Job Design Agenda in the Third Millennium

"Identifying the critical job characteristics in the modern workplace"

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The review of the main job design approaches (JCM in particular) has led to the conclusion that development in job design theory has not kept pace with the changes that have occurred in the organisational landscape. The JCM was developed principally from studies conducted during the 1950s of male shop floor in large scale industrial manufacturing plants. Work context and the workforce itself have changed dramatically since that time. The developments of technology have had a huge impact on the way in which work is conducted (Zijlstra et al, 1996; Gottfredson, 1997). While this change is widely recognised, the JCM remains the dominant influence in job design research and is yet to be superseded. In addition, little is known about the effect of such change in perception of the work psychosocial variables or people’s reaction towards these developments. Therefore, the aim of this research is to explore employees’ opinion and reaction towards workplace developments in order to identify the critical job characteristics in contemporary jobs from the employee’s perspective. The proposal was that allowing employees to decide what they like/dislike in their jobs would help in identifying the critical job characteristics in modern workplace. This was also expected to help in solving the narrow focus of the existing job design approaches’ especially the lack of job contextual factors (e.g. social contact, work-life balance) that enhance employee’ wellbeing and work performance.

In light of this, three studies were conducted: the first two studies were designed to identify the critical job characteristics in the current workplace from the employee’s perspective. By conducting a pilot study using qualitative techniques (interviews and content analysis) followed by a confirmatory study using quantitative techniques (checklist and factor analysis), 10 job characteristics were identified which were considered the critical dimensions for diagnosing the quality of modern jobs. Four of these characteristics were responsible for ‘job content’ design (intellectually challenging tasks, control, feedback, and training adequacy). The rest of the characteristics were factors responsible for ‘job context’ design (i.e. supportive supervision, supportive co-workers climate, work-life balance, financial rewards, recognition and physical environment). The third study was the formulation and empirical evaluation of a model for job redesign. The model was based partly on the critical job characteristics identified earlier and partly informed by psychological knowledge of job design and organisational behaviour research. Overall, each of the aims of the present research were achieved and some of the existing criticisms of job design approaches were addressed. The model dimensions attained significant results that were extracted from data collected from 667 employees working in various British organisations.

A general conclusion that can be drawn from the present research is that job design is no longer a matter of job content (task) design (the tangible feature of the job itself such as control and feedback); it is also a matter of job context design (the features of the work environment where the tasks are delivered such as supervisors’ practices and work-life balance). Both aspects were found to influence work performance and employees’ wellbeing via cognitive and motivational mechanisms. The present research challenges the popular belief of the inapplicability of redesigning job context factors (e.g. the social aspect of the job) and provides initial recommendations for job context redesign interventions.
My warm greetings go to

My family

My Supervisor Fred Zijlstra

My friends

My colleagues

And my sponsors at 'University of Jordan'
Papers arising


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Chapter

1 TOWARDS A JOB DESIGN MODEL FOR THE 21ST CENTURY

1.1 INTRODUCTION

The 1950s to the later part of the 1990s witnessed major developments in which the nature of work changed dramatically for most people. The 1960s and 1970s witnessed the introduction of new technology, particularly the use of computers, into the workplace. This was followed in the 1980s by a huge shift towards globalisation, with many organisations undergoing mergers, a move towards decentralisation and empowerment, new service sector work, growth in contingent work, and a rise in short-term and part time contracts. By the 90s, new forms of work were introduced that were enabled by the information and communications revolution, such as: e-businesses, teleworking, and more individualised career paths. By the beginning of the new millennium, information technology, restructuring and downsizing have continued to affect most of the occupational sectors, turning the world into a competitive electronic global market.

While this change is widely recognised, theories concerning job design have not developed accordingly, and stopped, to some extent, on Hackman and Oldham’s Job Characteristics Model (JCM) that was developed during the 70s. Besides, little is known about the effect of such work changes on how people perceive the psychosocial work variables or people’s reaction towards these developments.
However, such an issue is a very important one and ignoring it may have serious consequences especially relating to the success of redesign intervention programmes. For example, enriching characteristics that are not relevant in modern workplace practices (e.g. teleworking) or not matching employees’ expectations may lead to erroneous conclusions such as attributing the reasons for failure to the individual differences or organisational climate.

Consequently, this thesis is an attempt to explore employees’ opinions and reaction towards workplace developments from the job design perspective. The broader aim is to put forward and examine new dimensions to job design research that is appropriate to recent changes occurring within the context of modern workplace. The overarching aim is to investigate how work is designed within modern jobs, and the consequences of these designs on employee wellbeing and productivity.

This chapter contains an outline of the general research area and aims, and the content and structure of the thesis. The first aim of this chapter is to orient the reader to the text that follows by providing an overall picture of the research. This facilitates the reading of more detailed chapters. The second aim is introduce the aims and the rationale that drives the thesis, and thus to direct the reader’s attention to key issues.

1.2 MODERN WORKPLACE, A NEW CHALLENGE

There have been considerable changes in the work domain since the days of the Job Characteristics Model (JCM) in the 1970s. In this model Hackman and Oldham identified five job characteristics critical to employees’ motivation, satisfaction and performance. These characteristics are: skill variety, task identity, task significance,
autonomy, and feedback. The authors indicated that increasing these five characteristics lead to motivated workers who perform better, are less absent and who are more satisfied with their work. Although this theory is inspiring the empirical research in job design to this day, many criticisms were posed (see Chapter 2) especially to the origin of these characteristics (i.e. why these five characteristics in particular), the fact that they have not always been found to be separable aspects of jobs (Crodery and Sevastos, 1993) and the fact that the model was developed on shop floor workers in which the nature of the work and the workforce composition are different from current workplace (Parker and Wall, 1998). For that reason, some researchers have raised speculations regarding the compatibility of the JCM (and other approaches as well) with modern workplace practices (e.g. Kuk et al, 1999; Parker et al, 2001; Holman et al, 2002). Some commentators discussed the necessity of updating existing job design approaches to be compatible with developments occurring in the workplace. Some of these necessities are discussed in turn.

The first necessity to update existing job design research comes from the dramatic changes that have occurred in workplace practices. One major change in today’s work context has been a shift from manufacturing to service work and rise in frontline work involving direct contact with customers (e.g. banking, sales). For example, Parker, Wall and Cordery (2001) indicated that in the UK, 49.4% of employees working in services in 1975 had risen to 65.7 by 1999. Besides, developments in technology have had a huge impact on the way in which work is conducted. The availability of computers and the Internet mean that employees work can be synchronous (same time/ different place) or asynchronous (different time/ different place) meaning that people can make use of both the location of work as well as the time zone.
However, these changes and developments, have affected how work is conducted or, in other words, the way organisations and the employees in these organisations behave and interact. Firstly, the development of technology has led to a major shift from traditional physical tasks to more involvement in mental and cognitive tasks (Zijlstra, Schalk and Roe, 1996; Roe, Berg, and Zijlstra, 1994). Secondly, compared with workers 30 years ago, modern employees increasingly work in offices (and less in industry or in agriculture), with information or clients (and less with tangible objects), in teams, and with less job security.

Such developments have work design implications. First, jobs in modern contexts are becoming more knowledge-oriented. Applying new workplace practices, advanced information technology, expanded use of computer-based systems, and tendency for quick career development emphasises the importance of knowledge and learning, both for individuals and organisations. Therefore, in modern societies the emphasis on knowledge is huge. In an organisational setting, knowledge seems to be very important to organisational success as well as employees’ satisfaction (Warr, 2002b). Organisations nowadays are transforming into ‘learning organisations’ in which acquiring and delivering knowledge is an essential part of the organisation. As noted by Mohrman and Cohen (1995) “team members in different locations, on different schedules, and working in different organisations may rarely meet, but can still access the same customer data sets, use network software to do financial analysis, and share results on their electronic mail network” (p. 397). While such practices can be found in many organisations nowadays, little information is available about how such forms of work organisation affect the work content or context. For example, is autonomy, still the key characteristic in designing knowledge-oriented jobs especially when some studies reported mixed effects regarding autonomy role.
Mohrman and Cohen (1995) indicated that because of the information revolution, employees can easily access the database and act autonomously, but on the other hand such IT technology has enabled the monitoring of people's performance and therefore, can potentially reduce autonomy. Gottfredson (1997) indicated that communication quality between team members (and hence, cooperative environment between colleagues), organisational rewards (e.g. payment and recognition), and management practices are important aspects in knowledge-oriented jobs. However, Parker and Wall (1998) stated that “work design theory has been derived primarily from studies of shop floor employees in manufacturing and that it will need some development and reorientation in the context of knowledge work” (p. 87).

Accordingly, such developments and practices merely demonstrate that existing job characteristics should be reconsidered and expanded to include other job contextual factors rather than limited to the narrow concept of job content factors. Specifically, existing job design theories have paid strong attention to enriching job content factors (the objective features of the tasks such as task autonomy, task feedback, task variety etc.) with less or no attention to job context factors (features of the context in which the tasks are delivered such as social support, managerial practices, rewards system, physical environment etc.). As will be explained later in detail, recent empirical research has shown that enriching job content factors alone has failed to produce satisfactory gains in productivity and employee wellbeing (e.g. Kuk et al, 1999). There is increasing recognition that various contextual factors are important in the modern workplace context and can influence employee wellbeing and productivity. For example, Parker and Wall (1998) noted that an aspect of work that has not been visible in work design research but is likely to be relevant to modern work practices (e.g. teleworking), is home-work conflict (i.e. difficulties in juggling
the demands of work and family roles. Although working at home offers benefits such as more flexibility and freedom, there is also the potential risk of more conflict between home and work (e.g. interruption from children). Additionally, reduced social contact and support from peers is a further possible outcome of working at home. While the effect of contextual factors is widely recognised, existing job design models have focused on the enrichment of the job content and neglected the enrichment of the job contextual factors. This issue would question the compatibility of existing job design theories with modern work practices.

Another necessity to update existing job design approaches comes from the composition of the current workforce (less young, less white, less male). In comparison with the 70s, current workplaces include a higher proportion of female and elderly employees (e.g. baby boomers). While this composition is widely recognized, little is known about the effects of such composition on perceiving the psychosocial work variables. The lack of such information may create problems. For example, demographic developments indicate that the so-called ‘baby boom generation’ is about to retire, causing many societal and economic problems. Specifically, the post-World War II baby boom generation consists of persons born between 1946 and 1964. In 1996 baby boomers were between the ages of 32 and 50. By the end of 2005, the first of the baby boomers will begin to turn 60. Assuming a retirement age of 65, baby boomers will begin to retire by the year 2011. The late baby boomers are expected to begin retiring in large numbers after 2020. However, companies and HR planners should start planning as well as finding solutions to the expected problems when the first generation of baby boomers start to think about retirement. First of all, this will create shortages in the labour market, and, secondly, there will be a problem in paying their pensions. Consequently, many Western
European governments are now trying to consider strategies for increasing the age of retirement but those people can decide to retire early. In order to ask them to stay in their jobs longer, making work more attractive and taking into account the needs and requirements of an ageing workforce may have to be considered.

The third necessity to update existing job design theories is the heavy demand on workplace quality performance (e.g. innovation and creativity) which is a huge challenge facing the modern workplace (West and Far, 1990). The rise in market competition has led to an emphasis on workplace creativity, innovation and quality performance. Nowadays, creativity in the workplace is a vital issue as organisations require novelty in the form of better, more reliable, attractive and useful products and services. Consumers are asking for new products and new services. Therefore, each individual organisation struggles to get ahead of the competition in order to establish some security and market protection. Consequently, organisations find themselves facing the world as their market with huge competitive threats and demanding consumers. In such a position, organisations seem to have no alternative but to maintain continuous training and innovation programmes. In order to maintain an organisational novelty image, they have to keep adopting complex procedures to predict and control their future. They must keep up-to-date, deal and cope with much logistical, political, cultural and sociological legislation, not just locally or nationally but also internationally. Organisations realise that in order to adopt complexity they need to rely on creative or highly performing employees who want to learn and develop.

However, complexity and innovation are phenomena that can be subjected to human control and jobs can be designed to promote complexity and intellectual
challenge to achieve, in the end, creative or high proactive employees (Gottfredson, 1997). As will be explained in Chapter 2 in detail, existing job design characteristics appear insufficient to promote complexity or challenge in the workplace (Kuk et al, 1999). Thus, there is a requirement to update job characteristics with those responsible for loading job tasks with enough cognitive complexity (e.g. problem solving, stimulating tasks) to enable employees to be innovative and creative.

The final necessity to update job design models comes from the fact that modern life standards and labour unions as well as government legislation have forced organisations to address employees' wellbeing. A workplace with minimum job-related stress is a requirement in most Western societies and the developed world. In recent years work related stress that causes health problems has increased. Therefore, much government legislation has been issued to ensure that job tasks are physically safe (i.e. healthy environment and lack of hazards) and mentally safe, for example, lack stressors or emotional exhaustion (Demerouti et al, 2001).

Many developed countries realised early the relationship between job design variables and wellbeing. Many countries have posed legal regulations to force companies to address the psychosocial aspects of the work environment (Kompier, 1996). However, it seems that most of these regulations have been influenced by the job characteristics model (Hackman & Oldham, 1976) and the demand-control model (Karasek, 1979) in which autonomy, variety and job demands are the key features that cause stress and negative wellbeing. In recent years, job stress research indicates that wide ranges of psychosocial variables are contributing to employees' wellbeing. As an example, social support and work-home balance have become one of the important aspects of work stress research (Warr, 2002a; Kompier, 2003; Jones and Fletcher,
1993). Therefore, job design characteristics require updating to address new concepts emerging in mental health research to achieve better understanding that would meet individual and organisational expectations.

In conclusion, the brief review shows that the work context is very different today from which the major work design theories developed (i.e. during the 1970s). This does not mean that there are no points of continuity. There certainly are, as will be highlighted later. Nevertheless, there is also a need for some reorientation. As a simple example, service jobs typically require more attention to the contextual job factors such as the social support, rewards, recognition and work-life balance. In addition, the modern workplace context has required a job design approach which is more oriented for increasing both employee wellbeing and productivity. However, the more general message is that, at present, the field of job design is rather fragmented and its relevance to a changing work context can be questioned. It, therefore, seems the right time to attempt a review of the different perspectives on job design to draw an image of how future job design should look.

1.3 AIM AND PLAN OF THIS STUDY

This study aims to present a scientific contribution to job design research by trying to identify the critical job characteristics in contemporary jobs from another perspective (i.e. the employee’s perspective) using qualitative and quantitative methodologies.

More specifically, reviewing the methodology of developing the critical job characteristics for the main job design theories indicate that they were developed from
various perspectives using either qualitative or quantitative methodologies. Herzberg et al. (1959) published the first theory in job design research in which they produced a number of job characteristics described as important to employee motivation (i.e. from the employee perspective). By interviewing a sample of engineers and accountants followed by content analysis, they extracted a number of job characteristics that were considered critical in improving work quality (see next chapter for details). However, no study was reported to confirm these qualitative characteristics quantitatively using various job types.

Following that, Hackman and Oldham (1976) in their Job Characteristics Model (JCM) adopted a different methodology in which job characteristics were developed using literature and researchers’ experience but were confirmed on a large size sample (i.e. 658 employees) using various job types and occupational sectors. In the subsequent theories, the authors, more or less, used the same methodology (e.g. demand-control model, effort-rewards imbalance model). Recently, Warr (1987, 2002a) developed the Vitamin Model (VM) by using the literature review and identified a list of the critical job characteristics. The list can be described as comprehensive because it contained all the variables promoted by the other theories. No study, however, attempted to test the full list in the field.

A common feature of all these approaches is that none of them addressed the employees’ opinions or attitudes towards what can be considered the critical job characteristics in diagnosing work quality (apart of the hygiene-motivation theory). Although each of the perspectives adopted by these theories has both negative and positive aspects, a design that makes full use of the three perspectives (quantitative,
qualitative, and literature review) would be a wise solution in overcoming the bias of adopting any of them alone.

In light of this, the research described in this piece of work uses the three methodologies (i.e. qualitative, quantitative and literature review) to develop critical job characteristics which are appropriate to changes occurring within modern workplace practices. First, people will be interviewed about their work and about what they consider important aspects in contemporary jobs to be (i.e. the hygiene-motivation theory methodology). The aim here is two-fold: first to establish whether the dimensions of the JCM are still applicable in today's workplace. Second, to identify all the possible job features in contemporary jobs. The next step is to structure these opinions and perceptions in order to transfer them into sensible job characteristics using quantitative techniques based on a large size sample (i.e. JCM methodology). The overarching aim is to produce a list of the critical job characteristics like the one produced by Warr (1987; 2002a) but we will produce it empirically and from the employee's perspective.

By applying this multi-method perspective, a researcher is taking the identification process one step back and deciding the "good job" characteristics from the employees' perspective but not from his/her own experience. This approach addresses two issues. Firstly, the reasoning behind choosing particular job characteristics will be justified empirically and it will reflect employees' perspectives and not the researcher's background. Secondly, allowing employees to decide what they expect from their jobs could help to solve the narrow focus of existing job design approaches within the modern workplace. It is expected that some of the extracted characteristics
may indeed be variables important to modern jobs such as variables responsible for increasing job complexity and the contextual aspects of the job.

The final step is to put forward and examine such a job characteristics list within white collar jobs, and the consequences of these designs for employee wellbeing and productivity.

In summary the present research has three main goals:

1. To review relevant research conducted within the job design paradigm, use it to identify weaknesses and specify how job design modelling might be enhanced.

2. To identify the job characteristics that could be described as critical to contemporary jobs and from the employee’s perspective.

3. By achieving the first two objectives, a job design model will be formulated that may be appropriate to the modern workplace.

To meet these objectives, a literature review was conducted. A number of studies were designed in order to identify critical job characteristics as well as developing a job design model. The research design consists of three studies. The first two studies were exploratory ones and aimed to identify the desirable job characteristics in contemporary jobs. The third (and final) study was an attempt to develop a job design model using the critical job characteristics identified via the first two studies as well as recent psychological knowledge founded in recent organisational behaviour literature. The final step was empirical research that aimed to evaluate the model in a field study and to discuss the implication of the current findings for job design in the 21st century.
To provide a clear presentation, this research is displayed in 7 chapters. In the second chapter, a review of the existing job design approaches (Job Characteristics Model in particular) that have been investigated in the occupational psychology literature is attempted; this provides the necessary background on the history and theoretical underpinning of work design research.

The third chapter will describe a study aimed at exploring all the possible job feature in contemporary jobs from the employee’s perspective using interviews and content analysis. Chapter four describes the second study that was conducted to structure the qualitative data obtained from the first study and identifies the critical job characteristics using quantitative techniques.

Chapter five will be dedicated to describing a theoretical job design model using the critical job characteristics extracted via the first two studies. The sixth chapter will describe a study to evaluate the model in the field.

The last chapter will contain a general discussion as well as some concluding remarks in the realm of the changes that have taken place in the work context. Additionally, problems and limitations of the current research will be highlighted and recommendations for further directions will be discussed.
Chapter

2

JOB DESIGN APPROACHES: A CRITICAL REVIEW

2.1 INTRODUCTION

Developments in work design theory have not kept pace with the changes occurring in the organisational landscape. Some researchers have discussed flaws within the existing job design approaches that threatened their compatibility with the modern workplace (e.g. Parker and Wall, 1998; Kuk et al, 1999; Holman et al, 2002).

Therefore, the aim of this chapter is to provide a critical review of the existing job design approaches that have been investigated in work and organisational psychology literature. This review will provide an overview of the existing job design approaches and the aspects that should be improved to capture the developments that have occurred in the modern workplace.

To provide a clear presentation, this chapter is divided into five sections. In the first section, a historical review of job design methods is presented. Following that, a general review of the main job design approaches is provided in order to identify the overlapping concepts as well as the main differences between job design approaches.

In the third section, a critical review of the Job Characteristics Model (JCM; the most influential model in job design paradigm) is undertaken. This provided the opportunity to specify the weaknesses or criticisms of the model at theoretical and
practical levels and how these weaknesses could be improved to meet modern workplace challenges.

After mapping the territory of job design research, the last section is dedicated to presenting a vision of how job design research should be enhanced to capture the developments occurring in the 21st century.

