the respondents according to McGregor’s theory of X and Y traits. It can be concluded that the organisation’s culture is of a co-operative nature but there is a tendency towards individualistic traits as a portion of the respondents’ feel that they can work alone and are self-motivated. Figure 5.5 illustrates the responses to Question Five.

Table 5.5: Results of Question Five of the empirical study.

| Employees who prefer to work in a group | 20    | 68.97% |
| Employees who prefer to work alone     | 9     | 31.03% |
| Employees who see themselves as a leader| 21    | 72.41% |
| Employees who see themselves as a team player | 8   | 27.59% |
| Employees who see themselves motivated by a leader | 12 | 41.38% |
| Employees who see themselves as self motivated | 17 | 58.62% |
Figure 5.5: A graphical representation of responses to Question Five.

- Employees who prefer to work in a group
- Employees who prefer to work alone

- Employees who see themselves as a leader
- Employees who see themselves as team players

- Employees who see themselves motivated by a leader
- Employees who see themselves as self-motivated
Question Six analyzed the organisation’s work team structure and functioning. All respondents work in functional teams. The results indicate that the human resource structure is the organisation’s weakness. 72 percent of respondents felt that the human resource structure is not adequate for team functioning. The respondents pointed out other weaknesses of their team structure, which indicate team malfunctioning or individual problems that should be addressed. Table 5.6 and Figure 5.6 illustrate the responses.

Table 5.6: Results of Question Six of the empirical study.

<table>
<thead>
<tr>
<th></th>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function and purpose</td>
<td>23</td>
<td>6</td>
</tr>
<tr>
<td>Organisation culture</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>Organisation design</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Human Resource structure</td>
<td>8</td>
<td>21</td>
</tr>
<tr>
<td>Physical environment</td>
<td>20</td>
<td>9</td>
</tr>
<tr>
<td>Group size</td>
<td>22</td>
<td>7</td>
</tr>
<tr>
<td>Status &amp; power</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Leadership structure</td>
<td>19</td>
<td>10</td>
</tr>
</tbody>
</table>

Figure 5.6: A graphical representation of responses to Question Six.
Question Seven: Bavendam Research’s theory of job satisfaction was tested. It is interesting to note that the environment that the respondents are exposed to is clearly influencing the response as explained by Bavendam Research. As indicated by Table 5.7 and illustrated in Figure 5.7, 31 percent of the respondents felt that the most important factors for job satisfaction are work standards and quality levels. Owing to the continuous drives by the organisation, as well as the customer, for improved quality, it is evident that needs for job satisfaction at Faurecia differ from Bavendam Research’s results.

Table 5.7: Results of Question Seven of the empirical study.

<table>
<thead>
<tr>
<th>Responses</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity</td>
<td>3</td>
</tr>
<tr>
<td>Stress</td>
<td>4</td>
</tr>
<tr>
<td>Leadership</td>
<td>8</td>
</tr>
<tr>
<td>Work standards / quality levels</td>
<td>9</td>
</tr>
<tr>
<td>Fair rewards</td>
<td>3</td>
</tr>
<tr>
<td>Adequate authority</td>
<td>2</td>
</tr>
</tbody>
</table>

Figure 5.7: A graphical representation of responses to Question Seven.
Question Eight tested the 22 keys as a final test for the selection of factors, which influence the meaningfulness of the workplace in a just-in-time environment at Faurecia East London. A comparison between question two and three, separates the factors into two categories: those which influence the meaningfulness of the workplace and those which influence motivation. The votes are calculated by adding the rank for each key, therefore the lowest scoring keys are the highest ranked. Table 5.8 and Figure 5.8 report the results.