2.2 JOB DESIGN: THE SOCIAL CONTEXT

In order to fulfill the organisation's mission, a number of people are hired to do the work. This means that the work has to be divided between the members of the organisation. Each member, however, has a set of instructions about what he/she is expected to do. These instructions refer to type of activity that has to be undertaken, and what the expected results should be, all within the particular organisation's context. Such an instruction is called a 'task' and a set of instruction constitutes a 'job'. Jobs, therefore, consists of a set of tasks that are logically related (from organisational perspective) forming a consistent and coherent identity, and that each can be a starting point for a (re)design activity. Consider for instance, an office environment in which there are a number of activities (e.g. filling, distributing mail, typing letters). These activities are the 'tasks' and the 'job' that comprises these tasks together can be called for example the 'secretary'. Accordingly, job design is concerned with identifying the arrangements needed to organise these tasks in such away that would guarantee delivering them effectively without negatively influencing the performer or the people who is dealing with him or her (e.g. the performer family, children).
The concept of job design can be traced back to the time of the Industrial Revolution that emerged in the United Kingdom in the 1750s. At that time, the leading principle for the design of production systems was to split up the work into as many simple tasks as possible as a way of enhancing performance, reducing costs, and better control of production processes (Algera, 1998). This approach of work simplification was influenced by theoreticians and expert practitioners such as Adam Smith who promoted the division of labour or breaking down a complex job into simpler ones, as a way of enhancing performance. Charles Babbage expanded on these ideas and added some advantages of applying job simplification such as less skilled, and hence cheaper, labour. By the beginning of the 20th century, the concept of job simplification was given greater interest via Henry Ford’s practical tactics about assembly lines in his slaughterhouse and car factories; and Frederick Taylor’s (1911) introduction of time and motion studies. Taylorism, scientific management and work simplification were different names for the same outcome of these ideas.

Taylor introduced time and motion studies to determine the best work methods and work pace but, sadly, these concepts were exploited and used as a means to increase work pace and to further erode tasks. Some negative sides emerged as a reaction to job simplification (for overview see Kelly, 1982), such as workers’ fatigue, boredom, dissatisfaction, non-commitment, high absenteeism, tardiness, high turnover, common carelessness, and non-caring. These negative effects were so clear that the American Congress passed a bill in 1915, in which the use of time recording instruments for the measurement of work performance was prohibited within government institutions.

The earliest suggested concept to overcome the negative sides of Taylorism and job simplification was Job Rotation (mainly in the human relation movement by
Mayo, 1924 and the well known Hawthorne experiments). Job rotation involves workers moving at regular intervals to other workstations to perform different tasks either on an obligatory or a voluntary basis. Parker and Wall (1998) indicated some benefits for individuals including reduced boredom and relief from repetitive movements, also improved job interest. Supporters of this approach argued that job rotation was an effective training method because a worker rotating through a number of related jobs ends up with a broader set of job skills. This provides the organisation with greater flexibility. Nevertheless, this method did not solve the problem of repetitive jobs that lead to fatigue as it resulted in simple jobs that change often. Besides, this method involves higher costs because workers then require more training and more time to produce the same product (see Kelly, 1982).

Job rotation remained the dominant job design technique until the end of Second World War (1940's and 1950's), when a new technique was applied, i.e. job enlargement or "horizontal job loading". This concept means an expansion of the worker's job to include tasks previously performed by other workers. Typically, it involves two or more different simplified jobs to lengthen the work cycle and to increase the variety (Davis et al, 1955). The rationale for the changes was that the increased number of tasks created greater variety and interest, with a reduction in the monotony and boredom associated with the previous narrowly defined specialised tasks. In some cases it is possible to enlarge the set of tasks to such a degree that an employee completes a whole job from start to finish. Consider for an instance, an office environment in which each employee carries out a particular task (such as filing) for a range of clients. Reorganising the work so that one employee carries out all of the key tasks (filing, mail, typing, etc.) for a particular client would be a good example of this type of work redesign (Parker and Wall, 1998).
Davis et al (1955) reported some positive effects of horizontal job enlargement such as higher productivity levels, higher level of satisfaction and higher level of interest and commitment. Nevertheless, this approach did not do much to reduce problems of boredom, fatigue and high costs as the workers require considerably more training and the job still lacks autonomy and authority (Herzberg, 1968). In practice, job enlargement often failed to live up to expectations and was no more than a collection of simple tasks. As Herzberg (1966) noted, adding one Mickey Mouse job to another does not make it any more than two Mickey Mouse jobs.

However, the disappointing results arising from the adoption of job rotation and job enlargement introduced a new technique called 'job enrichment'. This technique is a more sophisticated approach to job design that allows a worker's control over the thinking and planning of a job to increase his/her participation in setting organisation policy (Parker and Wall, 1998). By job enrichment one normally means a scheme where the employee is given more responsibility for planning, organisation of work and daily checking of production.

In contrast to job enlargement, this type of scheme mainly concerns a vertical transfer of tasks or vertical expansion of jobs. Vertical means that tasks from jobs at various levels in a conventional hierarchy of command, supervision and responsibility are combined, so that the new jobs contain elements of work from different levels. As explained by Bailey (1983), vertical integration means "employees may be involved in the planning and organisation of their work; for checking and quality control, or for auxiliary tasks such as record keeping and supply of materials or certain aspects or routine maintenance" (p 13). The author added that the aim and effect of this type of design is to enhance the motivational content of the jobs in terms of increased
autonomy, decision making, responsibility, recognition and individual development. However, vertical job enrichment does have implications in terms of organisation, since it gives employees greater involvement in making decisions that have traditionally been the responsibility of management or specialist functions.

The evolution of job enrichment concepts produced many theoretical frameworks that became the most influential revolution in the job design framework. One of the key concepts that emerged from job enrichment is what is called job characteristics approaches. This domain deals with identifying the core job characteristics responsible for improving work quality. A key job characteristic that can be found in most literature is the degree of autonomy that employees have over their work tasks including when tasks are performed, the methods used, where and by whom (Bailly, 1983). Additional characteristics of work design include for example, the variety of tasks and the feedback employees receive from their tasks (Hackman and Oldham, 1976) and the opportunity for social contact (Karasek and Theorell, 1990).

Many job design approaches have evolved from adopting the job enrichment framework. The next section discusses some of the most influential approaches found in job design literature.

2.3 JOB DESIGN APPROACHES: THE JOB CHARACTERISTICS PERSPECTIVE

The 1950’s to the end of the 1980’s witnessed major theoretical developments in the field of job characteristics enrichment that increased the employee’s motivation
and satisfaction. The review distinguishes four main approaches or models that were developed specifically to redesign jobs. These theories are\(^1\): the hygiene-motivation theory (HMT; Herzberg et al, 1959); the job characteristics model (JCM; Hackman & Oldham, 1976); the socio-technical (ST) approach (e.g., Cherns, 1976); and the action theory (AT) approach (Hacker, 1986).

The review also distinguishes other theories or models that were not developed as job design approaches but have important implications for job enrichment or job redesign intervention. These theories are: the Michigan organization stress (MOS) model (Chaplen et al, 1972); the job demands-control model (DC; Karasek, 1979); the effort-reward imbalance (ERI) model (Siegrist, 1996); and the vitamin model (VM; Warr, 1987; 2002a).

These approaches stem from various psychological schools and research traditions. In general, they all stem from the 'job enrichment' approach that emerged as a reaction to the disappointing results arising from the adoption of job rotation and job enlargement principles. These, in turn, were suggested as a solution for Taylorist principles of work simplification that cause physical and psychological problems for workers (Kelly, 1982).

Regarding individual jobs, the first major theory was that of Herzberg and colleagues (Herzberg et al, 1959). In this theory the authors claimed that certain aspects in the job are important for improving work motivation. By interviewing a sample of engineers and accountants, the authors extracted two distinct lists of factors. One set of factors caused happy feelings or a good attitude within the worker, and

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\(^1\) Besides these theories, there have been some attempts to conceptualise other job enrichment approaches. In general, these attempts are less influential and stopped at the initial levels. Some of these include social information processing theory (Salanick & Preffer, 1978) and the multi-disciplinary approach of Campion and colleagues (e.g. Campion and McClelland, 1993).
these factors, on the whole, were task-related (i.e. recognition, achievement, possibility of growth, advancement, responsibility). The other group was the hygiene variables. These variables primarily emerged when feelings of unhappiness or bad attitude were evident, and these factors, Herzberg claimed, were not directly related to the job itself, but to the conditions that surrounded the job (i.e. salary; interpersonal relations – supervisor, interpersonal relations – subordinates, interpersonal relations – peers, supervision – technical, company policy and administration, working conditions, factors in personal life, status, and job security). Although the theory was influential for a decade, the hygiene-motivation theory lost support as empirical evidence failed to confirm its basic premise. The theory however, spurred the idea of job enrichment (Parker and Wall, 1998).

The hygiene-motivation theory was superseded by Hackman and Oldham’s (1976) Job Characteristics Model (JCM). As will be explained later in detail, the authors identified five job characteristics critical to employees’ motivation, satisfaction and performance. These characteristics are: skill variety, task identity, task significance, autonomy, and feedback. Although this theory is inspiring the empirical research in job design to this day, many criticisms were posed (see the next section) especially to the origin of these characteristics (i.e. why these five characteristics in particular) and the fact that they have not always been found to be separable aspects of jobs (Crodercy and Sevastos, 1993).

Another major theoretical perspective derives from the Socio-Technical System Approach, which originated at the Tavistock Institute of Human Relations in London during the 1950’s (For overview see Miller, 1999). The main theme of this approach distinguishes between social and technical subsystems in an organisation, and so, both
designing jobs and selecting methods need to be addressed simultaneously. This approach assumes that devolving control to work groups will enable the ‘joint optimisation’ of both the technological and social aspect of work. A successful ‘joint optimisation’ will reflect on employee’s productivity, satisfaction and mental health. The theory is famous for developing design systems for groups (e.g. self-autonomous work groups; Cherno, 1976). In terms of job characteristics, the features for team work paralleled those of the Job Characteristics Model such as: a reasonable level of demands, opportunities for learning, an area of decision-making owned by the operator, and performance feedback (Holman, Clegg, and Waterson, 2002).

While the job characteristics model and the socio-technical theory influenced the job design practices in the US and UK, another theory was influential in Germany known as the Action Theory (Hacker, 1986). This theory was developed basically to help engineers to design individual jobs. One of the basic concepts in this theory is that work activities are cognitively regulated at three levels: intellectual tasks (e.g. information processing, complex analyses, problem solving), roles (e.g. ready-made action programmes, rule based) and the sensory-motor tasks (e.g. simple movements, automatic actions). Another principle is that jobs should be balanced between these three levels. Therefore, jobs that contained one of these levels (e.g. sensory-motor level which represent monotonous jobs such as assembly production lines) would be considered low quality jobs that cause boredom. Similarly, jobs that contain tasks only at the intellectual level are considered to be stressful jobs and may cause exhaustion. In terms of job characteristics the theory promoted some job characteristics important for improving work quality such as controllability, complete tasks, healthy physical environment, feedback, task complexity, social interaction, and training and development (Frese and Zapf, 1994). In general, Action Theory seems to
have the right package for better job enrichment, but on the other hand the theory is still very theoretical and its concepts have not been fully tested empirically. According to Frese and Zapf (1994 p86), ‘Action theory has not been clearly defined or as well tested as some cognitive theories. At times action theorists seem to have been content with being able to use a concept in the field rather than to verify it independently’.

The remaining theories are not job design theories (mainly mental health and wellbeing theories) but they have important implications for job design as they have identified a number of job characteristics important for mental health and therefore, for diagnosing the quality of jobs. The first approach is the Michigan organisational stress model in which the developers identified some characteristics responsible for work stress. Some of the promoted job characteristics include occupational roles, demands, responsibility, job supplies, role ambiguity and social interaction. Another approach is the demand-control model of strain (Karasek, 1979). The model has promoted two characteristics: job control and job demands and indicated that the high quality jobs are those having high demands and high control. In further extensions, social support was added as a third dimension in the model (Karasek and Theorell, 1990). Similarly, the effort-reward imbalance model (Siegrist, 1996) has promoted two factors important for work quality and mental health and indicated that quality jobs are those having balance between the employees efforts (work demands) and the rewards offered by their employing organisation (payment, career opportunities, recognition and job security). The latest development in this area is provided by Warr (1987, 2002a) in the Vitamin model. Warr (2002a) indicated that healthy jobs should have 10 characteristics namely: opportunity for personnel control; opportunity for skill use; externally generated goals; variety; opportunity for interpersonal contact;
environmental clarity; availability of money; physical security; supportive supervision; and valued social position. Warr identified these characteristics based on an intensive literature review (Warr, 2002a). Warr's Vitamin model challenges the popular belief of this linear relationship between job characteristics and mental health outcomes including employee wellbeing. Instead the Vitamin model stipulates curvilinear relationships between some job characteristics (e.g. control, demand and social interaction) and feeling of stress, anxiety and depression (Warr, 1987). As explained in Chapter 1, the list of job characteristics promoted by this model can be described as comprehensive because it contains all the characteristics promoted by other theories. However, no study has attempted to test the full list in the field. Although these theories were not developed as job design theories (mainly as mental health approaches) they, nevertheless, influence job design research especially the demand-control model of strain.

Although the above eight approaches stem from different theoretical perspectives, there are remarkable overlaps between them when it comes to identifying 'critical job characteristics' (i.e. factors in the work environment affecting performer attitudes or behaviours). Table 2.1 presents a comparison of the main job design approaches (or those having implications for job enrichment) in terms of (a) the overlapping job characteristics that they adopted or promoted, (b) whether they included mechanisms or not, (c) the predicted outcomes, and (d) whether they had a detailed job redesign theory or not.

Table 2.1 illustrates that the most prominent job features that overlapped the eight approaches are 'variety' and 'autonomy'. Six out of eight theories (not in HMT and ERI) had marked these features as important aspects to any job. Another feature
overlapping between theories is ‘Job demands’ (six out of eight theories, not in HMT and JCM). Other characteristics are: recognition (or strongly related concepts, e.g., valuable member, significant job) which appears in six theories (not in DC & ST); ‘social contact’ is included in six theories (not in JCM & ERI), ‘learning and development’ in four, and ‘feedback’ in four.

Other less common variables include financial rewards, physical environment, job security and role ambiguity. However, as can be seen from the table, none of these approaches adopted or promoted the full list of these characteristics and no approach was successful in grouping them in a single model.

Another common point is that the identification process of most of these theories is not justified empirically. As explained in Chapter 1, a common feature to all these approaches is that none of them addressed the employees’ opinions or attitudes towards what can be considered the critical job characteristics in diagnosing work quality (apart of the hygiene-motivation theory). Therefore, these characterises can be described as reflecting researchers’ background rather than employees’ opinion of the critical aspects of the jobs.

A final point is that most job design theories have focused on the content of the job, and seem to have neglected the context of the job. However, the author believes that contextual factors also affect the employee’s wellbeing as well as the level of performance and should therefore, be also taken into account. Contextual factors can include the physical and social environment, the reward system of the organisation, working times, and factors that may affect the work-home balance of the worker.

Turner and Lawrence (1965) suggested that task characteristics are important and have a direct impact on performance. Herzberg (1959) had already referred to the
‘hygiene’ factors, which were actually the contextual factors, which affect the employees’ level of wellbeing. It may be useful to make a distinction between these factors, but it also clear that both aspects are complementary as far as the quality of a job is concerned. Warr (2002a) has mentioned studies that provide empirical evidence that both aspects (task characteristics and context characteristics) work together in affecting performance and wellbeing. This means an adequate job design theory needs to include both aspects.

In conclusion, the comparison between these theories indicated that, in general, they promoted characteristics that were oriented to enriching the job content (tasks) and neglected the job context factors. Besides, each of these theories promoted particular job aspects and neglected others. The only approach that can be described as having a comprehensive job characteristics list is the Vitamin Model because it contained all the variables promoted by other theories. Unfortunately, this model lacks empirical evidence and no study has attempted to confirm the structural dimensionality of the model to indicate whether they are separable aspects of the job or some of them may be merged together (e.g. factor analysis).

Although all the above job design approaches are important, this study will critically review the Job Characteristics Model (JCM) in particular because (a) it was the only model explicitly developed as a job design model during the 70s and is still considered the most widely recognised approach in job design research (Parker and Wall, 1998; Oldham, 1996); (b) the model attained hundreds of studies that were conducted around its principles and offered a detailed theoretical framework as well as redesign intervention techniques. This availability of literature allows a deeper analysis and therefore more significant conclusions.
Table 2.1: comparison between the main job design theories, the overlapped characteristics, mechanisms and outcomes

<table>
<thead>
<tr>
<th>Job Feature</th>
<th>HMT</th>
<th>JCM</th>
<th>MOS</th>
<th>DC</th>
<th>ST</th>
<th>AT</th>
<th>ERI</th>
<th>VM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variety</td>
<td>Not included</td>
<td>Included (task variety)</td>
<td>Included (intellectual level)</td>
<td>Included (intellectual demands)</td>
<td>Included (team level)</td>
<td>Included (task complexity)</td>
<td>Not included</td>
<td>Included (skill utilisation and complexity)</td>
</tr>
<tr>
<td>Autonomy</td>
<td>Not included</td>
<td>Included (task autonomy)</td>
<td>Included (decision latitude)</td>
<td>Included (team autonomy)</td>
<td>Included (controllability)</td>
<td>Not included</td>
<td>Included (personal control)</td>
<td></td>
</tr>
<tr>
<td>Challenge</td>
<td>Not included</td>
<td>Not included</td>
<td>Partly included (intellectual variety)</td>
<td>Included</td>
<td>Not included</td>
<td>Included (task complexity)</td>
<td>Not included</td>
<td>Not included</td>
</tr>
<tr>
<td>Feedback</td>
<td>Not included</td>
<td>Included (task feedback)</td>
<td>Not included</td>
<td>Not included</td>
<td>Included (team feedback)</td>
<td>Included (positive and negative)</td>
<td>Not included</td>
<td>Included (multi-resource feedback)</td>
</tr>
<tr>
<td>Work demands</td>
<td>Not included</td>
<td>Not included</td>
<td>Included (work load)</td>
<td>Included (job demands)</td>
<td>Important (regulation problems)</td>
<td>Included (task visibility)</td>
<td>Included (extrinsic effort)</td>
<td>Included (job and task demands)</td>
</tr>
<tr>
<td>Management support</td>
<td>Included (supervision, technical and relationships)</td>
<td>Not included</td>
<td>Not included</td>
<td>Party included (part of social support)</td>
<td>Important (self-management teams)</td>
<td>Included (towards empowerment)</td>
<td>Not included</td>
<td>Included (supportive supervision)</td>
</tr>
<tr>
<td>Social contact</td>
<td>Included (peers, subordinate relationships)</td>
<td>Not included</td>
<td>Included (interpersonal relations)</td>
<td>Included (social support)</td>
<td>Important (team communication)</td>
<td>Included (social interaction)</td>
<td>Not included</td>
<td>Included (interpersonal contact)</td>
</tr>
<tr>
<td>Recognition</td>
<td>Included (status, recognition)</td>
<td>Included (task significance)</td>
<td>Included (responsibility for others)</td>
<td>Not included</td>
<td>Not included</td>
<td>Included (complete task)</td>
<td>Included (equity reward)</td>
<td>Included (valued social position)</td>
</tr>
<tr>
<td>Life-work balance</td>
<td>Included (personal life factors)</td>
<td>Not included</td>
<td>Not included</td>
<td>Not included</td>
<td>Not included</td>
<td>Not included</td>
<td>Not included</td>
<td>Included (work-family conflict)</td>
</tr>
<tr>
<td>Training and learning opportunities</td>
<td>Included (growth and advancement)</td>
<td>Not included</td>
<td>Not included</td>
<td>Not included</td>
<td>Included (continuous learning)</td>
<td>Included (continuous learning)</td>
<td>Included (career opportunities)</td>
<td>Not included</td>
</tr>
<tr>
<td>Physical environment</td>
<td>Included (working conditions)</td>
<td>Not included</td>
<td>Not included</td>
<td>Not included</td>
<td>Not included</td>
<td>Included (physical obstacles)</td>
<td>Not included</td>
<td>Included (physical security)</td>
</tr>
<tr>
<td>Financial rewards</td>
<td>Included (salary)</td>
<td>Not included</td>
<td>Not included</td>
<td>Not included</td>
<td>Not included</td>
<td>Not included</td>
<td>Included (money reward)</td>
<td>Included (money availability)</td>
</tr>
<tr>
<td>Job security</td>
<td>Included (job security)</td>
<td>Not included</td>
<td>Included (future ambiguity)</td>
<td>Not included</td>
<td>Not included</td>
<td>Not included</td>
<td>Included (career opportunities)</td>
<td>Included (future ambiguity)</td>
</tr>
<tr>
<td>Mechanism</td>
<td>No mechanisms</td>
<td>Meaningfulness</td>
<td>Responsibility</td>
<td>Knowledge</td>
<td>Intermediate variables</td>
<td>No mechanisms</td>
<td>No mechanisms</td>
<td>No mechanisms</td>
</tr>
<tr>
<td>Moderators</td>
<td>No moderators</td>
<td>Growth needs strength</td>
<td>Personality</td>
<td>Demographic</td>
<td>Generics</td>
<td>No moderators</td>
<td>No moderators</td>
<td>No moderators</td>
</tr>
<tr>
<td>Predicted work outcomes</td>
<td>Satisfaction</td>
<td>Motivation</td>
<td>Job strain and work related stress</td>
<td>Productivity</td>
<td>Mental health</td>
<td>Physical and mental health</td>
<td>Affectional Well being</td>
<td></td>
</tr>
<tr>
<td>Redesign techniques</td>
<td>Provided</td>
<td>Provided</td>
<td>Not provided</td>
<td>Provided</td>
<td>Not provided in English language</td>
<td>Not provided</td>
<td>Not provided</td>
<td>Not provided</td>
</tr>
</tbody>
</table>

2.4 JOB CHARACTERISTICS MODEL (JCM)

This model was developed by Hackman & Oldham (1976), and since its early development has become the primary approach in numerous job redesigns. The model is considered one of the most widely examined approaches and hundreds of research and literature reviews were conducted around its assumptions (e.g. Fried & Ferris, 1987; Loher et al., 1985; Taber & Taylor, 1990; Behson et al, 2000).

Hackman and Oldham (1976) propose that employees’ motivation, satisfaction and performance are dependant on five core dimensions (see figure 1):

- **Skill Variety**: The degree to which a job requires a variety of different activities so the worker can use a number of different skills and talents.

- **Task Identity**: The degree to which the job requires completion of a whole and identifiable piece of work.

- **Task Significance**: The degree to which the job has a substantial impact on the lives or work of other people.

- **Autonomy**: the degree to which the job provides substantial freedom, independence and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out.

- **Feedback**: The degree to which carrying out work activities required by the job results in the individual’s receiving direct and clear information about the effectiveness of his or her performance.
Figure 2.1: Job characteristics model, adapted from Hackman & Oldham (1976)

The first three core dimensions cause an employee to view work as meaningful or important, worthwhile and valuable. Autonomy affects the employee’s sense of personal responsibility for outcomes. Immediate feedback from the job allows the employee to know how well he or she is doing. Another way of saying this is that the employee will receive more internal rewards when he or she learns (knowledge of results) that he or she personally (experienced responsibility) has performed well on a task that he or she cares about (experienced significance). The more these conditions are present, or at least perceived, the more motivated the employee will be, and performance and satisfaction will also increase. All of these relationships are moderated by *Employee's Need for Growth or growth need strength (GNS)* which means that employees with a high need for self-esteem and self-actualisation are more likely to experience the three psychological states when a job contains the core dimensions. The model claims that satisfying the psychological states should lead to
the following work outcomes: more satisfaction, internal work motivation, work performance, and less absenteeism and turnover (Hackman & Oldham, 1976).

Although the JCM achieved some successful redesign interventions during the seventies and early eighties (see Kopelman, 1985 and Oldham, 1996), the model received much criticism regarding its compatibility with the new work context and technological revolution (Kuk et al, 1999) threatening its validity to all jobs at all levels (Parker and Wall, 1998). These criticisms could be classified under three main categories: a) criticism regarding the structure of the JCM dimensionality; b) criticism concerning the role of the intermediate and moderator variables and c) criticism regarding the assumed outcome variables. Each category will be discussed in detail in the next sections.

2.4.1 The structure of JCM dimensionality

In the early work of Hackman & Oldham (1976), they point out that there are five distinct core job characteristics (skill variety, task identity, task significance, autonomy and feedback) which affect three psychological states and four work outcomes. The Job Diagnostic Survey (JDS) developed by Hackman & Oldham (1975) is the instrument used to assess these dimensions. JDS has 15 items to measure the job characteristics, three for each one. However, some researchers expressed concerns about the structure of JCM dimensionality. Some of them will be explained here in turn.

The first concern of JCM’s dimensionality structure deals with the origin of these task characteristics, where they come from and why there are just five. Reviewing a
JCM backbone study conducted by Turner and Lawrence (1965) indicated that the researchers used an instrument referred to as Requisite Task Attributes (RTA) to assess six job characteristics (responsibility, autonomy, required interaction, optional interaction, variety, and knowledge skill). The authors reported that these characteristics are the critical aspects in diagnosing work quality. Later Hackman and Oldham (1976) took three of these characteristics (i.e. variety, responsibility and autonomy) and added another two (task identity and feedback) and developed them into a model and tested them on a large sample. Hackman and Oldham (1976) claimed that these characteristics are the only critical ones for diagnosing work quality. However, no information is available about why they chose these five characteristics in particular and why there are just five. Turner & Lawrence (1965) indicated that they developed their dimensions from “their own experience as students of industrial work”, without indicating any quantitative or qualitative data that could be considered as backbone evidence for their chosen dimensions and so did Hackman and Oldham (1976) with their chosen dimensions. For example, Hackman and Oldham (1976) did not provide empirical evidence for why they excluded the social interaction aspect although it was one of the main aspects in Turner and Lawrence’s Requisite Task Attributes.

Another concern with the JCM structural dimensions deals with the fact that they have not always been found to be separable aspects of jobs (Cordery and Sevastos, 1993). Many studies have examined the five-dimension structure using different statistical methods (i.e. Meta analysis, regression, factor analysis...etc). Some of these studies appear to confirm the five dimensions measured by the JDS (e.g. Abdel Haleem, 1978; Kats, 1978; Ivancevich, 1978; Lee & Kliem, 1982, Ferratt & Reere, 1977). The researchers reported that there are five distinct dimensions that give
support to the five-dimensional structure. However, other studies failed to confirm all the five dimensions, some of them report three, and others reached just two or even one (Gaines & Jermier, 1983; O’reilly et al, 1980; Birnbaum, et al, 1986; Fried & Ferris, 1986; Cordery & Serastos, 1993). Some of these studies reported that skill variety and autonomy or skill variety and task significance are not separate aspects of the jobs.

The early studies that addressed the confusion between skill variety and task significance and autonomy were conducted by Dunham, et al. (1977). In this study the researchers examined the job characteristics in 20 different samples which contain various jobs. The results showed that the job dimensions are inconsistent across the different samples, and the five job dimensions do not apply to all jobs. Some of them support the structure of five dimensions; others suggest just three or even two characteristics. However, there was no relation between the number of dimensions and the type of jobs. For example, territorial staff and assistant sales managers’ samples were able to distinguish between the five dimensions while autonomy and variety collapsed into a single factor for both engineers and copywriter samples. These ambiguous results encouraged other researchers to investigate the five dimensions structure using the meta-analysis method. Thus, Fried & Ferris (1986) reanalyzed data gathered from 6930 employees working in 900 different jobs. All the studies they included used the JDS as the instrument to measure the job characteristics. The researchers also included other variables in their analysis such as educational level, age, and managerial level. The findings did not support the five dimensions and indicated that task identity and job feedback are distinct job dimensions. The other dimensions collapsed into a single factor (i.e. skill variety, task significance, and autonomy). Furthermore, the researchers argued that the ability to
distinguish between the characteristics is affected by age, educational level and managerial level and that these could be confounding variables. As an example, if the employee is young and well educated and in good managerial position, he or she will be better at differentiating the job characteristics.

In their efforts to explain the inconsistency in the JCM dimensionality, some researchers argued that this could be caused by the wording of JDS items and especially in the negatively worded ones. In the original JDS (Hackman & Oldham, 1975), each dimension was measured by 3 items. One of them, a 3-anchor item uses a format with short descriptive phrases anchoring its middle and end points. The other two items use a Likert format, one of them positively worded and the other is negative. Idaszak & Drasgow (1987) suggested that the problem came from the negatively worded Likert format items. Therefore, they revised the JDS by reversing the negative items into positive ones. The researchers reported that the structure factors became more consistent in the revised JDS. Nevertheless, other studies later indicate that the revised JDS only partially solved the problem of inconsistency (e.g. Cordery & Sevasto, 1993). The authors explained that respondents' education level is not the reason for the problems experienced with negatively worded items, nor does it appear that less educated workers are inherently less able to distinguish between job characteristics. Oldham's (1996) literature review concluded that after 20 years of investigation, the research could not determine the exact cause of the inconsistency.

Another problem with JCM dimensions is that some studies showed that they are not valid in diagnosing all job levels. JCM claims that these five dimensions are suitable to all jobs at all levels. However, in a recent survey by Kuk et al (1999) of more than 2265 job incumbents of 14 different occupations working in various British
organisations, the author reported that the JCM dimensions had failed to diagnose the quality of complex occupations (pilots, professionals, physicians etc.). Different explanations could be given for the inability of JCM' dimensions to diagnose complex jobs. The first explanation was given by Kuk et al (1999) in which it was noted that one of the reasons could be due to a major conceptual concern neglected by JCM which is the lack of cognitive enrichment or what is called 'intelligence loading'. The researcher recommended updating JCM job characteristics to include variables responsible for increasing cognitive complexity because it seems that the characteristics of autonomy or significance are insufficient nowadays in providing jobs with enough complexity.

Job complexity or cognitive loading seems to be a very important aspect in present day occupations. Gottfredson (1997) reported that the major distinction among jobs nowadays is the degree of mental complexity posed for workers. In addition, job satisfaction and performance are positively correlated with highly complex jobs. The author demonstrated how performance might be increased as a result of increasing task complexity (cognitive loading). Jobs with a high complexity and intelligence factor also tend to be more critical to organisations. Research data show that variance in performance level among workers rises with job complexity. Job complexity literature suggests that dealing with people tends to be complex and that task variety, lack of intensive supervision, change, recognition and learning opportunities all contribute to complexity. Thus, Gottfredson (1997) noted that jobs high in overall mental difficulty tend to be unstructured, entail much self direction, general responsibility, involve time pressure, variety and change, attention to detail, and emphasise creative rather than routine activities. On the other hand, the more highly supervised, more repetitive, physical the job, the less cognitively complex it is.
Another explanation for JCM dimensions failure for diagnosing the quality of complex occupations would be due to the fact that JCM neglects to enrich the job context factors in which tasks are delivered (e.g. social contact, physical environment, payment etc.). As explained earlier, there is growing evidence that contextual factors are very important in diagnosing work quality and working together with task characteristics to produce job satisfaction and its related outcomes (Warr, 2002a; Parker et al, 2001). The JCM pays attention only to task enrichment, in which job tasks are loaded with variety, autonomy, significance without paying attention to enriching contextual factors. For example, classical and current research indicates that regardless of how much variety or controllability employees have in their jobs they, for instance, they will express job dissatisfaction if they have tense relationships with their supervisor or their co-workers (Herzberg et al, 1959; Warr, 2002a; Houkes et al, 2003).

Recent research on the Psychological Contract (PC) and Perceived Organisational Support (POS) indicates that work contextual variables are important in employees’ behavioural and affective reactions. Most of employees have expectations of their organisations, e.g. regular pay, fair treatment by management, provision of equal opportunities for advancement, reasonable job security, and recognition (e.g. Guest & Conway, 2003). Empirical studies demonstrate how the positive evaluation of previous variables positively influences job satisfaction and trust in an organisation (Robinson & Rousseau, 1994), performance and turnover (Robinson, 1996), and organisational commitment (Guzzo et al, 1994). However, these results give a strong indication that job design is not just ‘task enrichment’ but also a matter of contextual quality. Thus, organisations with unsatisfactory contextual conditions should expect high employee dissatisfaction and its job related negative consequences.
Some researchers have tried to update JCM dimensions by adding other dimensions to the five characteristics such as person-task match (Jans & Mcmahon, 1989), physical demand (Stone & Guetual, 1984) social contact and supervisor’s support (Liden et al, 2000), or physical context (Dressel and Francis, 1987). Other researchers have tried to integrate some other approaches within JCM concepts. Vance & Biddle (1985) argue for an integration of the JCM and social information processing theory and how the social context affects job characteristics perception. Unfortunately, none of these attempts can be described as an effective solution to increase job complexity or quality as all of these attempts relied on particular theoretical background in determining what should be added. None of them have provided empirical evidence to support why that particular addition is the most important aspect while other aspects are not. In reality, there is a long list of dimensions that could be added to the job characteristics (Algera, 1998) and adopting any of them will be a purely subjective issue. As explained in the first chapter, a fair and wise solution would be letting employees themselves decide the important dimensions in their jobs and what they expect from them. This issue will be highlighted again in the third chapter.

In conclusion, JCM characteristics seem to be unable to diagnose all job levels. Therefore, these characteristics need updating to solve their inconsistency and to be compatible with modern workplace practices or systems. However, choosing particular job characteristics should be justified empirically and reflect the employee’s perspective and not just be influenced by theoretical justifications or the researchers’ background.
2.4.2 The role of mediated and moderated variables

The JCM proposed three critical psychological states to mediate the five job characteristics and the work outcomes of performance, absenteeism, satisfaction and motivation. As shown in Figure 2.1, the skill variety, task identity and task significance produce feeling of meaningfulness of the work, and autonomy associated with responsibility for work outcomes, while the feedback from the job contributes to the knowledge of the actual results of the work activities. Hence, reaching these psychological states would lead to preferable work outcomes. Furthermore, all relationships between the characteristics, mediators, and outcomes are moderated by the growth need strength (GNS). Hackman & Oldham (1976; 1980) demonstrated clearly that the role of the critical psychological states is very important and work in parallel with the moderator variable of Growth Need Strength (GNS) to produce work outcomes.

Concerning the role of the psychological mediating states, Hackman & Oldham (1976) indicate that the total variance explained by the model is better when the three psychological states are included. However, the later studies indicate that particular paths of correlation between the characteristics and psychological states are inconsistent. For example, Fried & Ferris (1987) and John, Lin and Yongqing (1992) reported that feedback in some cases is correlated more with responsibility than knowledge and meaningfulness correlated with all dimensions rather than variety, significance and identity. Furthermore, Fried and Ferris (1987) and Wall, Clegg and Jackson (1978) argued that removing the psychological states will not affect the model statistically, as the explained variance does not change significantly regardless of whether the psychological states are included or not.
However, Fox & Feldman, (1988) agreed with Fried and Ferris but stressed the importance of the role of psychological states for the model in theory and practice. The author demonstrated how excluding mediators from the model could lead to erroneous predictions. For example, if skill variety is assumed to be correlated directly with job satisfaction, this could lead practicing managers to believe that satisfaction can be improved simply by increasing the number of tasks performed by the worker. However, according to the JCM, skill variety should only lead to positive outcomes to the extent that these increased results lead to a corresponding increase in the meaningfulness of the work. If an increase in variety does not result in a rise in feelings of meaningfulness, it is reasonable to hypothesize that this would result in a negative or non-significant change in satisfaction. The increased variety might only reflect more boring, meaningless things to do.

Furthermore, John et al (1992) and Behson, Eddy and Lorenzet (2000) concluded that the psychological states were treated unfairly in the literature. Much of the research conducted around JCM violated its basic assumptions by excluding the psychological states from the formula. Behson et al (2000) reported that despite more than two decades of active research around JCM, they could find only 13 studies that examined the JCM with the psychological states included in the formula. Therefore, many researchers were unable to make definitive conclusions about the validity or importance of the psychological states. However, from these 13 studies Behson et al (2000) concluded that the most convincing connection was that between feedback and knowledge of results. The ‘problem’ state was responsibility, which was influenced by several of the job dimensions besides autonomy. Finally, regarding the utility of all three psychological states, John et al (1992) concluded “the psychological states do
On a different level, Parker and Wall (1998) criticised the concept of these mechanisms and indicated that all of them have a motivational nature. They explained that the model assumes that job redesign promotes impacts via a motivational mechanism, that is, by encouraging people to work harder (Parker and Wall, 1998). Therefore, work outcomes are expected because people working in enriched jobs are more motivated as this enrichment fulfils special needs and they will be less inclined to behave in dysfunctional ways because they want to avoid boring tasks (Berlinger et al, 1988) or make better use of their skills (Cordery et al, 1992). These assumptions are based on the satisfaction theory (i.e. people perform better because they are doing a meaningful job that satisfies their need for growth) and expectancy theory (people expect that working hard will lead to good performance and that good performance will lead to higher-order needs being fulfilled) or social reciprocity (people work hard because they expect that they will be rewarded for what they do.

Parker & Wall (1998) suggested including other types of mechanisms whose validity in job redesign is supported by recent research. For instance, social cognitive mechanisms of learning and related concepts were strongly recommended in recent job design literature as mechanisms that mediate job characteristics and work outcomes at a cognitive level (Holman and Wall, 2002; Leach et al, 2003). Other suggested mechanisms are quick response (employees value job enrichment because it enables them to respond immediately to job demands or faults; Kelly, 1992) and the processes of psychological empowerment (e.g. Wall, Cordery, & Clegg, 2002; Liden
The other important aspect of the model is the role of the moderator variables. As explained earlier, Hackman and Oldham (1976; 1980) proposed that moderators could play a role in differentiating people and understanding those who will (and who will not) respond positively to enriched jobs. Hackman & Oldham (1976) included one moderator that could affect the relationship between independent and dependent variables, which they called the Growth Need Strength (GNS). In their later writings, Hackman & Oldham (1980) expand the moderator variables and include other two variables: knowledge; skill and context satisfaction. They proposed that for jobs high in motivating potential, the people who have sufficient knowledge and skill will experience substantially positive feelings as a result of their work activities. However, people who are not competent enough to perform well will experience a good deal of unhappiness and frustration at work, precisely because the job “counts” for them and they do poorly at it. The other new variable is satisfaction with the work context: Hackman and Oldham (1980) thought that the aspects of the work context (payment, supervision, co-workers, job security) might affect their willingness or ability to take advantage of the opportunities for personal accomplishment provided by enriched work.

Many of studies tried to decide the role of the GNS and other moderators either by meta-analysis (e.g. Spector, 1985) or by finding the causality effect by applying the path analysis (e.g. Wall et al, 1978, John et al, 1992; Behson et al, 2000). Some studies indicate that GNS is correlated with work outcomes, in particular with job satisfaction and work performance (e.g. Hackman & Oldham, 1976, 1980; Aldag et
al., 1981). However, other studies conclude weak or no evidence for such an effect (e.g. John et al, 1992; White, 1978; Griffin, 1981). A meta-analysis for the GNS role done by Spector (1985) indicates that there is some evidence for the hypothesized moderator effect on job satisfaction motivation and performance, with the evidence for job satisfaction being the strongest. A high score on GNS indicates stronger correlation with all employee outcomes than employees low in need strength.

However, although the moderating role of the GNS is one of the assumptions of the job characteristics model, its conceptualization and measurement are rather weak (Parker & Wall, 1998). Parker and Wall added that the GNS, in general, refers to the top categories of Maslow’s need hierarchy. Unfortunately, the literature has been inconsistent as to the precise composition of these needs. Furthermore, there are not enough studies at the present time to investigate the moderating effect of each individual need. Besides, the GNS role is rather weak and provides a limitation to job redesign intervention. Assuming that personality factors determine the success of the job redesign limits the applicability of redesign intervention and limits outcomes only for employees who have the competence and capability to respond positively. The German Action Theory (AC) has something to say on this issue. Kompier (1996) indicated that while most job design theories indicate that individual factors affect outcomes, the Action Theory more or less turned the issue around in the sense that it is believed that work enhances personality. Thus, a proactive personality will be an outcome rather than an input. This seems to be a better understanding of the role of job redesign in which proactive personalities are supposed to be an outcome of job enrichment rather than a variable that determines the success of the redesign intervention.
Furthermore, the extended moderators of work context variables (e.g. payment, supervision, co-workers, job security) did not receive as much attention from researchers as the Growth Need Strength. Hackman and Oldham (1980) indicated that people who have positive perception of the contextual variables e.g. social contact, good payment etc should respond positively to an enriched work design. Therefore, they hypothesised that contextual factors are moderating the relationships between the task characteristics and the mediating variables (the psychological states) as well as the relationships between the mediating variables and the outcomes of motivation, performance and satisfaction. However, field-testing by John et al, (1992) and Orpen, (1979) indicates a moderating effect for these variables with work outcomes. Oldham (1996) concluded, based on his literature review, that the research gave little support for the predicted role of context satisfaction. However, such variables should not be addressed as moderators as they represent core job contextual characteristics that are essential to contemporary jobs. As explained earlier, recent research stressed the importance of contextual enrichment (e.g. social contact, payment, recognition) in perceiving jobs as quality ones and therefore, enhancing employees motivation, commitment and performance.

In conclusion, the mediator variables (the psychological states) seem to have an important theoretical role as they explain how work impacts might occur. However, not all the JCM’s mediators seem to be important with knowledge state being the most effective state (Behson et al, 2000). One explanation could be that the psychological states need to be freed from the narrow focus of the motivational mechanisms and include other mechanisms such as cognitive ones. Finally, the role of moderating variables (the variables that explain ho will and who will not respond to an enriched job design) is considered a limitation to job redesign intervention as
individual factors should be addressed as part of the job contextual factors that should be included as a core job characteristics.