Table 5.8: Results of Question Eight of the empirical study.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Votes</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenge</td>
<td>121</td>
<td>1</td>
</tr>
<tr>
<td>Personal development.</td>
<td>215</td>
<td>2</td>
</tr>
<tr>
<td>Direction.</td>
<td>285</td>
<td>3</td>
</tr>
<tr>
<td>Purpose of the job.</td>
<td>293</td>
<td>4</td>
</tr>
<tr>
<td>Worth recognition.</td>
<td>293</td>
<td>5</td>
</tr>
<tr>
<td>Flexibility of the organisation.</td>
<td>306</td>
<td>6</td>
</tr>
<tr>
<td>Dialogue.</td>
<td>309</td>
<td>7</td>
</tr>
<tr>
<td>Organisation services.</td>
<td>314</td>
<td>8</td>
</tr>
<tr>
<td>Validation.</td>
<td>322</td>
<td>9</td>
</tr>
<tr>
<td>Acknowledgement of performance.</td>
<td>325</td>
<td>10</td>
</tr>
<tr>
<td>Invention.</td>
<td>348</td>
<td>11</td>
</tr>
<tr>
<td>Respect for the individual.</td>
<td>349</td>
<td>12</td>
</tr>
<tr>
<td>Formal vs. informal workplace.</td>
<td>350</td>
<td>13</td>
</tr>
<tr>
<td>Support from the organisation.</td>
<td>358</td>
<td>14</td>
</tr>
<tr>
<td>Self-identity for the individual.</td>
<td>369</td>
<td>15</td>
</tr>
<tr>
<td>Oneness.</td>
<td>378</td>
<td>16</td>
</tr>
<tr>
<td>Ownership of process.</td>
<td>385</td>
<td>17</td>
</tr>
<tr>
<td>Fit within the organisation.</td>
<td>395</td>
<td>18</td>
</tr>
<tr>
<td>Equality in the work place.</td>
<td>396</td>
<td>19</td>
</tr>
<tr>
<td>Balance within the organisation.</td>
<td>398</td>
<td>20</td>
</tr>
<tr>
<td>Relationship building.</td>
<td>405</td>
<td>21</td>
</tr>
<tr>
<td>Relevance of job.</td>
<td>423</td>
<td>22</td>
</tr>
</tbody>
</table>
Figure 5.8: A graphical representation of responses to Question Eight.

Figure 5.8 clearly indicates the importance of Challenge as the main Key factor for a meaningful workplace. Other important factors indicated by the respondents were:

- Personal development,
- Direction, and
- Respect for the individual.
Question Nine was directed specifically at the many problems, to establish the main factors that influence work performance. The respondents had different answers and the ranking was different for each respondent. Table 5.9 and Figure 5.9 illustrate the responses:

Table 5.9: Results of Question Nine of the empirical study.

<table>
<thead>
<tr>
<th></th>
<th>Management Salary staff</th>
<th>Management Wage Staff</th>
<th>Wage Salary staff</th>
<th>Wage Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time pressure due to customer demands.</td>
<td>4</td>
<td>0.00%</td>
<td>20.00%</td>
<td></td>
</tr>
<tr>
<td>Customer’s watchful eye.</td>
<td>1</td>
<td>8</td>
<td>11.11%</td>
<td>40.00%</td>
</tr>
<tr>
<td>Plant related bureaucracy, (e.g., Plant access procedures).</td>
<td>1</td>
<td>1</td>
<td>11.11%</td>
<td>5.00%</td>
</tr>
<tr>
<td>Work times dictated by the customer.</td>
<td>1</td>
<td>1</td>
<td>0.00%</td>
<td>5.00%</td>
</tr>
<tr>
<td>Customer involvement in organisation related issues.</td>
<td>5</td>
<td>2</td>
<td>55.56%</td>
<td>10.00%</td>
</tr>
<tr>
<td>On site services.</td>
<td>2</td>
<td>4</td>
<td>22.22%</td>
<td>20.00%</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>20</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>
Figure 5.9: A graphical representation of responses to Question Eight.

It is interesting to note that 55 percent of management felt that their pressure was coming from customer involvement in plant related issues. This can be attributed to the customer involvement on a day-to-day running of the plant. While 40 percent of the wage staff felt that the customer’s watchful eye was interfering with their performance, it is evident that the interrelationship with the customer can lead to frustrations.
Other factors such as plant layout and time pressures are also factors that need to be considered as potential negative factors for the workplace’s meaningfulness. Factors such as on site services, plant bureaucracy and work times can be considered as positive factors to Faurecia’s environment.