2.4.3 The predicted outcome variables

The final concern with the validity of JCM deals with the proposed work outcomes variables. In Hackman & Oldham’s (1976) writing, a number of work outcomes were mentioned: intrinsic work motivation, job satisfaction, work performance, and absenteeism. In their later writings (i.e. 1980), absenteeism is no longer mentioned as a dependent variable, and work performance is replaced by work effectiveness. Hackman and Oldham (1976) reported moderate partial relationships between the proposed job characteristics, mediators and outcomes. Furthermore, the model was successful in explaining 52% of the internal worker motivation variance, 48% of variance in general satisfaction, and 59% of growth satisfaction variance. Work performance and absenteeism were not included in the regression analysis (perhaps because of the low correlations between the characteristics and performance and absenteeism).

Later research reported more or less the same results and showed that the job characteristics correlated moderately with the outcomes of satisfaction and motivation, and weakly with work performance (Fried and Ferris, 1987). One exception is reported by Kopelman (1985) in which the results showed that job satisfaction increased in 80% of the studies while the performance increased in 63%. In a meta-analysis by Behson et al (2000) using structural equation modelling, the job characteristics along with the psychological states managed to explain 38% of variance in motivation, 42% of general satisfaction and 42% of growth satisfaction.
Performance was not reported, as most of the examined studies did not include performance as a major outcome as originally proposed by Hackman and Oldham (1976).

The unsatisfactory indices of behavioural outcomes of performance and absenteeism were a major criticism posed by researchers and practitioners. From the handful of studies that tested behavioural outcomes, it seems that the JCM works better on a motivation and satisfaction level rather than on performance and absenteeism. Several explanations were given for such results. One of the explanations has to do with the methodology of measuring satisfaction and performance. Oldham (1996) argued that satisfaction and motivation were measured by items within the JDS while performance is assessed mainly using supervisors’ ratings to evaluate the quality and quantity of the work done. When all variables are measured in a single questionnaire using similar item formats, the variables tend to be more harmonious with each other than in comparisons with variables measured by different item format and different persons. Measuring the job dimensions and the outcomes using the same method would increase the common method variance. Therefore, relationships involving the motivation and satisfaction measures may have been inflated because of the common method variance causing the results of employees’ performance to appear weaker by comparison.

Another explanation of the differences of behavioural and personal outcomes could be due to the design of the studies. Parker and Turner (2002) indicated that job design research is dominated by cross sectional design without direct intervention procedures and argued that using another design would enhance the outcome results. Griffin (1991) used longitudinal design and provides excellent implications for how job
design outcomes might be achieved and reported better performance indices over time for enriched jobs. However longitudinal design is not easy to control and requires extensive logistics and cooperation from organisations and employees, which not easy to achieve in reality. Some researchers suggested techniques for enhancing cross sectional designs by using enhanced statistical methods. For example, some researchers used the structural equation modelling technique to investigate the relationships directions (e.g. de Jong et al, 2001, Behson et al, 2000, John et al, 1992). The researcher reported that such a statistical technique was an enhancement to cross sectional design data as it allows researchers to test the assumption of the effect of unmeasured latent variables.

The final explanation could be due to the fact that the five dimensions of JCM are insufficient to produce changes in performance. JCM focuses on enriching job tasks and neglecting other important job resources or contextual aspects such as social contact, work-life balance, rewards system, and communication quality which have demonstrated to have a positive influence on work performance (Robinson, 1996; Parker and Turner, 2002).

The last concern with JCM outcomes is neglecting employees' wellbeing as one of the desirable outcomes. The theoretical framework provided by Hackman and Oldham (1976; 1980) did not hypothesise wellbeing as one of the outcomes. Oldham (1996) argued that wellbeing is included in the JCM because job satisfaction is one aspect of wellbeing and mental health. However, this assumption is not compatible with recent wellbeing research in which wellbeing is looked at from a different perspective such as a stress-free context (e.g. Warr, 1987), absence of emotional exhaustion (e.g. Demorouti et al, 2001) or absence of strain (Karasek et al, 1979).
Moreover, the sources of wellbeing were seen by JCM as a matter of jobs having little variety and autonomy (i.e. content characteristics). This is not compatible with recent findings in which the contextual characteristics such as social support and work-life balance have become one of the important aspects in wellbeing. For example, Fletcher & Jones (1993) found that support accounted for more of the variance in men’s anxiety than demands and control together. Moreover, Johnson & Hall (1988) found indications that, for women, social support may be a more important predictor of cardiovascular disease relevance than work control. However, the relationship between situational characteristics and wellbeing is not a new concept in work design literature but has been neglected in the JCM.

To conclude, most of the studies that examined the JCM indicated that there are relationships between the job characteristics and the proposed work outcomes. The model showed stronger influence on motivation and satisfaction outcomes rather than for work performance and absenteeism. Various reasons were presented for such inconsistency. To improve performance or behavioural aspects, a wider perspective of the sources of work performance and job-related wellbeing, such as the job contextual factors, is needed.

2.5 JOB DESIGN AGENDA IN THE MODERN WORKPLACE

In the earlier sections, the current status of job design approaches and JCM in particular was presented. As previously stated, the JCM was developed principally from studies conducted during the 1970s of male shop floor workers in large scale industrial manufacturing plants. Despite the fact that the work context and the workforce itself have changed dramatically since that time, the JCM remains the
dominant influence in job design research and is yet to be superseded (Parker & Wall, 1998).

The discussion so far has suggested that there may be a need for a broader range of job characteristics that are suited to work in the 21st century. Empirical research has shown that Hackman and Oldham's core job characteristics are not the only aspects that influence modern jobs. There is a growing literature around the need for a wider range of characteristics (e.g. cognitive characteristics of work, the job contextual aspects etc. cf. Algera, 1998; Kuk et al, 1999; Parker et al, 2001). These suggestions merely demonstrate that a huge expansion on Hackman and Oldham's model is vitally required.

However, before attempting any updating trial, some assumptions or proposals should be taken into account. The first proposal is that a great deal can be learned by applying existing knowledge to new forms of work and testing them in field studies. Indeed, it is almost inconceivable that the core issues of autonomy, variety and feedback will not be relevant in the modern workplace. Thus, the assumption proposed here is to explore new constructs that may have emerged in the modern workplace as a result of the technological revolution that have affected the nature of work. This will allow the relevance of the JCM's dimensions in contemporary jobs to be examined, as well as exploring any new components that might emerge as a reaction to workplace development or workforce composition.

The second proposal is that the concept of job characteristics should be expanded to address job contextual factors rather than the narrow focus of job content aspects. In other words, recent workplace developments require 'job enrichment' rather than just 'task enrichment'. Previous models can be described as 'task design' models (e.g.
JCM, DC) in which the focus was towards enriching job content variables (e.g. autonomy, variety) without paying attention to enriching the context in which the tasks are delivered such as the social support and the rewards system. By ‘Job enrichment’ we mean that the enrichment programmes should address both the content and the context of the tasks. As explained earlier, workplace developments and workforce composition have emphasised the importance of contextual factors in improving employees’ performance and wellbeing. For example, demographical development of the workforce (e.g. more women, elderly workforce) requires more psychosocial variables such as social contact, work-home balance, secure jobs, recognition etc.

Although much research has identified many job content or context characteristics, the proposal here suggests that the critical job characteristics should be identified by the employees themselves and should not be influenced just by researcher opinion or practitioner expertise. In order to give a realistic and deeper explanation of employee needs in the current workplace, a strong evidence for the reasoning behind our choice for particular characteristics need to be provided. In other words, job design requires methodology in which employees are directly asked about what they like or dislike in their jobs to reflect their opinion without hiding behind previous findings or theoretical explanations to justify researchers’ choice. Therefore, this research calls for participative methodology rather than an authoritarian one. Finally, as was explained in chapter 1, a study design that includes both qualitative and quantitative methodologies will be highly relevant in this respect.

Another assumption in this study is that any job design modelling attempt should include the mechanisms that explain how work outcomes might occur. As presented
in Table 2.1, some theories assumed direct relationships between job features and work outcomes (e.g. hygiene-motivation theory) assuming simply that enriching the particular features may lead to the achievement of the desired outcomes whereas other theories (e.g. JCM) assumed that relationships are more sophisticated and might be mediated or moderated by other variables.

However, the meta analysis of the utility of the JCM’s mediators indicated that the only valid mechanisms that has a significant role in the model is the ‘knowledge’ state (Behson et al, 2000). Therefore, the assumption here is that this state may still be relevant in modern jobs which are, as we indicated earlier in Chapter 1, knowledge oriented. However, this state should probably be addressed on a cognitive level rather than motivational one as it is now with the JCM (Parker and Wall, 1998). Holman and Wall (2002) tested the job knowledge or job learning at a cognitive level (i.e. skill utilisation and skill efficacy) and reported that the learning has a mediation effect between job design and work outcomes. However, this issue will be discussed in detail in the fifth chapter.

The final assumption within this research is that job design theory should be more oriented to enhancing work performance and employee wellbeing. Job design should help in achieving satisfactory indices in work performance and employees’ wellbeing. However, it is expected that expanding job characteristics and identifying them from an employee’s perspective as well as proposing relevant mechanisms will provide the right formula that will positively influence the individual work performance and employees’ wellbeing.

After outlining the research agenda, the above proposals will be achieved via answering three main questions. These questions are:
- Do workers still consider the set of work characteristics identified by the JCM sufficient to capture the salient aspects of modern work?

- If the JCM dimensions are insufficient in the modern workplace, what do current employees consider to be the critical job characteristics that are important in determining modern work quality?

- If the first and second questions have been answered and the core job characteristics have been identified, what model can be formulated to achieve gains in behavioural outcomes (e.g. individual work performance) and psychological outcomes (e.g. job-related wellbeing).

These questions were the main goals for present research. In order to obtain satisfactory answers, three field studies were conducted, each of them was dedicated to answering one question.

The following chapters will be dedicated to presenting a detailed description of the three studies as well as a general discussion and concluding remarks.
Chapter

3 EXPLORING ALL THE POSSIBLE JOB FEATURES IN CONTEMPORARY JOBS: A QUALITATIVE STUDY

3.1 INTRODUCTION

The literature review presented in Chapter 2 indicated that there are many developments that have occurred in the workplace during the last 30 years while developments in job design theory remain below expectations. The discussion presented indicated that the picture of job characteristics today is clearly far more complex than those suggested in the Hackman and Oldham's (1976) core job characteristics model. The JCM was developed principally from studies that were conducted in the mid-20th century on male shop floor workers in large scale industrial manufacturing plants. Despite the fact that the work context and the work itself has changed dramatically since that time, JCM remains the dominant influence in job design research. Kuk et al (1999) in a large survey found that the JCM characteristics are inadequate to assess modern jobs such as those of dentists, social workers, nurses, receptionists, technicians etc. Most importantly, there is no empirical evidence that these five characteristics are the only important dimensions in contemporary jobs. Finally, some authors have suggested that there is a need for a wider range of characteristics such as the cognitive characteristics of work, emotional demands and physical context (Kuk et al, 1999, Parker and Wall, 1998, Parker and Turner, 2002, Warr, 2002a).
However, if there might be other dimensions for job enrichment than those suggested by the JCM, an important question is raised regarding the best methodology to determine these new components. Do we rely on literature review and what recent research or expert practitioners have suggested as important dimensions for job enrichment or do we let employees themselves decide what they think of the critical job characteristics that make jobs appealing and have the potential to raise their motivation, productivity and wellbeing?

In the first and second chapters it was argued that the first methodology (based on literature review) was implemented in many studies but did not solve many of the criticisms posed to the existing job characteristics (e.g. Jans & McMahon, 1989; Stone & Guetual, 1984; Liden et al, 2000; Dressel and Francis, 1987, Chaser, 1998). As Algera (1998) has indicated, the list is long, and many can be added to the list of total job characteristics. Selecting any of these is a subjective issue because there is no empirical evidence that supports which aspects are the most important. However, as explained in chapter one, most job design research developers (apart from hygiene-motivation theory) have identified the critical job characteristics either through researchers’ personal experience (e.g. task attributes, Turner and Lawrence, 1965) or listing what literature has indicated as important aspects for optimising work quality without taking into account employees’ opinion or attitudes (e.g. Warr, 2002a; Parker et al, 2001). This lack of empirical justification raises speculation about whether those characteristics are representing the critical aspects of jobs or are they just the researchers’ opinions.

Accordingly, in the current study the second methodology has been adopted in which employees have been allowed to decide what the critical job characteristics in...
their work are. This is a participative perspective in which employees have a say in identifying the critical job characteristics in contemporary jobs. However, the external expert role here will remain vital but as a facilitator to help employees in articulating their ideas and expressing their needs but not enforcing them. Hence, the study is adopting an inductive methodology in which the researcher stimulates participants by talking to them about their jobs, the aspects they like and dislike as well as the aspects that bring them motivation or satisfaction. Therefore, features would come up during the interview as statements and will be identified later by using thematic content analysis. This methodology is believed to provide a deeper analysis and better understanding of employees’ needs and expectations.

Accordingly, the present study aims to achieve three primary objectives:

- To establish whether the dimensions of the JCM are still applicable in today’s workplace.
- To identify all the possible job features in contemporary jobs.
- To discuss the implication of current findings for further investigation.

This chapter describes a qualitative investigation of the core job characteristics in the JCM as well as a trial to extract a list of the desirable job features of contemporary jobs. The methodology and the processes of extracting such job design features are described in detail in the following sections. In addition, some theoretical and practical implications will be discussed in the realm of the changes that have taken place in the work context.
3.2 METHODOLOGY

3.2.1 Participants

The purpose of this investigation is to find out all the possible job features in contemporary jobs. As such, it is important to have as a diverse a sample as possible of very different types of jobs. However, modern jobs such as the service sector, frontline jobs, and educated employees were in particular, taken into account.

Accordingly, qualitative data was collected from a sample of 75 employees. Participants were mainly identified randomly by the network sampling method. At the beginning, the researcher located potential participants by checking personal contacts and asking them to participate in the study. After interviewing them they were asked to recommend other people with full or part time jobs who may be interested in participating. Moreover, local organisations and small businesses were asked to nominate a sample of their employees who might be interested in taking part. In general, data was collected from employees working in various organisations and job types (e.g. technicians, customer service, IT analysts, lawyers, teachers, sales assistants, consultants, secretaries etc.).

Of the participants in the current study, 34 were male and 41 female aged between 18-75 years (M= 38.6 years, SD = 11.39). Work experience ranged from 2 – 360 months (M= 49.5 months, ≈ 4.5 years, SD = 68.45) with 88% (n=66) of the total sample holding full-time jobs. Moreover, 56% (n=42) of the participants held a university degree and 30% (n=23) were educated to A-level standard and 14% held a GCSE or less. Concerning occupational level, 58.7% (n=44) of the participants were employees, 34.7% (n=25) were middle management, 4% (n=5) were high management and 2.6% (n=2) were self-employed.
Distributing the sample over occupational sectors indicated that many of the sectors have been included with the biggest portion representing the service sector. Sales/marketing totalled 6.7% (n=5), service/customer support 28% (n=21). Professionals 24% (n=18), IT based work, 6.7% (n=5), technical 10.7% (n=8), secretarial/administrative 6.7% (n=5), academic 5.3% (n=4), and others 12% (n=9). Finally, in terms of economic category per year 53.3% (n=40) of the sample earn from £21-40 thousand per year, 24% (n=18) earn from £11-20 thousands, and the rest earned £40 thousand or more.

However, a close look at the above distributions indicates that the participants’ work involves very different skills. The distribution follows the contemporary workplace context in which one can find a higher proportion of educated employees working in the service sector with adequate yearly income (cf. European commission, 2004, Employment in Europe report). This distribution is beneficial for the study’s purpose as the intention is to get away from the limitation of the JCM by not restricting the sample to traditional mechanics jobs. This would enable the researcher to see if there were any common job characteristics across very different types of work and in modern jobs in particular.

3.2.2 Materials and procedure

Initial preliminary interviews were conducted. The intention was to develop the study materials further. In this stage, five open-ended interviews were carried out (time range from 45-90 minutes) to talk about job quality in general and to determine the interview’s schedule outlines, the target sample, and the relevant information that should be collected.
From the preliminary interviews and literature review (e.g. Hackman & Oldham, 1975; 1976; 1980, Herzberg, 1959, Parker et al, 2001, Warr, 2002), the final interview schedule (see appendix 1) contained 16 questions all participants were asked. The participant and researcher were free to investigate further any point of interest and the interviewees were free to discuss any issue related to the questions.

In general, the interview schedule covered three main areas. Firstly, the warm up session in which participants were asked general questions concerning their demographic information (e.g. age, occupational level, occupation sector etc.). This was followed by discussion of their duties and tasks. Secondly, opened-ended questions about their perception of the positive and negative features in their jobs were asked (e.g. what aspects do you like/dislike about your job). Lastly, the interviewer asked the participants about the aspects in their jobs that make them feel motivated, satisfied, rewarded etc. and why? Interviews were tape recorded with permission and confidentiality was assured. The average interview time was 45 minutes.

In order to attain a wide range of responses, the interview schedule was developed into an open questionnaire. The same sequences of the interview’s open-ended questions were used. In total, 50 subjects completed the open questionnaire and 25 subjects were interviewed.

Finally, after analysing all the 25 interviews and open questionnaires, two additional interviews were conducted and 5 open questionnaires were distributed to employees working in various occupations. The aim was to ensure that no further information could be attained. As the researcher is already aware of the statements that resemble the desirable job features it was thought that it would be easy to
distinguish any new statements that were not mentioned before. The additional information revealed no solid themes or new statements. Therefore, the researcher was satisfied that all possible job features were covered and decided to stop data collection at the previous point (i.e. 25 interviews and 50 open questionnaires).

In conclusion, data were collected from 75 subjects either by interviews or open questionnaires that covered three aspects of each participant's job:

- Their perceptions of the positive and negative features in their jobs.
- The aspects they consider "motivators".
- The aspects that make them feel committed, satisfied, and rewarded.

3.3 Data analysis

The current study followed an exploratory framework and thus looked for key themes that may emerge across the sample. As this was an inductive analysis, the patterns themes and categories were expected to emerge from the data rather than being imposed prior to data collection and analyses.

Herzberg et al. (1959) indicated that in content analyses qualitative material is broken down by the assignment of an individual's ideas or thoughts into categories. These categories can be made objective enough, by the development of concrete criteria, so that a high degree of reliability in their use can be obtained. Therefore, the goal of content analysis here was to break down the conversations, thoughts or ideas into short statements describing either a positive or negative perception of a particular
work feature to make reliable and valid inferences about what makes employees like or dislike their work.

As a first step, the 25 interviews were transcribed word by word using a transcribing machine. The demographic information was summarised, followed by questions and their corresponding answers. Open questionnaires were transcribed as the questionnaire was in fact another version of the interview schedule and the same sequence of questions were used. In total there were 75 scripts, each of which contained a summary of the demographic information and at least 16 questions followed by their corresponding answers.

After transcribing, the first step for the intensive analysis was reading all the scripts a number of times and taking down notes of the conversation topics, vocabulary, meanings that seemed interesting to identify the data relevant to the study’s aims and objectives. The main aim in this step was to mark down any quotes that reflect relevant job features. Some of these quotes are presented in the next section.

3.3 RESULTS

To provide a clear presentation, the result section is divided into two sections. In the first section some example quotes are presented to give an idea of the main themes that were emphasised by the participants. The aim of this section is to give an idea of the data collected and to examine the relevance of the JCM’s five characteristics in current workplace. In the second section, we tried to structure and refine all the
3.3.1 Testing the relevance of JCM's dimensions in contemporary jobs

The purpose of this section is to provide selected quotes indicated by the present participants to establish whether the JCM's dimensions are still relevant in contemporary jobs. Content analysis revealed emerging themes that jobholders perceived as important features in their jobs. In general, there were characteristics that were important for most of the participants despite their different jobs. Some of these characteristics are those promoted by JCM and some of them new components. These are presented in Table 3.1 below:

Table 3.1: emerging themes with example quotes that jobholders perceive as important features in their jobs

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Example quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Autonomy</strong> (as JCM)</td>
<td>The degree to which the job provides substantial freedom, independence and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out.</td>
</tr>
<tr>
<td></td>
<td>'I like my job because I can manage my self... I decide when I start and when I stop... a lot of freedom indeed' 36, male, electronic technician.</td>
</tr>
<tr>
<td></td>
<td>'I left my previous job because I didn't have much freedom... work, breaks... holidays... everything was structured... I hated it' 62, male, court attendant.</td>
</tr>
<tr>
<td></td>
<td>'The autonomy of my job keeps me motivated' 31, female.</td>
</tr>
<tr>
<td></td>
<td>I would like to change my job to a self employed one, to work for my self' 27, male, staff training manager.</td>
</tr>
<tr>
<td></td>
<td>'I need to be able to be independent... and just get on with things yourself really. I need to have the control to be able to do that' 36, female, travel agent.</td>
</tr>
</tbody>
</table>
### Variety (as JCM)

The degree to which a job requires a variety of different activities so the worker can use a number of different skills and talents.

- 'I like my job because every day there is something different and there are new things to do' 22, female, sales assistant.
- 'I meet different investigators and different people who keep me busy all day... it's a great job... unpredictable' 30, female, behavioural investigator advisor.
- 'My work is repetitive and boring and nothing interesting' 34, male, mail sorting assistant.
- 'I don’t just want to be a teacher full stop. I like doing a bit of everything' 35, female, teacher.

### Task identity (as JCM)

The degree to which the job requires completion of a whole and identifiable piece of work.

- 'I feel satisfied in my job when I have done something completely from the beginning to the end' 62, female, administrative secretary.
- 'I feel satisfied when I come to work and everything is messy. Then after a while everything is clean' 41, female, food service assistant.
- 'I will be more satisfied and motivated if I got the opportunity to design, research and deliver new cases' 37, male, legal executive.
- 'I got the freedom to start any project and carry it over to the end' 36, male, electronic technician.
- 'In my previous job I hate that, as a team, everyone should fix part of the machine' 29, male, car body repairer.

### Task significance (as JCM)

The degree to which the job has a substantial impact on the lives or work of other people.

- 'I like my job because I can provide the students with safety... you feel that you provide something to them especially when some parents thank me for taking care of their sons and daughters' 62, male, court attendant.
- 'I feel satisfied when others perceive me as a knowledgeable person, not in the department, but in the whole company' 33, female, human resources manager.
- 'I like to have extra responsibility at my work, which I think will motivate me more' 22, female, sales assistant.
- 'I have a managerial level but without responsibility on any one' 50, male, analyses programmer.
- 'I direct all the service in my work... I have a budget and decide what to do with it... I have a team and I distribute the work to them... I give advice and decide who should come to me...' 36, female, occupational health manager.
### Feedback (as JCM)

The degree to which carrying out work activities required by the job results in the individual’s receiving direct and clear information about the effectiveness of his or her performance.

- ‘I feel satisfied when I receive e-mails from people I served saying that I have done a good job’ 62, female, administrative secretary.
- ‘I feel rewarded when my manager likes my report and reviews it and finds some objective and helps me to be right... sometimes I receive some relevant comments’ 30, female, behaviour investigator advisor.
- I have other team members working in other parts of the company... it’s very frustrating that you don’t receive feedback about what they are doing in a daily basis’. 33, female, human resources manager.

### Financial benefits

The degree to which the job provides fair compensation and chances to earn extra money for extra responsibilities.

- ‘I would like to have extra money for extra responsibilities’ 36, male, electronic technician.
- ‘I like extra money in my work which will motivate me more’ 32, male, stock control worker.
- ‘I feel satisfied when I receive the money at the end’ 62, female, administrative secretary.
- ‘If I will change my job it should be for a lot of money’ 50, male, analyses programmer.
- ‘In my previous job I wasn’t happy because I didn’t get as much salary as I expected’ 57, female, building maintenance manager.

### Opportunity for development

The degree to which the job provides training chances to develop new skills or existing talents.

- ‘In big stores you can learn from different areas in the job’ 22, female, sales assistant.
- ‘I enjoy my job because I can learn new things about other cultures’ 27, male, society coordinator.
- ‘I enjoy the training aspect in my job’ 25, female.
- ‘I feel satisfied when I feel that I learned something new... and getting personal development’ 35, female, business manager.
- ‘I would like to have a job which has more analysis of training, to understand more about the training we deliver’, 27, male, staff training manager.
- ‘I like working in the university here because there is opportunity for education and research’ 37, male IT system administrator.
- ‘I need to finish my study before starting reports and investigations to improve my ground and become more knowledgeable’ 36, female, occupational health manager.
### Physical environment

The impact of the surrounding work environment on employees’ health and safety.

- ‘I hate the noise in my workplace’ 32, female.
- ‘My job is unhealthy, you can’t breathe well in the workplace’ 34, male, mail sorting assistant.
- ‘I used to work in a factory but I resigned as soon as I got another chance, because the workplace was dark’ 32, male, electronic technician.
- ‘the physical environment... that's important for the staff...one that's homely but also one that's functional... and just generally having the whole environment conducive to safety... it has a huge impact on the staff that work there and people’s mental health’ 36, female, travel agent.

### Challenge

The extent to which the job provides stimulating tasks and goals to be achieved despite being told it is unachievable/ too difficult.

- ‘I like that I have a target to achieve’ 35, female, business manager.
- ‘I feel satisfied and motivated when I get a challenging task that requires designing and building equipment’ 36, male, electronic technician.
- ‘My satisfaction came from achieving new things and my job isn’t providing me with such a feeling any more’ 57, female, building maintenance manager.
- ‘I enjoyed my previous job because it was unpredictable... you don’t know what will happen every day... sometimes they ask you to solve a problem within a software or a programme... it’s a very stimulating job’ 37, IT system administrator.
- ‘If I have the opportunity I will changed my job to find something more creative’ 47, male, analyst programmer.
- ‘There is no challenge in my current role... you do the same work all day...there is no fun’ 32, male, stock control.

### Recognition

The extent to which an employee feels valued and appreciated for their experience, skills and knowledge.

- ‘I liked the reward scheme for the best person who helped the company... I personally received it last year’ 57, female, building maintenance manager.
- ‘I feel satisfied when the investigator says that my report helped in the right direction’ 30, female, behavioural investigator advisor.
- ‘If the managers give me a trainee I feel trusted and that I am doing well in the job’ 34, male, mail sorting worker.
- ‘The thought I am working in a big international company... keeps me working with the company... I feel proud and highly regarded’ 42, female, secretary.
### Supervisor/s support

The extent to which an employee receives encouragement, respect and support for advancement from his/her supervisor/manager.

- 'I like the managers in my work because they know how to run the business and they joke with us all the time' 34, male, mail sorting worker.
- 'My managers are very kind, they treat you gently, they trust you and believe you' 32, male, stock control worker.
- 'I hate my job because it's difficult to deal with the section manager, he is rude... not friendly at all' 25, female.
- 'The most rewarding aspect in my job is my relationships with management and with my customers' 37, female, business manager.

### Social contact

The extent to which the job enables social contact with work colleagues.

- 'I do a lot of chatting with other people... I see and deal with many nationalities in the job... it's a really good place to make good friendships' 29, male, society co-ordinator.
- 'I am a member of a team... you can interact with your colleagues during the day... I really enjoy the communication quality between our team members' 47, male, analyser programmer.
- 'I meet a lot of people with different ages... I enjoy the transition of people in front of me... the reason that I am motivated is because I work with people who you talk to every day' 41, female, food service assistant.

### Work-life balance

The degree to which the job is flexible to reduce the job impact on home-family life.

- 'I don't like my evening shifts, they are not convenient to my family situation' 32, male.
- 'I loved the job that I left... but I had to drive for an hour every day and it was stressful driving and that was enough to leave... now I work a mile from where I live and it's a much better way of life really... now I can do other stuff that makes me appreciate my job more because my home life is better and that makes me more productive because I haven't sat in the car for an hour.' 35, female, travel agent.
- 'I have two children at home. My job involves a lot of national travelling... I want to be able to spend quality time with my children... I don't think that I spend enough time with them' 33, female, Administrative officer.

### Supportive colleagues

The extent to which the job climate enables an employee to receive support from his/her colleagues e.g. back each other up when necessary

- 'Working with my colleagues brings me motivation and satisfaction and reduces the work pressure' 32, male, stock control worker.
- 'I feel lonely in my current job and isolated... yes I have a nice office now but I work alone all day... I really miss my colleagues that I used to work with before I got promoted' 30, female, behaviour investigator advisor.
- 'We work as a family... if I have got something urgent and I need to be off for one or two hours I can ask one of my colleagues to cover for me... I do the same to them as well... the management do not object as long as the job is not affected' 42, female, secretary.
The above table does not represent all the themes that emerged as there were also features that were not found across the entire sample but were important within a specific working context such as the role ambiguity (i.e. the extent to which an individual has sufficient role related information to perform effectively). Although not relevant across all types of jobs, it was felt that these features are also important and cannot be discounted. Accordingly, the next section attempts to collect all the possible job features that can be extracted from the data regardless of whether they were mentioned across the entire sample or not.

3.3.2 Extracting a list of all the possible job features

To obtain a valid and reliable list of all the possible job features, the qualitative data collected in this study went through a number of processes. These processes are described in detail in the next sections.

3.3.2.1 Quotes coding

All the quotes were initially coded into two categories, the first one was statements resembling positive job features (i.e. features that they like in their jobs) and the second one was statements resembling negative job features (i.e. features that they dislike in their jobs).

The next step was transcribing the coded statement into a special data analysis sheet developed by the researcher. At the top, this sheet contained a summary of the interviewee’s demographic information (age, gender, educational level, occupation
sector, employment type, occupational level and economic category) followed by two columns one for the positive job features and one for the negative ones. In this way, the researcher transformed all scripts into data analysis sheets (75 sheets) and attained homogenised data that contained highly relevant statements about the desirable job features categorised as positive job features or negative ones.

3.3.2.2 Coding verification

The second step of the data analysis was to verify the coding of statements extracted in the previous step to ensure that researchers’ subjectivity had not affected results especially in coding statements as positive or negative job features. Therefore, five data analyses sheets were chosen randomly from the sheets pool and given, with their corresponding text, (interview transcription or open questionnaire) to two qualified and chartered occupational psychologists who were familiar with the research aims and objectives. The mission was to read the scripts and the correspondent analysis sheets and to decide if there were any misinterpretations or incorrect judgments. Furthermore, the assessors were asked to search for any further themes or features that could be extracted from the scripts. The results of verification confirmed what the researcher had found and no overlapping, misinterpretation, incorrect judgments, or further features were reported.

3.3.2.3 Statements’ reduction

Having 75 data analysis sheets each of which contained 10-20 statements were considered a huge number and needed reduction, especially since there was a great deal of redundancy and overlapping between statements and across cases. Therefore,
the researcher decided to reduce the statements pool to a minimum. All the statements were entered into an Excel worksheet and data reduction was conducted. The first step was to eliminate all the repeated or overlapped statements. The next step was reversing each negative statement to the equivalent positive form. This step helped in eliminating the redundancy between the job statements. Besides, it is the aim of the current study to produce a list of positive job features not negative ones. This procedure enabled the researchers to reduce the data into 77 statements describing various positive job features.

3.3.2.4 Job features formulation

The final step was to determine the concept behind each statement in the list using the job enrichment terminology. Table 3.2 contains a list of all the possible job features perceived by employees working in contemporary jobs.

Table 3.2: a list of all the possible job features in contemporary jobs

<table>
<thead>
<tr>
<th>Job Features</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A job that is varied (requires doing different things)</td>
<td>Variation in job content</td>
</tr>
<tr>
<td>2. A job that makes full use of employee skills</td>
<td>Variation in skill utilisation</td>
</tr>
<tr>
<td>3. A job that gives the opportunity to work outdoors</td>
<td>Variation in job location</td>
</tr>
<tr>
<td>4. A job that requires using a number of complex or high-level skills</td>
<td>Multi-skill tasks</td>
</tr>
<tr>
<td>5. A Job that offers good payment (per hour/a good salary)</td>
<td>Amount of pay</td>
</tr>
<tr>
<td>6. A job that gives extra money for additional responsibilities or overtime</td>
<td>Flexible financial resources</td>
</tr>
<tr>
<td>7. A job that has benefits: paid sick leave, holidays, pension etc.</td>
<td>Benefits package</td>
</tr>
<tr>
<td>8. A job that gives fair pay for employee contribution to the organisation</td>
<td>Payment fairness</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>
| 9. | A job in which employees have good relationships with other colleagues  
   9. | Good relationships with co-workers  
| 10. | A job that has good communication between members  
   10. | Social interaction-quality  
| 11. | A job that has some social events in the workplace (e.g. playing bowling, snooker)  
   11. | Social interaction- quantity  
| 12. | A job that provides employees with the opportunity to interact with different people  
   12. | Social interaction- intensity  
| 13. | A job where employee co-workers are co-operative (not competitive)  
   13. | Less competitive co-workers  
| 14. | A job where if a problem exists at work, one can discuss it with his/her colleagues  
   14. | Supportive co-workers  
| 15. | A job in which managers give employees information about their performance  
   15. | Information about the consequences of job behaviour  
| 16. | A job in which the work itself provides clues about whether or not employees are performing well  
   16. | Task feedback  
| 17. | A job in which as a team employees know their progress, e.g. achieving a target or not  
   17. | Team feedback  
| 18. | A job in which employee co-workers let him/her know how well he/she doing that job  
   18. | External feedback  
| 19. | A job in which tasks take a short time to do  
   19. | Psychological job demand  
| 20. | A job that has little responsibility and no stress  
   20. | Quantitative workload  
| 21. | A job without tight deadlines in tasks  
   21. | Work pressure  
| 22. | A job in which employees are familiar with all job tasks  
   22. | High role clarity  
| 23. | A job in which employees have general directions for work duties  
   23. | Role ambiguity  
| 24. | A job that does not have many disruptions during workday  
   24. | Attention demand  
| 25. | A job that does not require carrying the work over to home life  
   25. | Work-home conflict  
| 26. | A job that does not require doing things that ought to be done in a different way  
   26. | Role conflict  
| 27. | A job that is convenient to family situation  
   27. | Work-home conflict  
| 28. | A job that does not require concentration all the time  
   28. | Attention demand  
| 29. | A job that does not require working at speed  
   29. | Psychological demand  
| 30. | A job that does not require much physical effort  
   30. | Physical job demands  
| 31. | A job that does not have very hectic workdays  
   31. | Psychological demands  
| 32. | A job that has convenient shift-times  
   32. | Convenient shift time  
| 33. | A job that has undefined work hours  
   33. | Flexibility of work hours  
| 34. | A job in which employees do not receive incompatible requests from two or more people  
   34. | Inter sender conflict absence  
| 35. | A job that is teamwork-based  
   35. | Teamwork  
| 36. | A job in which the tasks match employees abilities  
   36. | Required skills  
| 37. | A job that is related to employee qualifications  
   37. | Required skills  

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| 38. A job that has a quiet workplace | Low workplace noise |
| 39. A job in which air quality is important | Adequate ventilation |
| 40. A job in which the workplace temperature is appropriate | Air conditioned workplace |
| 41. A job in which high safety procedures are important | Safe environment |
| 42. A job in which the managers encourage staff to make suggestions | Supportive management for decisions making |
| 43. A job in which managers are NOT aggressive or inconsiderate | Non-hostile managers |
| 44. A job in which the managers care about employees | Concerned supervisor |
| 45. A job in which the managers are good organisers and know how to run the business | Effective leadership |
| 46. A job in which employees are not watched all the time by managers | Absence of close supervision |
| 47. A job in which employees finish a piece of work that adds value to the business | Significant role |
| 48. A job in which employees work alone on his/her own initiative without direct supervision | Decision latitude |
| 49. A job in which employees start the product and carry it over to the end | Complete job |
| 50. A job in which employees make decisions and implement them without consulting others | Discretion |
| 51. A job in which employees have personal space that provides them with adequate privacy | Adequate privacy |
| 52. A job that is not simple and repetitive | Non-repetitive work |
| 53. A job in which, as a team, employees decide how the work should be done | Team autonomy |
| 54. A job in which employees have the freedom to do work in the way he/she wants | Self-determination |
| 55. A job in which the employee is the only person responsible for the work he/she produce | Task identity |
| 56. A job in which the work employees produce affects someone else | Task interdependence |
| 57. A job that has high social status | Job significance |
| 58. A job that expects high level of planning and development of strategies | Task significance |
| 59. A job in which employees train and coach other team members | Responsibility |
| 60. A job in which employees gives advice to others | Seniority |
| 61. A job in which employees have the opportunity to grow through his/her work | Development chances |
| 62. A job that has a stable future | Job security |
| 63. A job that keeps employees updated in his/her field | Training opportunity |
| 64. A job in which employees learns new skills and develops abilities | Learning new skills |
65. A job in which employees receive training that helps him/her to do work | Training adequacy
66. A job that has many educational opportunities (e.g. workshops, conferences, journal subscriptions etc.) | Development chances
67. A job that requires thinking quickly | Utilisation of valued abilities
68. A job that requires tackling problems and finding solutions | Problem solving demands
69. A job that requires thinking and stimulating mind | Creative tasks
70. A job that requires producing original ideas | Originality
71. A job that does not require documenting all employee actions | Creativity freedom
72. A job that contains minimum paper and administrative work | Less administrative work
73. A job in which all the team have goals to achieve | Challenging team tasks
74. A job in which employee receives high recognition for the work he/she produces | Recognised tasks
75. A job in which employees receive professional respect | Self-respect from the job
76. A job in which employee is highly appreciated by the people he/she has served | Rewarding schemas
77. A job in which employee colleagues recognise his/her contribution to the organisation | Appreciation complements

Table (3.2) above represents a 77-item list with the correspondent interpretation, using job enrichment terminology. These features were not mentioned by each individual participant, or relevant across all types of jobs but each of them was indicated by at least one participant.

3.4 DISCUSSION

The purpose of this investigation was to establish the relevance of Hackman and Oldham’s core job characteristics at the beginning of the 21st century. Another aim was to extract all the possible job features in contemporary jobs from the employee’s perspective. An analysis of the interview transcripts revealed that the JCM’s five characteristics are still relevant today because they were frequently mentioned during
interviews. However, additional characteristics were found to be important. A general discussion for these new characteristics will be presented in turn.

As mentioned in chapter 2, existing job design knowledge will remain important in the current work context. The characteristics of autonomy, task significance, task identity, feedback, and variety remain relevant in contemporary jobs. For instance, feedback was addressed frequently by the participants. However, Hackman and Oldham’s definition of feedback comes from the job itself. This investigation found that feedback from external agents is also important:

'I feel satisfied when I receive e-mails from people I served saying that I have done a good job' 62, female, administrative secretary.

This is supported by empirical research in which feedback from external agents has been shown to be important (Hackman and Oldham, 1980).

Other characteristics important to contemporary jobs are the support from colleagues and from supervisors. These were possibly the strongest characteristics to be identified by participants. These characteristics were found across the sample. Social contact was important and working with other workers was perceived a cause of motivation:

'... the reason that I am motivated is because I work with people who you can talk to every day' 41, female, food service assistant.

Social support was necessary whether the individual worked as part of a team or not. It came in the form of sharing the events of the day with colleagues both formally (in briefings, through supervision) and informally (coffee breaks, lunch hour, off work events). Furthermore, supervisors and colleagues’ attitudes were also found to be
important. Caring managers who are considerate and give opportunities for decision making participation as well as supportive co-workers whom they can socialise with and ask for help when they need it, were perceived as very important job aspects. The importance of support from colleagues and supervisors is being more widely recognised. For example, a third dimension of the support has been added to the expanded demand-control model of strain (Karasek and Theorell, 1990).

Additionally, it seems that there is a huge emphasis on cognitive enrichment in the form of asking for challenging and stimulating tasks. These results are compatible with previous findings that indicated that cognitive enrichment is important in the modern workplace (e.g. Gottfredson, 1997; Parker et al, 2001; Warr, 2002; Kuk et al, 1999; Parker and Turner, 2002; Leach et al, 2003). This result may be an outcome of the growth in service and knowledge work. Jobs in these contexts (and indeed in manufacturing) are becoming more knowledge-oriented (Parker et al, 2001). Frankell et al (1999) noted that problem solving demand is increasing in modern work context because of a greater product variety, the requirement for employees to carry out multiple roles, and more frequent policy and procedural changes.

Another characteristic that was addressed by the current sample and neglected by JCM (and other job design theories) is the organisational rewards (financial rewards and recognition). Both characteristics were addressed across the sample. Jobholders wanted to receive adequate salary in comparison with the efforts provided and were perceived as cause of dissatisfaction:

'In my previous job I wasn't happy because I didn't get as much salary as I expected' 57, female, building maintenance manager.
Similarly, jobholders wanted to be recognised for their knowledge, skills and experience within their profession. Recognition could come from within the organisation or from outside. This may overlap to some extent with Hackman and Oldham’s ‘task significance’.

Work-home conflict and home-work conflict was important for job satisfaction. Although not an actual characteristic of the job itself but a factor on the job context (difficulties in juggling the demands of work and family roles), the demand inherent in the work had a huge impact on an employee’s private life, which impacted on work and caused a negative effect. Flexibility of the work is a key component here. It was important that work was flexible enough to allow things that were important to the wellbeing of the individuals to take place such as shift pattern, nursery facilities etc. In the case of the travel agent, her previous job was so detrimental to her home life that she left her job for something that would give her more quality time in her social life. This brings to the fore the fact that a person’s satisfaction at work may not be purely down to the job itself but due to the impact that the job has on their outside life. Thus, work and home life are inextricably linked and have an impact on one another. The JCM and other job design theories do not account for this which is a problem that characterises job design theory in general.

Physical environment was also important when the environment had a direct impact on the mental health or safety. For example, a safe environment was fundamental to the mail sorting assistant because of its impact on the safety of the workers who worked there in a dusty and closed environment that affects their ability to breathe well. It was also important for the travel agent because of its impact on the mental health of the employees:
... it has a huge impact on the staff that work there and people’s mental health’ 36, female, travel agent.