In Question 10 the author tested the respondents’ awareness of the various theories explained in Chapter Two. All the respondents were aware of the just-in-time term. This can be attributed to their kind of work environment. It is interesting to note is that 82 percent of the respondents knew about world-class manufacturing, and 55 percent knew about self-managing work teams, while 27 percent knew about Kaizen theories and 33 percent knew about the theory of constraints. Table 5.10 and Figure 5.10 illustrate the responses to Question 10.

Table 5.10: Results of Question 10 of the empirical study.

<table>
<thead>
<tr>
<th>Theory</th>
<th>Yes</th>
<th>No</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just-in-time</td>
<td>29</td>
<td>0</td>
<td>100.00%</td>
</tr>
<tr>
<td>Kaizen theory</td>
<td>8</td>
<td>21</td>
<td>27.59%</td>
</tr>
<tr>
<td>World class manufacturing</td>
<td>24</td>
<td>5</td>
<td>82.76%</td>
</tr>
<tr>
<td>Theory of constraints</td>
<td>9</td>
<td>20</td>
<td>31.03%</td>
</tr>
<tr>
<td>The self managing work team strategy</td>
<td>16</td>
<td>13</td>
<td>55.17%</td>
</tr>
</tbody>
</table>
Figure 5.10: A graphical representation of responses to Question 10.
5.3 Summary

In this chapter the results of the empirical study have been presented and interpreted. The next chapter deals with the development of a model specifically for Faurecia’s type of environment. The empirical study has provided specific bases and concepts which are unique to the organisation.
Chapter 6

A model for Satellite Operations, Recommendations and Conclusions

6.1 Introduction

In Chapter Five the empirical study revealed factors which are specific to Faurecia, East London. In this chapter an organisation specific model for creating a meaningful workplace is developed. The model is explained in details to illustrate its components. This chapter will conclude with the resolution of the main and sub-problems, and with recommendations on the findings.

6.2 The model for Satellite Operations

The model is based on the concept that there is a difference between a meaningful workplace and job satisfaction as explained by Terez (2001:1). The model is based on three principal levels:

- The external environment;
- The organisation’s cultural web; and
- The organisation workplace and the individual.
Figure 6.1 illustrates the functioning of the model. Each level is explained in detail, with reference to the data collected in Chapter Five.

6.2.1 The internal environment

The internal environment is separated into two distinct environments: one is represented by individual job satisfaction factors; the other section is represented by the factors which influence the meaningfulness of the workplace as a collective environment.

The individual motivation and job satisfaction is affected by the following factors:

- **Worth recognition of individual performance.** The respondents felt strongly about this point. Management should investigate ways of projecting appreciation to all levels of employees.

- **Support from the organisation for individual needs.** This is a similar concept to worth recognition. This factor should also be investigated and it must ensure that empowerment of the individual is considered and employees’ needs are assessed.
Figure 6.1: A Model for Satellite Operations
• **Respect for the individual.** The respondents also felt strongly about this point, this could highlight an underlying problem that should be addressed at an individual level. All levels of employees should respect all individuals.

The second environment analysed by the author is the meaningful workplace. According to the results from the empirical study, the factors which influence the workplace are:

- **Challenge:** The organisation should consider how the routines could be kept as a challenge to employees, especially by embarking on new projects and systems, to improve the organisation productivity continuously.

- **Direction:** Management provides the direction and the vision of the organisation. To contribute to the meaningfulness of each employee, everyone should be involved in steering the organisation into the desired direction. Employee involvement in all decisions should be considered as a powerful tool to increase the employee’s interest in his or her job.

- **Purpose of the job:** To provide a meaning to the job, the organisation must provide a purpose. Especially in team oriented organisation
structures, the purpose of teams should be clearly explained and shared by every one.

The internal environment explained above, is a critical element of the organisation functioning. In addition, the internal environment has a direct effect on the individual’s behaviour. Just-in-time manufacturing has effects on individuals and it is recommended that the above factors should be considered as tools to improve job satisfaction.

6.2.2 The cultural web

As illustrated in Figure 6.1 as the internal environment, the cultural web also plays a role in the organisation environment. The empirical study reveals that management and salary staff are not happy with the following factors of the organisation’s culture:

- The control system;
- The image of the organisation; and
- Routines to be performed.
It is recommended that a further study should be conducted to find reasons why there is unhappiness in the above areas.

The cultural web is part of the model as it forms part of the organisation. The author feels that the above factors are being affected by the organisation’s situation and structure. There is an effect on management and salary staff that plays a role and should be focused on. This forms part of the solution to the main problem as the cultural web is being affected by the organisation’s external and the internal environment.

6.2.3 The external environment

The external environment represents all the factors related to the forces that the organisation is subject to as it is integrated within a bigger organisation. As reported in Chapter Five, the respondent indicated that the following factors are the main causes of influence on the organisation’s running.

- The customer’s watchful eye;
- The customer’s involvement in organisation related issues;
- Time pressures due to a just-in-time environment; and
- Plant layout and accessibility.
The above factors play a significant role for both management and employees. These forces need to be minimized to avoid effects on the internal environment. It is therefore suggested that the following actions should be taken:

- Ensure that effective communication between all employees and the customer is clear and unambiguous to establish standards and regulations.
- Agreement between management and the customer should be reached to ensure that all the regulations are followed and the customer should minimize involvement in the running of the operation.
- An in-depth study should be conducted to evaluate time constraints to avoid the negative effect of time pressure. The aim of such a study should ensure that all operations are balanced and all constraints are kept to minimum.
- The facilities used by Faurecia belong to the customer. A study should be conducted to ensure that the facilities are easily accessible to all employees and that the layout is conducive to positive performance.

The external environment has a definitive effect on the employees’ performance and ultimately on their job satisfaction. At this point, it can be pointed out that the main problem has been solved and recommendations have been established to minimize the effect of just-in-time production.
6.3 Conclusions and final remarks

This research focused on Faurecia, East London’s environment and situation. The study evaluated the effect of just-in-time production within an automobile manufacturer on job satisfaction. The theories related to this type of manufacturing have been presented to the reader to explain the general functioning of the organisation. Motivational theories were also presented to focus on what motivates employees, with the objective to uncover factors which influence motivation within the organisation. The first sub-problem was then solved and confirmed by the empirical study.

Terez’s 22 key factor was chosen as the most appropriate model to adapt to the organisation’s environment. This model also explains in detail that there is a difference between job satisfaction and a meaningful workplace. The first and second sub-problems were therefore solved.

The empirical study was conducted to further knowledge and uncover individual as well as collective factors being affected by the external environment. The study also revealed factors applicable to the internal environment. The model summarizes the effects of just-in-time as well as external forces on employee's
performance and motivation. The model is a solution to the main problem and to the third sub-problem.

This study dealt with uncovering the factors being affected. It is, therefore, suggested that further studies should be conducted to explain and counteract negative influences on the organisation. Management and top management should broaden the scope of the model presented in this study to further boost motivation, job satisfaction and, ultimately, to create a meaningful workplace.
List of references


Maritz, L.W. 2000. *An evaluation of a strategy of lean manufacturing as a means for a South African motor vehicle assembler to achieve core competence and middle management’s role in its implementation*. MBA dissertation. Port Elizabeth Technikon, Port Elizabeth, South Africa.


Terez, T. 2001. 22 keys to creating a meaningful workplace. Ohio: Tom Terez Workplace Solutions Inc.