This again raises the point that characteristics such as this are context specific but still have fundamental considerations. Hackman and Oldhams’ JCM is job content specific and does not account for such contextual characteristics. Empirical research has shown that improved design of office conditions enhanced both employee satisfaction and production (Dressell and Francis, 1987). The physical environment has been relatively overlooked in job design theory.

Teamwork also appeared to be important, although it was not mentioned by all participants. It was considered important but only in environments where the work was organised within a team. Interestingly, team work was found to have both positive and negative effects on employees. Teamwork with very high interdependence or heterogeneous team members caused stress:

'With group work some times the work can slow down’ 32, male, Sale assistant

"In teamwork you need to compromise and nobody is happy at the end” 37, male IT system administrator

"Some personalities are difficult to work with and it’s difficult to reach a decision especially with big group” 35, female, Human resources manager.

Conversely, other people expressed that they liked teamwork because it involves meeting many people. This came out very strongly from the interview with the occupational health manager in which she expressed her dissatisfaction because she is part of a virtual team and can not interact with them:

'I have a team but all of them in other branches and we don’t contact on daily basis... ’ 36, female, health occupational manager.
Other people indicated clearly that they like the teamwork because it involves social interaction:

'I like the off site meetings with my team to go to a pub to have a drink or a chat' 29, male, car body repairer.

'In teamwork people can help each other... and you can work with different people’ 47, male, analyser programmer.

This is a critical consideration and brings to the fore the actual importance of teamwork as a job characteristic. Previous research was controversial in determining the degree of importance of teamwork. Socio-technical theory has emphasised the importance of teamwork for both employees’ productivity and mental health (Cherns, 1976). However, research by Spreg et al (2000) found that teamwork was important for specific contexts in which the work process required teamwork. The current study found that employees whose work required little interdependence but was structured as a team effort expressed their dissatisfaction. In this context, people thought that they could do the job better alone especially when they feel that they have to take on the responsibilities and mistakes of the team as a whole (e.g. ‘With group work some times the work can slow down’). Thus, a key point to satisfaction and productivity is a fit between the type of the production process and the chosen form of work design (Parker and Wall, 1998).

To summarise, the results obtained in this study indicate that workers still consider the JCM dimensions as relevant aspects of their jobs, but also mention other aspects. Comparing the present results with the JCM characteristics revealed that the JCM’s characteristics are still valid. The characteristics of variety, task significance, task identity, autonomy, and feedback are still relevant as they can be found scattered among the job features list. However, other characteristics not addressed by the JCM
were found to be crucial to employees' lives. Most of these features are related to the job context factors (e.g. payment, social contact, friendly co-workers, supervisors' practices, work structure, recognition) and to the cognitive characteristics of the job such as training opportunities, challenging tasks, chances for tackling problems and finding solutions, and stimulating tasks.

However, it is important to mention that the characteristics presented in Table 3.1 have been elected from selected quotations. These characteristics were neither found across the sample nor do they represent the critical job characteristics in contemporary jobs. Therefore, the second part of the content analysis was concerned with producing a comprehensive list by identifying all the possible job features that current participants addressed as important aspects in their jobs. Thus, Table 3.2 presented 77 job features that were perceived as job features necessary in contemporary jobs and influence employees' comfort, commitment, motivation to work harder, satisfaction, feeling rewarded and creates a state of wellbeing. The interpretation of these features indicates that they represent a wide range of job enrichment characteristics. However, it is difficult to determine at this early stage whether all these features are critical or not.

Finally, these results provided an indication of the job features that emerged in the modern workplace as a reaction to the technological revolution or modern work systems. It seems that employees nowadays prefer jobs that provide them with a challenge, stimulation, originality, opportunities to be creative, training adequacy, opportunity for developing skills, good payment, good working conditions and jobs that do not intervene in their personal life. These results are compatible with empirical research conducted in high technology workplaces. For example, Jackson et al (1993)
indicated the cognitive demand (e.g. problem solving, production responsibility, uncertainty) are essential characteristics required by workers in high manufacturing systems. Furthermore, Gottfredson (1997) noted that people working in complex occupations prefer jobs to be unstructured, entail much self direction, general responsibility, variety and change, attention to detail, good communication quality and supportive management.

However, it should be noted that not all the extracted features are completely new to job design as some of them were mentioned partly or briefly in job design literature either as moderator (e.g. growth need strength in JCM) or contingent variables. In the current study, it seems that these features are strong enough to be listed as part of the job characteristics list. Employees nowadays expect jobs to be proactive and provide them with stimulation rather being passive. This issue will be discussed in detail in Chapter 4.

3.5 Strengths and limitations

The current results represent employees’ opinions of the all the possible job features in contemporary jobs and were a participative effort between employees and the researcher. The results were not influenced by the researcher’s background or personal experience. These findings contribute positively to one of the existing job design theories’ criticisms mentioned earlier in which none of them addressed employees’ opinions about what can be considered as important job features. The results emphasised some workplace features that were overlooked by the JCM and other job design approaches (e.g. physical environment, work life balance).
However, it is important to mention that the job features list presented in Table 3.2 have been elected from a relatively small sample of 75 participants. A great deal of research would be required to investigate these further. Also, it is not clear at such early stage whether these are distinct features in their own right or whether some may overlap or merge together (e.g. recognition and task significance features, social support and social contact). Further investigation would be required (e.g. factor analysis) to test whether these characteristics are, first important job features in all contemporary jobs and second if they are distinct empirical constructs or not.

3.6 CONCLUSION AND FURTHER DIRECTIONS

In answer to the original question posed by this investigation it can be concluded that Hackman and Oldham’s job characteristics are still relevant today. However, the diversity in today’s working practices and the workforce itself means that there are many more characteristics that need to be considered. It is not surprising that the huge diversity in working practices today in comparison with the 20th century has led to a greater diversity of characteristics. Neither it is surprising that there are specific characteristics that are unique to particular context and individuals. This is not to say the JCM should be completely disregarded but should attempt to understand the range of characteristics to be considered and identify which characteristics are of relevance to contemporary jobs.

However, identifying the critical job features among the present list is rather difficult. The current study was designed for exploratory purposes and deciding the importance degree of each feature is difficult to achieve from the current data as some
features were only indicated by one or two subjects. Therefore, these features need to be differentiated based on their degree of importance using a larger size sample and a variety of jobs. Furthermore, it is difficult to establish whether these features are distinct in their own right or whether they might merge if further investigation were to be carried out. As an example, the desirable feature ‘A job that has high level of planning and development of strategies’ that represent the feature of ‘responsibility’ can be categorised under the broader characteristic ‘challenge’ characteristic. Therefore, looking deeply at the concept behind these features indicates that they can be grouped into wider categories if further investigation were to be carried out.

Finally, this study has adopted a methodology that employs qualitative and quantitative techniques. Therefore, these qualitative data need to be confirmed quantitatively to establish whether they are important features in all jobs at all levels. This multi-methodologies perspective is supported by a recent move in social science towards multi-method approaches that tend to reject the single analytical paradigms and move towards multi-perspectives. Creswell (1994) noted that in social sciences, a preferable way to apply the multi-method perspective is to have a stage of qualitative study as a precursor for a quantitative one. Therefore, the next study will attempt to confirm the degree of importance of each feature using quantitative techniques and then categorise them into broader dimensions using statistical methods (i.e. factor analysis). This study will be described in detail in the next chapter.
4 IDENTIFYING THE CRITICAL JOB CHARACTERISTICS: A CONFIRMATORY STUDY

4.1 INTRODUCTION

As presented in Chapter 3, qualitative data collected from 75 employees followed by content analysis has resulted in 77 job features that seem to be important in contemporary jobs. The job features presented in Table 3.2 have been selected from various job types and occupational sectors that give extra evidence of their relevance in the current workplace. Participants mentioned some ‘new’ job aspects that were not addressed by job design theories and the Job Characteristics Model in particular. Most of these features are related to the job context factors (e.g. payment, social contact, friendly co-workers, supervisors’ practices, work structure, recognition) and to the cognitive characteristics of the job such as training opportunities, challenging tasks, chances for tackling problems and finding solutions. However, it is not clear at such an early stage whether these are distinct features in their own right or whether some may overlap or merge. Therefore, the current study will address the second step of present research in which the researcher will try to bring structure to these features using empirical techniques. First, we will try to determine whether these features are important aspects of all contemporary jobs and second, if they are distinct constructs or they can be categorised into broader dimensions.
Concerning the first point (the degree of importance), there are two perspectives in determining the degree of importance of each of the job features listed in Table 3.2. The first option is to distinguish their 'degree of importance' from the employee’s point of view. That is, by asking employees directly about the features that they consider the most important aspects within their jobs. The second perspective is distinguishing their 'degrees of importance' based on the amount that they contribute to enhance work performance, health, commitment, wellbeing etc. That is, by exploring the associations between these features and the work outcomes (e.g. regression analysis). The latter technique would help in determining the degree of importance based on the contribution of each feature to the total explained variance in work outcomes such as employee’s performance and wellbeing. Although both perspectives are relevant, we adopted the first perspective (i.e. the employee’s opinions) as this issue was determined earlier in which we decided to identify the critical job characteristics from the employee perspective. As we explained in the first chapter, none of the job design developers addressed the employee’s opinions when they identified the critical job characteristics and relied on literature review and their personal judgment or in the amount they contribute to the explained variance. Therefore, this study is trying to avoid such criticism.

Accordingly, this study has two aims. The first aim is to distinguish the important job features from the less important ones from the employee’s perspective. This aim will be achieved by converting the 77-item list obtained in the first study to a checklist with a 5-point Likert scale ranging from 'very important' to 'not important at all'. The checklist will be distributed to a large sample of employees working in various organisations and job types, asking them to determine the degree of importance of each feature in the list. After excluding the less important job features,
the second aim is to structure the shortened list of the important job features into broader dimensions. As indicated earlier in chapter 3, looking at the concept behind these features indicates that they can be grouped into wider categories. Therefore, the factor analysis technique will be used to structure the important job features into broader dimensions. The extracted dimensions will represent the critical job characteristics in the modern workplace.

In summary, the current study aims to accomplish the following objectives:

1- Confirming the generalisability of the job feature quantitatively to establish whether they are valid to all job types.

2- Distinguishing the important job features from the less important ones using quantitative techniques.

3- Structuring the important job features into broader dimensions that will represent the core job characteristics in the modern workplace.

In view of this, the current chapter describes a confirmatory study to verify the positive job features list described in chapter three. The methodology section describes the sample, materials and procedures used in the study. The results section is divided into two parts; the first describes the process of distinguishing the important job features from the less important ones using percentages. The second part explains the process of running an exploratory factor analysis on the shortened list of the important job features to categorise them into broader dimensions, as well as labelling them using job enrichment terminology. The fourth section discusses the theoretical concepts behind each extracted factor, as well as their compatibility with findings that
could be found in organisational psychology literature. The last section provides a general discussion and implications for further job design research.

4.2 METHODOLOGY

4.2.1 Sample

Data was collected from a cross sectional sample consisting of 424 employees working in various British organisations and job types. The sample was mainly an opportunity one. 88 organisations were contacted and asked to take part in the study. 18 organisations sent their apologies for different reasons (e.g. time unsuitability, not interested etc.), 17 responded positively and took part, while the rest (i.e. 53 companies) did not send any response. Of the 17 organisations who agreed to participate, employees where approached and asked to fill in the checklist on a voluntary basis, 424 responded and sent back their responses directly to the researcher.

The jobs included in the sample were highly heterogeneous and mainly white collar. Both public and private organisations were included. Of the sample, 59.4% were women and 40.6% men. The age range was between 17-73 (mean= 34, SD= 13.53). 34 % (n=144) were age 25 years or younger, 22.4% (n=95) were between age 26 and 40 years, and 42.9 % (182) were age 40 years or older. The average duration of the present employment was 38.45 months ≈ 3.2 years (SD= 56.95). In terms of participants' occupation sectors, there were 5.9% working in sales/marketing, 14.6% in services/customer support, 11.3% professional, 25% secretarial/administrative, 8%
technical, 15.6% computer/IT, 1.2% manufacturing, 14.2% academic, and 4.2% work in other sectors.

Moreover, in terms of occupational level, 74.8% of the sample were employees, 18.4% middle management, 4.7% high management, and 1.9% self employed. 60.2% of the entire sample have a university degree, 9.7% technical college, 11.9% A-levels, 9.4% GCSEs, and 2.2% without any formal education. Finally, the sample’s yearly salary ranged from £5 to 40+ thousand with 14.6% with relatively low yearly income, 47% of them earning between £10 and 20 thousand per year, 35.1% from 21-40 and 3.3 earning £40+ thousand per year.

Comparing the present sample with the one in the first study indicates that both of the samples are similar in terms of education level, age and gender distributions, and the occupational sector. In this sample, the focus was, again, on white collar jobs such as services and professional work which represent the highest portions in the sample. However, the present sample is not compatible with the previous one in terms of occupational level and yearly income. The present sample is dominated by participants who are, in terms of occupational level, just ‘employees’ (i.e. 74.8%) with less yearly income (47% between £10-20 thousand per year). The sample in the first study had a higher proportion of employees holding a managerial position with higher income. The sample in the first study was intentionally meant to be oriented to such categories because it was expected that such jobholder will be better able to describe the requirements of contemporary jobs. Warr (1996) indicated that employees, who do not have financial problems, are more satisfied with their working conditions. The task in the present study was not to distinguish the job features but rather to determine whether they are important features in their jobs or not. As such,
the distribution of the present sample is helpful in that respect. Besides, this is the natural distribution of the workforce in which ‘employees’ are more than managers.

4.2.2 Measures

The 77-item job features list attained in the pilot study was converted into a self-descriptive checklist containing 77 questions (Job Features Checklist: see appendix 3). A five point Likert scale ranging from 1 (not important at all) to 5 (very important) was used to assess the degree of importance of each item. All the items were descriptive statements and were introduced with an introductory question “How important it is for you to have …” then followed by a positive format of a job feature (e.g. a job that is varied; a job that offers you good payment, a job that makes full use of your skills etc.).

The checklist contains instructions about the purpose of the study, aims and the anonymity of participants’ data. Participants were asked to think about jobs that they have held or they wish to hold, then read each item and decide the importance of each item using a quantum ranging from 1 (not important at all) to 5 (very important). Finally, participants were asked to indicate their gender, age, tenure, educational level, occupational sector, occupational level, and economic category per year.

4.2.3 Procedures

Two versions of the checklist were developed, an electronic one and a hard copy. Each participant was given the choice of which to complete. With the electronic copy
the participant completed and submitted the checklist online using his or her internet connection. Choosing the hard copy option, the participant could fill in the checklist using paper and pencil and submit it either personally or via freepost.

A pilot sample (10 persons) was asked to complete the checklist (the hard copy version) and to report the time needed for filling as well as any confusion or misunderstanding they might have during completion. The average filling time was 15 minutes and no confusion or difficulties were reported. As explained earlier in the sample section, 17 companies participated in the survey and 422 participants sent their responses either online or via preaddressed freepost envelopes.

4.2.4 Data analysis

All data were analysed using the SPSS software package. Because all the items were in a positive format, none of the items were recoded and were entered as they were estimated by the participants (between 1 and 5). Data were analysed at group level. Items attaining an average score around five indicated a high level of importance while items with an average score of around one meant that the particular item was not important at all. For the demographical information, apart from the experience section which was recalculated in months, all the items were entered using the original score provided by the participants. Finally, missing data were excluded using pairwise deletion (e.g. Tabachnick and Fidell, 1996). Two analytical steps were used to achieve the study objectives:

1) Descriptive statistics (percentages) were used to identify the important job features and excluding the less important ones.
2) Exploratory factor analysis was used to categorise the important job features into broader dimensions.

All data was tested for their normality. Skewness and kurtosis results indicated that many of the items were normally distributed except items number (8, 10, 22, 43, 55, 65, 70,) which have a skewness and kurtosis higher than 1. Reviewing the frequency tables for these items indicated that the responses were polarised either to the negative side (not important at all) or the positive side (very important). However, following the aims of this study such polarised responses are preferable.

4.3 RESULTS

4.3.1 Identifying the important job features list:

One of the aims of the current study is to confirm the generalisability of the qualitative job features list attained in the pilot study by distinguishing the important job features from less important ones using statistical techniques. To achieve this aim, the degree of importance of each of the job features was determined using percentages. Specifically, responses on each item were recoded for the 424 participants. Based on the five-point Likert scale responses (see appendix 3), two categories were created. The first category contains items that received responses of ‘1’, ‘2’ or ‘3’ which represent the less important job features. The second category contains the items that received responses of ‘4’ or ‘5’, which represent important job features.

The recoding criterion was determined by analysing the logic behind the 5-point Likert quantum used in this study. ‘2’ and ‘1’ choices represent “not important at all”
and ‘not important’ preferences respectively. A ‘3’ response represents the neutral choice; this means that the participants have no preference regarding this item. ‘4’ and ‘5’ choices represent “important” and “very important” preferences respectively. The study was concerned with identifying the items that are important rather than those attained poor or neutral responses. Items that were indicated as important job features by 51% of the participants were considered as important job features. Table 4.1 displays the percentages of both categories. Items that were addressed as important job features by more than 51% of the participants are presented in boldface type.

<table>
<thead>
<tr>
<th>Job Features</th>
<th>N</th>
<th>Important %</th>
<th>Less important %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) A job without tight deadlines in your tasks</td>
<td>423</td>
<td>19.6</td>
<td>80.4</td>
</tr>
<tr>
<td>2) A job that requires you to use a number of complex or high-level skills</td>
<td>422</td>
<td>70.6</td>
<td>29.4</td>
</tr>
<tr>
<td>3) A job in which air quality is important</td>
<td>421</td>
<td>67.9</td>
<td>32.1</td>
</tr>
<tr>
<td>4) A job that requires you to produce original ideas</td>
<td>423</td>
<td>67.1</td>
<td>32.9</td>
</tr>
<tr>
<td>5) A job in which as a team you know your progress, e.g. achieving a target or not</td>
<td>423</td>
<td>86.3</td>
<td>13.7</td>
</tr>
<tr>
<td>6) A job that is related to your qualifications</td>
<td>421</td>
<td>56.3</td>
<td>43.7</td>
</tr>
<tr>
<td>7) A job that does not require carrying the work over to your home life</td>
<td>424</td>
<td>67.7</td>
<td>32.3</td>
</tr>
<tr>
<td>8) A job in which the managers are good organisers and know how to run the business</td>
<td>424</td>
<td>95.3</td>
<td>4.7</td>
</tr>
<tr>
<td>9) A job in which the managers care about you</td>
<td>422</td>
<td>94.3</td>
<td>5.7</td>
</tr>
<tr>
<td>10) A job in which the managers encourage staff to make suggestions</td>
<td>423</td>
<td>93.1</td>
<td>6.9</td>
</tr>
<tr>
<td>11) A job that does not have many disruptions during your workday</td>
<td>424</td>
<td>23.8</td>
<td>76.2</td>
</tr>
<tr>
<td>12) A job in which the work itself provides clues about whether or not you are performing well</td>
<td>423</td>
<td>72.6</td>
<td>27.4</td>
</tr>
<tr>
<td>13) A job in which the work you produce affects someone else</td>
<td>424</td>
<td>67.9</td>
<td>32.1</td>
</tr>
<tr>
<td>14) A job in which the workplace temperature is appropriate</td>
<td>423</td>
<td>76.6</td>
<td>23.4</td>
</tr>
<tr>
<td>15) A job in which you are familiar with all your tasks</td>
<td>420</td>
<td>48.1</td>
<td>51.9</td>
</tr>
<tr>
<td>16) A job in which you are highly appreciated by the people you have served</td>
<td>421</td>
<td>82.2</td>
<td>17.8</td>
</tr>
<tr>
<td>17) A job in which you are not watched all the time by managers</td>
<td>423</td>
<td>76.1</td>
<td>23.9</td>
</tr>
<tr>
<td>18) A job in which you are the only person responsible for the work you produce</td>
<td>422</td>
<td>25.1</td>
<td>74.9</td>
</tr>
<tr>
<td>19) A job in which you do not receive incompatible requests from two or more people</td>
<td>422</td>
<td>47.2</td>
<td>52.8</td>
</tr>
<tr>
<td>20) A job in which you finish a piece of work that adds value to the business</td>
<td>421</td>
<td>77.7</td>
<td>22.3</td>
</tr>
<tr>
<td>21) A job in which you give advice to others</td>
<td>421</td>
<td>58.4</td>
<td>41.6</td>
</tr>
<tr>
<td>22) A job in which you have good relationships with your colleagues</td>
<td>422</td>
<td>95.7</td>
<td>4.3</td>
</tr>
<tr>
<td>23) A job in which you have general directions for your duties</td>
<td>418</td>
<td>70.0</td>
<td>30.0</td>
</tr>
<tr>
<td>Job features</td>
<td>N</td>
<td>Important %</td>
<td>Less important %</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>----</td>
<td>-------------</td>
<td>------------------</td>
</tr>
<tr>
<td>24) A job in which you have personal space that provides you with adequate privacy</td>
<td>422</td>
<td>67.5</td>
<td>32.5</td>
</tr>
<tr>
<td>25) A job in which you have the freedom to do your work in the way you want</td>
<td>422</td>
<td>80.1</td>
<td>19.9</td>
</tr>
<tr>
<td>26) A job that requires thinking and stimulating your mind</td>
<td>422</td>
<td>96.4</td>
<td>3.6</td>
</tr>
<tr>
<td>27) A job in which you learn new skills and develop abilities</td>
<td>423</td>
<td>92.4</td>
<td>7.6</td>
</tr>
<tr>
<td>28) A job in which you make decisions and implement them without consulting others</td>
<td>421</td>
<td>34.3</td>
<td>65.7</td>
</tr>
<tr>
<td>29) A job in which you receive high recognition for the work you produce</td>
<td>421</td>
<td>71.0</td>
<td>29.0</td>
</tr>
<tr>
<td>30) A job in which your tasks take a short time to do</td>
<td>422</td>
<td>5.2</td>
<td>94.8</td>
</tr>
<tr>
<td>31) A job in which you receive training that helps you to your work</td>
<td>419</td>
<td>80.7</td>
<td>19.3</td>
</tr>
<tr>
<td>32) A job in which you start the product and carry it over to the end</td>
<td>421</td>
<td>50.4</td>
<td>50.6</td>
</tr>
<tr>
<td>33) A job in which you train and coach your team members</td>
<td>423</td>
<td>36.9</td>
<td>63.1</td>
</tr>
<tr>
<td>34) A job in which you work alone on your own initiative without direct supervision</td>
<td>422</td>
<td>46.8</td>
<td>53.2</td>
</tr>
<tr>
<td>35) A job in which your colleagues recognise your contribution to the organisation</td>
<td>421</td>
<td>48.5</td>
<td>51.5</td>
</tr>
<tr>
<td>36) A job that does not require documenting all your actions</td>
<td>422</td>
<td>44.1</td>
<td>55.9</td>
</tr>
<tr>
<td>37) A job in which your managers give you information about your performance</td>
<td>422</td>
<td>74.9</td>
<td>25.1</td>
</tr>
<tr>
<td>38) A job in which you receive professional respect</td>
<td>422</td>
<td>84.8</td>
<td>15.2</td>
</tr>
<tr>
<td>39) A job in which, as a team, you decide how the work should be done</td>
<td>420</td>
<td>65.5</td>
<td>35.5</td>
</tr>
<tr>
<td>40) A job that contains minimum paper and administrative work</td>
<td>421</td>
<td>26.8</td>
<td>73.2</td>
</tr>
<tr>
<td>41) A job in which the tasks you do match your abilities</td>
<td>420</td>
<td>79.5</td>
<td>20.5</td>
</tr>
<tr>
<td>42) A job that does not have very hectic workdays</td>
<td>422</td>
<td>15.9</td>
<td>84.1</td>
</tr>
<tr>
<td>43) A job in which managers are NOT aggressive or inconsiderate</td>
<td>421</td>
<td>92.9</td>
<td>7.1</td>
</tr>
<tr>
<td>44) A job that does not require concentration all the time</td>
<td>418</td>
<td>20.6</td>
<td>79.4</td>
</tr>
<tr>
<td>45) A job in which your co-workers let you know how well you are doing that job</td>
<td>420</td>
<td>49.3</td>
<td>50.7</td>
</tr>
<tr>
<td>46) A job that does not require doing things that ought to be done in a different way</td>
<td>418</td>
<td>25.8</td>
<td>74.2</td>
</tr>
<tr>
<td>47) A job in which all the team have goals to achieve</td>
<td>418</td>
<td>70.8</td>
<td>29.2</td>
</tr>
<tr>
<td>48) A job that requires you to think quickly</td>
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<td>38.5</td>
<td>61.5</td>
</tr>
<tr>
<td>49) A job that expects high level of planning and development of strategies</td>
<td>418</td>
<td>41.1</td>
<td>58.9</td>
</tr>
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<td>50) A job that gives extra money for additional responsibilities or overtime</td>
<td>421</td>
<td>70.8</td>
<td>29.2</td>
</tr>
<tr>
<td>51) A job where your co-workers are co-operative (not competitive)</td>
<td>421</td>
<td>88.6</td>
<td>11.4</td>
</tr>
<tr>
<td>52) A job that gives you the opportunity to work outdoors</td>
<td>415</td>
<td>21.4</td>
<td>78.6</td>
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<td>53) A job that has a quiet workplace</td>
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<td>32.9</td>
<td>67.1</td>
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<td>54) A job that has a stable future</td>
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<td>18.1</td>
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<td>55) A job that has benefits: paid sick leave, holidays, pension etc.</td>
<td>421</td>
<td>94.5</td>
<td>5.5</td>
</tr>
<tr>
<td>56) A job that has convenient shift-times</td>
<td>421</td>
<td>63.2</td>
<td>36.8</td>
</tr>
<tr>
<td>57) A job that has good communication between team members</td>
<td>421</td>
<td>97.1</td>
<td>2.9</td>
</tr>
<tr>
<td>58) A job that has high social status</td>
<td>422</td>
<td>27.0</td>
<td>73.0</td>
</tr>
<tr>
<td>59) A job that has little responsibility and no stress</td>
<td>419</td>
<td>9.8</td>
<td>90.2</td>
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<tr>
<td>60) A job that has many educational opportunities (e.g. workshops, conferences, journal subscriptions etc.)</td>
<td>420</td>
<td>47.6</td>
<td>52.4</td>
</tr>
<tr>
<td>61) A job that has some social events in the workplace (e.g. playing bowling, Snooker)</td>
<td>421</td>
<td>42.3</td>
<td>57.7</td>
</tr>
<tr>
<td>62) A job that has undefined work hours</td>
<td>418</td>
<td>16.0</td>
<td>84.0</td>
</tr>
<tr>
<td>63) A job that is convenient to your family situation</td>
<td>419</td>
<td>74.2</td>
<td>25.8</td>
</tr>
<tr>
<td>64) A job in which high safety procedures are important</td>
<td>420</td>
<td>63.8</td>
<td>36.2</td>
</tr>
</tbody>
</table>
### Job features

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Important %</th>
<th>Less Important %</th>
</tr>
</thead>
<tbody>
<tr>
<td>65) A job that is simple and repetitive</td>
<td>419</td>
<td>1.2</td>
<td>98.8</td>
</tr>
<tr>
<td>66) A job that is team-based</td>
<td>422</td>
<td>46.9</td>
<td>53.1</td>
</tr>
<tr>
<td>67) A job that is varied (requires doing different things)</td>
<td>418</td>
<td>93.5</td>
<td>6.5</td>
</tr>
<tr>
<td>68) A job that keeps you updated in your field</td>
<td>422</td>
<td>85.8</td>
<td>14.2</td>
</tr>
<tr>
<td>69) A job that makes full use of your skills</td>
<td>421</td>
<td>90.3</td>
<td>9.7</td>
</tr>
<tr>
<td>70) A job that offers you good payment (per hour/a good salary)</td>
<td>420</td>
<td>89.8</td>
<td>10.2</td>
</tr>
<tr>
<td>71) A job that provides you with the opportunity to interact with different people</td>
<td>422</td>
<td>44.3</td>
<td>55.7</td>
</tr>
<tr>
<td>72) A job that requires tackling problems and finding solutions</td>
<td>422</td>
<td>83.9</td>
<td>16.1</td>
</tr>
<tr>
<td>73) A job in which you have the opportunity to grow through your work</td>
<td>419</td>
<td>87.1</td>
<td>12.9</td>
</tr>
<tr>
<td>74) A job that does not require much physical effort</td>
<td>420</td>
<td>11.7</td>
<td>88.3</td>
</tr>
<tr>
<td>75) A job that does not require working at speed</td>
<td>421</td>
<td>9.7</td>
<td>90.3</td>
</tr>
<tr>
<td>76) A job where if a problem exists at work, you can discuss it with your colleagues</td>
<td>422</td>
<td>90.8</td>
<td>9.2</td>
</tr>
<tr>
<td>77) A job that gives you fair pay for your contribution to the organisation</td>
<td>416</td>
<td>96.7</td>
<td>3.3</td>
</tr>
</tbody>
</table>

* Important job feature indices are listed in boldface type

Percentages results indicate that there are 31 less important items and 46 items representing the important job features. The highest average percentage was attained by item number 77 in the checklist which represents the preference of having a job that gives employees fair pay for their contribution to the organisation (%96.7) while the lowest percentage is obtained for the item number 6 that represents preference for having a job that matches employee qualifications (56.3%).

#### 4.3.2 Factor analysis:

After identifying the critical job features, the next step was categorising the shortened list into broader dimensions. Therefore, the 46 important items were entered into exploratory factor analysis and Oblimin oblique as a rotation method.
Tabachnick and Fidell (1996) indicate that a sample size of 300 is good and 500 is very good for factor analysis. Therefore, a sample size of 424 participants was very satisfactory for the purpose of this study. Furthermore, the Chi square and Kaiser-Meyer-Olkin (KMO) tests were used to determine sampling adequacy (the test are estimating whether the partial correlations among variables are small or not). Results from Chi square and KMO indicate that the sample is adequate for the factor analysis. Although Chi square was significant, KMO was acceptable ($\chi^2 = 52118.56$, $df = 99$, $p<.01$; KMO = .815, $p<.01$). The rotation was converged in 25 iterations. Eigenvalue, scree, and percentage of variance were used to determine the appropriate factor structure. The results show a 12 factor solution with a total of 58.73% explained variance with the first factor accounting for 17.10 and the 12th factor for 2.35% of the total variance. The results of the factor analysis are presented in two tables. Table 4.2 presents the items that were categorised into 12 factors. The table provides the 12 factors’ labels and there corresponding items, features mean, standard deviation, communalities, Coronach alpha of the factors, the explained variance of the factors, and the factor weights (the additive score of the average mean of the categorised items divided by the number of items). Table 4.3 provide the loading for each of the items on the 12 factors solution.

Table 4.2: The results of the exploratory factor analysis, means, SD and communalities

<table>
<thead>
<tr>
<th>F</th>
<th>I</th>
<th>Factors and the supported items</th>
<th>M</th>
<th>SD</th>
<th>Com</th>
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<tbody>
<tr>
<td>1</td>
<td>26</td>
<td>Intellectually challenging tasks</td>
<td>4.48</td>
<td>.584</td>
<td>.649</td>
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<tr>
<td></td>
<td>2</td>
<td>A job that requires thinking and stimulating your mind</td>
<td>3.74</td>
<td>.933</td>
<td>.601</td>
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<tr>
<td></td>
<td>72</td>
<td>A job that requires tackling problems and finding solutions</td>
<td>4.07</td>
<td>.737</td>
<td>.650</td>
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<tr>
<td></td>
<td>27</td>
<td>A job in which you learn new skills and develop abilities</td>
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<td>.655</td>
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<tr>
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<td>Description</td>
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<td>SD</td>
<td>Com</td>
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</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>68</td>
<td>A job that keeps you updated in your field</td>
<td>4.10</td>
<td>.686</td>
<td>.601</td>
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<tr>
<td>4</td>
<td>A job that requires you to produce original ideas</td>
<td>3.71</td>
<td>.831</td>
<td>.548</td>
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<tr>
<td>67</td>
<td>A job that is varied (requires doing different things)</td>
<td>4.30</td>
<td>.623</td>
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<tr>
<td>73</td>
<td>A job in which you have the opportunity to grow through your work</td>
<td>4.20</td>
<td>.733</td>
<td>.591</td>
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<tr>
<td>69</td>
<td>A job that makes full use of your skills</td>
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<td>.637</td>
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<tr>
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<tr>
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<td><strong>% of factor's contribution to the explained variance</strong></td>
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<tr>
<td>2</td>
<td>Work-home conflict</td>
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<tr>
<td>7</td>
<td>A job that does not require carrying the work over to your home life</td>
<td>3.88</td>
<td>1.09</td>
<td>.552</td>
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<td>56</td>
<td>A job that has convenient shift-times</td>
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<td>1.03</td>
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<td><strong>Factor weight (means sum/number of items)</strong></td>
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<td></td>
<td><strong>Person correlation</strong></td>
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<tr>
<td>3</td>
<td>Supportive supervision</td>
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<td></td>
<td></td>
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<tr>
<td>9</td>
<td>A job in which the managers care about you</td>
<td>4.46</td>
<td>.626</td>
<td>.679</td>
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<tr>
<td>10</td>
<td>A job in which the managers are good</td>
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<td>.678</td>
<td>.709</td>
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<tr>
<td>8</td>
<td>A job in which the managers encourage staff to make suggestions</td>
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<td>.626</td>
<td>.594</td>
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<tr>
<td>4</td>
<td>Autonomy</td>
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<td></td>
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<tr>
<td>24</td>
<td>A job in which you have personal space that provides you with adequate privacy</td>
<td>3.74</td>
<td>.843</td>
<td>.614</td>
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<tr>
<td>25</td>
<td>A job in which you have the freedom to do your work in the way you want</td>
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<td>.725</td>
<td>.632</td>
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<tr>
<td>17</td>
<td>A job in which you are not watched all the time by managers</td>
<td>3.99</td>
<td>.865</td>
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<td>5</td>
<td>Recognition</td>
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<tr>
<td>16</td>
<td>A job in which you are highly appreciated by the people you have served</td>
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<td>29</td>
<td>A job in which you receive high recognition for the work you produce</td>
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<td>.806</td>
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<td>20</td>
<td>A job in which you finish a piece of work that adds value to the business</td>
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<td>38</td>
<td>A job in which you receive professional respect</td>
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<tr>
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<tr>
<td>6</td>
<td>Supportive co-workers climate</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>51</td>
<td>A job where your co-workers are co-operative (not competitive)</td>
<td>4.19</td>
<td>.661</td>
<td>.542</td>
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</tr>
<tr>
<td>76</td>
<td>A job where if a problem exists at work, you can discuss it with your colleagues</td>
<td>4.17</td>
<td>.619</td>
<td>.553</td>
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<td>57</td>
<td>A job that has good communication between team members</td>
<td>4.43</td>
<td>.558</td>
<td>.574</td>
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<td>22</td>
<td>A job in which you have good relationships with your colleagues</td>
<td>4.57</td>
<td>.583</td>
<td>.555</td>
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<tr>
<td>43</td>
<td>A job in which the managers are not aggressive</td>
<td>4.50</td>
<td>.719</td>
<td>.468</td>
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### Decision latitude

<table>
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<th>M</th>
<th>SD</th>
<th>Com</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>A job in which, as a team, you decide how the work should be done</td>
<td>3.69</td>
<td>.805</td>
<td>.662</td>
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<tr>
<td>23</td>
<td>A job in which you have general directions for your duties</td>
<td>3.74</td>
<td>.799</td>
<td>.574</td>
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<tr>
<td>21</td>
<td>A job in which you give advice to others</td>
<td>3.57</td>
<td>.844</td>
<td>.527</td>
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<tr>
<td>12</td>
<td>A job in which the work itself provides clues about whether or not you are performing well</td>
<td>3.83</td>
<td>.708</td>
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<tr>
<td>13</td>
<td>A job in which the work you produce affects someone else</td>
<td>3.79</td>
<td>.860</td>
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### Training adequacy

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<th>SD</th>
<th>Com</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>A job in which you receive training that helps you to do your work</td>
<td>4.02</td>
<td>.765</td>
<td>.585</td>
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<td>41</td>
<td>A job in which the tasks you do match your abilities</td>
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<td>.767</td>
<td>.531</td>
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</table>

### Feedback

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<th>Com</th>
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</thead>
<tbody>
<tr>
<td>37</td>
<td>A job in which your managers give you information about your performance</td>
<td>3.88</td>
<td>.729</td>
<td>.614</td>
</tr>
<tr>
<td>47</td>
<td>A job in which all the team have goals to achieve</td>
<td>3.74</td>
<td>.765</td>
<td>.608</td>
</tr>
<tr>
<td>5</td>
<td>A job in which as a team you know your progress, e.g. achieving a target or not</td>
<td>4.12</td>
<td>.735</td>
<td>.617</td>
</tr>
</tbody>
</table>

### Physical environment

<table>
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<th>SD</th>
<th>Com</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>A job in which air quality is important</td>
<td>3.81</td>
<td>.867</td>
<td>.715</td>
</tr>
<tr>
<td>64</td>
<td>A job in which high safety procedures are important</td>
<td>3.52</td>
<td>1.00</td>
<td>.503</td>
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<tr>
<td>14</td>
<td>A job in which the workplace temperature is appropriate</td>
<td>3.94</td>
<td>.852</td>
<td>.590</td>
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</table>

### Financial rewards

<table>
<thead>
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<th>SD</th>
<th>Com</th>
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</thead>
<tbody>
<tr>
<td>70</td>
<td>A Job that offers you good payment (per hour/a good salary)</td>
<td>4.26</td>
<td>.724</td>
<td>.676</td>
</tr>
<tr>
<td>50</td>
<td>A job that gives extra money for additional responsibilities or overtime</td>
<td>3.79</td>
<td>.918</td>
<td>.543</td>
</tr>
<tr>
<td>77</td>
<td>A job that gives you fair pay for your contribution to the organisation</td>
<td>4.45</td>
<td>.578</td>
<td>.581</td>
</tr>
<tr>
<td>55</td>
<td>A job that has benefits: paid sick leaves, holidays, pension etc</td>
<td>4.42</td>
<td>.649</td>
<td>.427</td>
</tr>
</tbody>
</table>

### Home-work conflict

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>M</th>
<th>SD</th>
<th>Com</th>
</tr>
</thead>
<tbody>
<tr>
<td>63</td>
<td>A job that is convenient to your family situation</td>
<td>3.93</td>
<td>.855</td>
<td>.686</td>
</tr>
<tr>
<td>54</td>
<td>A job that has a stable future</td>
<td>4.01</td>
<td>.776</td>
<td>.468</td>
</tr>
</tbody>
</table>
C h a p te r 4

Factor weight (means sum/ number o f items)

3.97

Person correlation

.42, p<.01

% o f factor’s contribution to the explained variance

2.35

Total explained variance by the 12 factors solution

58.73

*F~ factor number, I = item number in the checklist, M= mean, SD= standard deviation, Com=
commimalities.

T ab le 4.3: T h e loadings o f the items fo r the 12 factors solution after oblim in rotation
\Factors

2
1
3
4
5
Feature^
.043 -.117
26
.737
.106 -.068
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.094 -.143 -.198
.708
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.702 -.131
.051
.098 -.006
27
.683
.102 -.239
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.119 -.037
.602
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4
.567 -.255 -.026 -.094 -.130
.155 -.062
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.022
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73
.528 -.123 -.156
.033 -.035
.066 -.069
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170 -.012
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7
.693 -.113
.040
.043
56
-.042
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.119
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.012
9
-.047
.066 -.753
.001 -.049
10
.148 -.192 -.693
.024 -.139
8
.120
.330 -.623
.012
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24
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.719 -.007
25
.095 -.056 -.028
.709 -.025
17
-.215 -.088 -.102
.567 -.218
-.029
.045 -.193
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.039 -.779
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.072 -.737
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.079 -.127
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.098 -.469
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.128 -.159
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-.004 -.070 -.230
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-.061 -.300 -.289
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.171 -.068
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.237 -.183
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.083 -.106
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.004 -.246
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.099 -.041 -.179
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.159 -.087
.029 -.033
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.111 -.028
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.020 -.136 -.124
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.114 -.181 -.044
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.103 -.092 -.196 -.084
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.101 -.041
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-.146
.365 -.306 -.051 -.123
.031 -.115 -.053
70
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.000 -.102 -.194
.092 -.084 -052 -.004 -.144
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-.044
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.095 -.009
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-.117
54
.056
.128 -.029 -.122
**Factor loadings >|.30| are listed in boldface

6

7

8

9

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11

12

.007.
.121
.080
.053
-.076
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-.272
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-.034
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.074
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-.063
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-.052
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.497
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-.068
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-.166
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-.031
-.029
-.004
.176
.001
.797
-.377

93


As noted before, one of the aims of this study is to categorise the important job features into factors that are statistically covary and constitute a logical factors. However, the first option was running the factor analysis using the free factor solution (this means that the number of factors was not fixed on a specific quantity). The solution offered by this option was helpful in achieving the above aim as the solution offered 12 factors in which the items covaried and constituted a logical structure.

Table 4.4 presents the correlation matrix between the 12-factor solution. As can be seen form the table, the correlations indices are low and insignificant which give empirical evidence that they are separable job aspects.