Annexure

Questionnaire : Job Satisfaction

Name:………………………………………………………….
Position held:…………………………………………………

Question 1

Rank the following in order of importance: Your needs: Rank 1 to 5 (1 Most important)

<table>
<thead>
<tr>
<th>Rank</th>
<th>- Basic needs such as food, clothing and housing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Career and personal growth.</td>
</tr>
<tr>
<td></td>
<td>- Friendship and belonging</td>
</tr>
<tr>
<td></td>
<td>- Self respect and recognition.</td>
</tr>
<tr>
<td></td>
<td>- Safety and security.</td>
</tr>
</tbody>
</table>

Question 2

Indicate which the following characteristics of the workplace are motivational factors

<table>
<thead>
<tr>
<th>Motivational</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenge.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal development.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direction .</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fit within the organization.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance within the organization.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invention.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ownership of process.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship building.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worth recognition.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relevance of job.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acknowledgement of performance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equality on the work place.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexibility of the organization.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formal vs. informal workplace.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Validation.
Oneness.
Organization services.
Self identity for the individual.
Dialogue.
Purpose of the job.
Respect of the individual.
Support from the organization.

Question 3

What following factors will influence your productivity? Select two of the following:

Challenge.
Personal development.
Direction .
Fit within the organization.
Balance within the organization.
Invention.
Ownership of process.
Relationship building.
Worth recognition.
Relevance of job.
Acknowledgement of performance.
Equality on the work place.
Flexibility of the organization.
Formal vs. informal workplace.
Validation.
Oneness.
Organization services.
Self identity for the individual.
Dialogue.
Purpose of the job.
Respect of the individual.
Support from the organization.

Question 4
Are you happy with the routines that you have to perform in your job?

Yes  No

Do you like the image of your organization?

Yes  No

Are you happy with the organization structure and control system?

Yes  No

Question 5

Select the following. Do you prefer to work

in a group  or work alone

Do you see yourself to be a:

Leader  Team player

Do you think that people in your organization need to be:
Motivated by a leader

Or, are self motivated

Question 6

Indicate which are strengths and which are weaknesses in your work team:

<table>
<thead>
<tr>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function and purpose</td>
<td></td>
</tr>
<tr>
<td>Organization culture</td>
<td></td>
</tr>
<tr>
<td>Organization design</td>
<td></td>
</tr>
<tr>
<td>Human Resource structure</td>
<td></td>
</tr>
<tr>
<td>Physical environment</td>
<td></td>
</tr>
<tr>
<td>Group size</td>
<td></td>
</tr>
<tr>
<td>Status &amp; power</td>
<td></td>
</tr>
<tr>
<td>Leadership structure</td>
<td></td>
</tr>
</tbody>
</table>

Question 7

Rank the following. Which are the factors which influence your job satisfaction: 1 to 6
( 1= most important )

<table>
<thead>
<tr>
<th>Factor</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity</td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td></td>
</tr>
<tr>
<td>Work standards</td>
<td></td>
</tr>
<tr>
<td>Fair rewards</td>
<td></td>
</tr>
<tr>
<td>Adequate authority.</td>
<td></td>
</tr>
</tbody>
</table>

Question 8

Rank the following in order of importance. What aspects of your organization contribute to a meaningful workplace. 1 to 22 (1 = most important)
Question 9

Rank the following factors. Which of the following factors have negative influences on your work performance: 1 to 7 (1 = Most important)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time pressure due to customer demands</td>
<td></td>
</tr>
<tr>
<td>Customer watchful eye</td>
<td></td>
</tr>
<tr>
<td>Plant related bureaucracy, (e.g., Plant access procedures)</td>
<td></td>
</tr>
<tr>
<td>Work times dictated by the customer</td>
<td></td>
</tr>
<tr>
<td>Customer involvement on organization related issues</td>
<td></td>
</tr>
<tr>
<td>On site services</td>
<td></td>
</tr>
<tr>
<td>Plant layout and accessibility</td>
<td></td>
</tr>
</tbody>
</table>
Question 10

Have you got any knowledge of the following theories?:

- Just-in-time
- Kaizen theory
- World class manufacturing
- Theory of constraints
- The self managing work team strategy

Yes    No