<table>
<thead>
<tr>
<th>Factors</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>*.114</td>
<td></td>
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<tr>
<td>6</td>
<td>.186</td>
<td>-.066</td>
<td>-.101</td>
<td>.032</td>
<td>-.138</td>
<td>-.091</td>
<td>*</td>
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<tr>
<td>7</td>
<td>-.237</td>
<td>-.011</td>
<td>.220</td>
<td>-.053</td>
<td>.131</td>
<td>.164</td>
<td>-.192</td>
<td>-.015</td>
<td>*</td>
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<td></td>
</tr>
<tr>
<td>8</td>
<td>.045</td>
<td>.140</td>
<td>-.115</td>
<td>-.029</td>
<td>-.079</td>
<td>-.139</td>
<td>.085</td>
<td>.035</td>
<td>-.131</td>
<td>*</td>
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</tr>
<tr>
<td>9</td>
<td>-.043</td>
<td>.180</td>
<td>.001</td>
<td>-.048</td>
<td>.048</td>
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<td>-.058</td>
<td>-.016</td>
<td>.147</td>
<td>-.165</td>
<td>*</td>
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<td>-.061</td>
<td>-.089</td>
<td>.034</td>
<td>-.024</td>
<td>-.69</td>
<td>-.028</td>
<td>.079</td>
<td>.007</td>
<td>.038</td>
<td>*</td>
</tr>
</tbody>
</table>

The first factor that contains the highest number of items (nine items) is labelled "intellectually challenging tasks". The factor weight was 4.13 (Cronbach alpha=.85) and attained the highest explained variance (17.10%). The second factor contains 2 items and is labelled "work-home conflict". This factor explains 8.26% of the total variance and weighted 3.77 with Pearson correlation equal to .52. Together, the first two factors are responsible for nearly half of the total explained variance (i.e. 25.33% of 58.73%).
The third factor contains 3 items (Cronbach alpha= .71) resembling the "supportive supervision" dimension. This factor achieved the highest average weight (4.44) but with modest explained variance (4.89%). The fourth factor is "autonomy". This factor contains three items (Cronbach alpha= .53) with 3.92 as weight average and explained (4.54%) of the total variance. The fifth factor is the recognition variables (average weight= 3.97; Cronbach alpha= .70 and explained variance= 4.22%). The next loaded factor is "supportive co-workers climate", this factor contains 5 items (Cronbach alpha= .67) with average weight equal to 4.37 and a contribution of 3.7% of the explained variance. The seventh factor represents the "decision latitude" variables and contains five items (Cronbach alpha= .57) with explained variance of 3.12% and weight average equal to 3.72.

The eighth factor represents the "training adequacy" job characteristic. The factor contains two items (Pearson correlation= .46, p<.01) with a contribution of 2.86% to the total explained variance. "Feedback" was the ninth loaded factor with average weight equal to 3.94 and a contribution of 2.78% to the explained variance. The next loaded factor is the "physical environment", which contains three items (Cronbach alpha= .55) with weight equal to 3.75 and explained 2.55% of the total variance. The eleventh factor is the "financial rewards" that contains four items (Cronbach alpha=.68) and explained 2.41% of the total variance. Finally, the twelfth loaded factor is "home-work conflict". This factor contains two items (Pearson correlation= .42, p<.01) with weight average equal to 3.97 and explained 2.35% of the total variance.
4.4 DISCUSSION

As can be seen, the job features obtained from the first study, were structured into broader job dimensions. The final list consisted of 12 job characteristics that were perceived as critical aspects for contemporary jobs. Overall, the current study achieved all the main aims; firstly the degrees of importance of the qualitative features were confirmed using quantitative techniques. Therefore, these characteristics can now be described as more reliable and have stronger generalisability for theoretical modelling or field testing. Secondly, the important features were distinguished from less important ones and 46 job features were identified as important to contemporary jobs and from the employee’s perspective. Finally, factor analysis was used to structure the important features into broader dimensions. The extracted dimensions are: intellectually challenging tasks, autonomy, decision latitude, feedback, training adequacy, supportive supervision, supportive co-workers climate, financial rewards, recognition, physical environment, work-home conflict, and home-work conflict.

In comparison, there is much similarity between the present characteristics and those presented in chapter 3 (i.e. Table 3.1) that were extracted via content analysis. In addition, there is much similarity between these characteristics and those presented in Table 2.1 that represents the prominent characteristics of the existing job design theories. Finally, some of the extracted characteristics represent factors in the ‘job content’ (i.e. the tangible features of the tasks) while others are characteristics represent ‘job context’ factors (characteristics of the job context where tasks are executed). These will be discussed in detail in the following sections.
To provide a clear presentation, the discussion section was divided into 4 subsections. In the first section each of the characteristics will be discussed in depth to explain their conceptual framework and where they stand in job design and organisational psychology research. The second section will provide a general discussion of these characteristics and their similarities and differences with existing job design theories. In addition, the new aspects that were addressed in present research and were neglected in previous theories will be highlighted. In the later sections the implication of present results for job design research, limitations, conclusion, and further directions will be presented.

4.4.1. The critical job characteristics in contemporary jobs

In this section each of the characteristics will be discussed in detail to explain their conceptual framework and whether they represent a ‘job content’ (task) factors or ‘job context’ ones. The definition of each characteristic is given on the first paragraph of each section (the italic ones). We developed these definitions based on the items that were categorised under each factor. However, we tried that each definition is aligning with those founded in job design literature. However, some of the extracted factors were merged into single characteristics because of their similarity in concept. These will be discussed in detail in their corresponding sections.
4.4.1.1 Intellectually challenging tasks:

*A job content characteristic that represents the degree to which the job provides employees with mental stimulation and challenging tasks, which involve problem solving and using a variety of abilities, methods and skills.*

This job characteristic has been mentioned frequently by the participants (based on the earlier checklist data and the percentages presented in Table 4.1). The factor accounted for 17.10% of the total explained variance. This dimension refers to classical task features such as intellectual demands (e.g. problem solving), variety and skills discretion. These results strongly indicate that employees nowadays ask for tasks that require problem solving and creativity. In other words, when employees have tasks that need problem solving or were set a stimulating task they enjoyed the challenge of getting the work done. This strong focus on challenge and stimulating tasks may be a result of the growth in knowledge-oriented work and more educated workforce. Jobs in these contexts (and indeed in manufacturing) are becoming more knowledge-oriented. Frankell et al (1999) noted that the demand for problem solving is increasing in the modern work context because of greater product variety, the requirement for employees to carry out multiple roles, and more frequent policy and procedural changes.

Intellectually challenging demands as a job characteristic have been addressed previously in many job design theories. All existing job design theories addressed challenge and its related concepts as part of the job content characteristics because it is part of tangible features of the tasks and how they are structured and regulated to produce a product. As can be seen from Table 2.1, six out of existing job design theories addressed job demands (challenge, responsibility and related concepts) as a
major job characteristic. However, Hackman and Oldham (1976) addressed this important aspect in their job characteristics model but more as a moderator, as challenge can be found in their definition of growth need strength.

Recently, work challenge has become a vital issue to organisational behaviour. Job complexity is increasing with technological change and globalisation. It follows that intelligence and mental ability turn out to be more important in predicting job performance or creativity. Gottfredson (1997) reported many studies in which job performance has improved when the job tasks were cognitively demanding. The author stated in paper entitled ‘Why g matters: the complexity of everyday life’:

"Where the old industrial economy rewarded mass production of standardised products for large markets, the new post-industrial economy rewards the timely customisation and delivery of high-quality, convenient products for increasingly specialised markets. Where the old economy broke work into narrow, routinised, and closely supervised tasks, the new economy increasingly requires workers to work in cross functional teams, gather information, make decisions, and undertake diverse, changing, and challenging sets of tasks in a fast-changing and dynamic global market” (p 121).

Furthermore, it seems that challenge is not just responsible for task performance, as recent research has indicated that intellectual challenge can be linked to other organisational and individual benefits. Oldham and Cummings (1996) found that skill variety, challenge and intellectual demands of the job have been seen as a key characteristic to reduce the employees' anxiety. According to the job demand-control model (Karasek, 1979), jobs low in demand are very stressful but jobs with high demand and decision authority are very active jobs and promote learning motivation.
This helps in developing new behaviour and skills in the employee which will result in a higher performance and wellbeing. Jones & Fletcher (1996) indicate that high demand can be good under the right circumstances. They noted that lack of stimulation and utilisation of workers’ abilities are one of the most potent stressors.

In many models and theoretical attempts, challenge was seen as a matter of task variety. As an example, Hackman & Oldham (1976) argued that if an employee has different tasks to do he or she should perceive the job as a meaningful or stimulating one. However, although variety in tasks remains one of the important dimensions in employees’ motivation (Parker et al, 2001; Warr, 2002a), it is still a part of the challenge but not the whole concept. Variety in tasks resembles the horizontal job enlargement rather than the vertical one. This is supported by a recent study conducted by Kuk et al (1999) that indicated that the JCM failed to diagnose the quality of complex jobs. The researcher suggested a hierarchal perspective for job complexity in which challenge is seen as a vertical (i.e. intellectual demands) and horizontal (i.e. variety) enrichment.

In summary, intellectually challenging tasks (i.e. problem solving, cognitive demands, task variety etc.) have been addressed strongly by the current study’s participants. In the literature, intellectual challenge is considered as one of the key features to enhance employee performance and produce high work quality (by motivating them to learn new behaviours and skills) and employees’ mental health and wellbeing (by reducing anxiety and boredom). The current results are compatible with recent research which indicates that intellectual challenge is a mix between skill variety, problem solving and skill discretion.
4.4.1.2 Control:

A job content characteristic that represents the degree to which the job provides employees with substantial freedom, independence and discretion to the individual to make decisions about their work processes or procedures.

Job design literature has identified job control as the amount of autonomy or decision latitude that the job offers (i.e. Jones & Fletcher, 1996; Karasek, 1979; Karasek and Theorell, 1990; Jackson et al, 1993). Consequently, the fourth factor (autonomy) and the seventh factor (decision latitude) were combined in a single characteristic labelled ‘control’, as the two factors reflect complementary concepts. This merging is supported by contemporary job design models and theories (e.g. demand-control model, action theory) that used the feature of job control to reflect the concepts of autonomy, decision latitude or the discretion that employees have (e.g. Karasek et al, 1998). All the job design theories addressed this factor as a characteristic in the task that can be redesigned and part of the job content (task) characteristics (Hackman and Oldham, 1976; Karasek, 1979; Algera, 1998).

However, control (or its sub concepts) was considered the key job characteristic in job enrichment research and job redesign (Parker et al, 2001; Hackman and Oldham, 1976). Six out of eight of the existing job design theories or models have marked job control as one of the key aspects in job redesign (HMT, JCM, ST, AT, DC, VM; see table 2.1 for a comparison). This study is complementary to previous job design research as participants of the study addressed job control as one of the critical job characteristics in the modern workplace.

The relationship between job control and motivation, performance and health outcomes has been the subject of increasing research since models of job design
began to be published (Parker et al, 2001, Wall et al, 2002, Kompier, 2002). In motivation and job design research, the notion of control is implicit in the early work of Maslow (1954), Herzberg et al. (1959), and by the job characteristics model (JCM; Hackman & Oldham, 1976). The latter model assumed that autonomy is a key issue to giving employees a feeling of experienced responsibility for outcomes of the work. Autonomy, along with other key variables, was seen as a predictor of employees’ performance and satisfaction. The job demand-control model (Karasek, 1979) has also emphasised the concept of job control in stress and wellbeing. The DC model showed that low job control can affect health status, the cardiovascular system in particular and higher levels of the stress hormone cortisol (cf. Jones & Fletcher, 2003).

Moreover, Action Theory has also stressed the importance of job control. Frese & Zapf (1994) have indicated that controllability is one of the key features when designing work tasks. Much of the research has showed that empowering employees should raise organisational productivity and employee health. Some recent studies have discussed the importance of job control in improving employees’ skills utilisation and self enhancement (Holman and Wall, 2002).

Overall, as expected, control remains valid and strongly addressed by current research participants as an important characteristic in their work life. These results are complementary to the classical job characteristics results in which they considered job control as an important source for task accomplishment and responsible for facilitating job learning and skills utilisation as well as having positive effects on employees’ mental health and wellbeing (Holman & Wall, 2002; Demerouti et al 2001; Elovaainio, 2000; Payne & Wall, 1999; Parker et al., 1997, Karasek, 1979, Hackman & Oldham, 1976).
4.4.8 Feedback:

A job content characteristic that represents the degree to which an employee receives direct and clear information about the effectiveness of his or her performance by carrying out the work activities and from some other persons as well, such as co-workers or supervisors.

This is one of the classical ‘job content’ characteristics that job design research considered as one of the features of the task that job redesign should address (e.g. Hackman & Oldham, 1976; Parker & Wall, 1998; Parker et al., 2001; Warr, 2002a). As complementary results, the participants of the current study ranked job feedback as one of the important aspects that they have in their job or they wish to have. Feedback about performance and work progress as a member or as a team were seen as a vital issue to employees working in contemporary jobs.

Many psychological and behavioural theories addressed the importance of job feedback. In behaviourism, feedback is essential for learning and works as an operant reinforcer. In goal setting theory, people use feedback to evaluate their performance relative to their goals (Locke & Latham, 1990). In organisational research, feedback generally shows positive effects. There are a number of studies that claim performance improvement for individuals by regular feedback (e.g. Ilgen et al., 1979; Hackman and Oldham, 1976).

In studies within the organisational context, feedback was seen as a variable responsible of facilitating tasks accomplishment. The current participants emphasised the importance of both internal (e.g. job itself) and external (e.g. agents) feedback. The result is supported by empirical research. For instance, Sawyer (1992) reported that feedback from both supervisors and co-workers is very helpful especially in
reducing role ambiguity. Internal feedback (from the job itself) becomes more visible in the modern workplace because of the prevalence of electronic performance mentoring (EPM) in many modern workplaces such as call centres (Parker et al, 2001). Therefore, previous research has addressed this variable as part of the task characteristics that help employees to deliver their tasks efficiently. This classical characteristic is a salient factor within modern settings.

Although feedback has been discussed since early job design research (e.g. Turner and Lawrence, 1965), feedback was addressed by just few job design approaches and neglected by many others. Four out of the eight job design approaches mentioned earlier in Chapter 2 included feedback as part of the core job characteristics (JCM, AT, ST, VM; see Table 2.1 for a comparison). Specifically, the Hackman & Oldham’s Job Characteristics Model addressed this job feature as one of the important aspects in employees’ intrinsic motivation. Feedback counted for one third of the motivating potential score (MPS) formula because it can satisfy employee needs of the knowledge of the actual results of the work activity (Hackman & Oldham, 1976). This may lead to higher work productivity, satisfaction and intrinsic motivation. Furthermore, the Vitamin Model (Warr, 1987) has addressed the multi resources feedback (i.e. task feedback, client feedback, information about the future, low role ambiguity etc.). This characteristic along with nine other variables were believed to enhance employees’ wellbeing and improve their mental health. Finally, The German Action Theory and Socio-technical approach promoted feedback as one of the highly recommended characteristics and indicated that work should provide both positive and negative feedback (Cherns, 1976; Hacker, 1986).
Research has indicated that feedback effectiveness is dependent on three dimensions: the source of feedback, the recipient, the message (Ilgen et al., 1979). Regarding the feedback source, workers generally receive their feedback from two different sources: from their supervisors and from their colleagues. Research has indicated that feedback from external agents is also important and very effective (Hackman and Oldham, 1980; Warr, 2002a). Communication psychology and goal setting theory have advocated some principles that should be addressed when sending feedback such as the message should be specific, direct, immediate, regular, positive and negative, and non-threatening (Ilgen et al, 1979).

To conclude, work feedback was addressed as an important aspect by the current research participants. Previous job design research supports the importance of this aspect to task completion especially the multi-source feedback. Many behavioural and psychological gains were reported especially to employees’ productivity and wellbeing.

4.4.1.4 Training adequacy

A job content characteristic that represents the extent to which the job provides employees with training chances to develop new skills or existing talents.

This aspect was almost neglected by existing job design research. ‘Training adequacy’ or the amount of fit between work demand and employees abilities was perceived by the participants of this study as an essential aspect in their jobs or the ones that they wish to hold. This characteristic is an important aspect in the modern workplace because it seems that work is considered as something that should fit
neatly with employees’ abilities or qualifications. Employees nowadays, as well as in past times, require tasks that fit their interests and abilities in which they receive adequate training that enables them to develop new skills or improve their existing talents.

Although this dimension was neglected in the JCM and other job design theories, it is well documented in Person-Job Fit research (e.g. Dawis & Lofquist, 1984; Locke, 1976; Edwards, 1996). Reviewing the literature has indicated that there are two basic forms of “job fit”; the first one involving the correspondence between employee desire and job supplies, and the second aspect involving the correspondence between employee abilities and job demands. According to Edwards (1991), employee desire and job supplies fit are essential constructs of job satisfaction, job stress, motivation and vocational choice while fit between abilities and demands are essential constructs in active reactions such as learning, performance, absenteeism, retention and promotion.

This characteristic is a result of modern workplace practices and a move towards knowledge-oriented work. As an example, employees working in organisations that applied Just in Time or Total Quality Management systems frequently face new tasks and demands (Dellbredge, 2003). Therefore, it is very normal for an employee working in such a system to arrive to his or her work in the morning and find that he or she has a new tasks and responsibilities. Employees who perceive their abilities are below such new tasks or duties would affect their self efficacy and become less capable in delivering their tasks efficiently. This can develop other behavioural and psychological problems such as absenteeism, turnover, and emotional exhaustion or
anxiety (Dawis & Lofquist, 1984). Training adequacy and matching between abilities and job tasks was always seen as an important source of person job fit.

Training and learning opportunities have been addressed since the early steps of job design research. As we illustrated in Table 2.1, hygiene-motivation theory (Herzberg et al, 1959) addressed this dimension as part of the motivators (i.e. possibility of growth and advancement). Herzberg (1968) explained that this task-related dimension created a happy feeling and good attitude within the workers and enhance productivity. The JCM addressed this factor but more as a moderator, as this dimension can be found in their definition of the psychological state of knowledge that was seen as a reaction to regular feedback (Hackman and Oldham, 1976). Action Theory emphasised that jobs should require people to be active and provide employees with opportunities to improve their talents (i.e. continuous training and development). Frese and Zapf (1994) indicated that one major concept in the AT that jobs should be oriented to development and should enhance personality.

However, theorists indicate that training leads to more learning and hence, to expert employees. Expertise can provide many benefits both for individuals and organisations. At organisational level, organisations who invest in training programmes may experience fast development and increased effectiveness because knowledgeable employees work more effectively and usually show a superior and more organised knowledge-base, perceive and recall larger meaningful patterns in their domain, search and locate information more effectively, are better at anticipating future developments and potential faults, make more sophisticated plans, work independently, take responsibility, and are better organisers (Warr, 2002b).
Additionally, personal benefits may be gained by acquiring knowledge. As Easterby-Smith et al (1999) have indicated, people who receive training may feel they have an increased amount of information (declarative knowledge) and acquire new skills or develop existing ones. Many individual benefits might be gained from the acquisition of new information or skills. Expertise, however, is one of these benefits, expert employees usually have more self satisfaction and tend to be highly respected and normally occupy senior positions. Furthermore, increased employability and increased income tend to be related to knowledge and expertise. Other less tangible individual outcomes include an increase in self efficacy and self-actualisation. Holman (2002) reported that training adequacy (and other job design factors) at the call centres has vital role and influence positively job satisfaction and reduce job-related anxiety and depression.

In summary, results from the current study indicate that training adequacy or the fit between abilities and job demands is an important aspect in contemporary jobs. The JCM and other job design models have overlooked this dimension in job design research which has shown that organisations who adopt continuous training programmes were more effective employees with various talents and higher self efficacy which in turn reflects on the organisation’s success.

The previous four sections have discussed the critical job content characteristics as ranked by the participants and have indicated that these characteristics represent the tangible features of the tasks. Most of these features were addressed by existing job design theories. In the present study the participant’s reemphasised their importance in contemporary jobs but in a wider perspective as discussed earlier. In the following sections the job context characteristics will be discussed that, to some extent, can be
considered ‘new’ job dimensions and need to be addressed in job design research. These sections will discuss why they are important to job design research.

4.4.1.5 Supportive supervision:

A job context characteristic that represents the extent to which an employee receives encouragement, respect and support for advancement from his/her supervisor/manager.

The participants of the study ranked the supervisors’ attitude as one of the important job characteristics. This characteristic attained the highest weight of 4.44 out of 5 (i.e. mean average of the clustered items) and explained 4.89% of the total variance. It seems that employees ask for supervisors who are supportive, show competency in work related knowledge, show concern for employees' feelings and needs, and encourage them to develop their skills. The style of supervision is a salient characteristic of the organizational context that is often considered a potent determinant of employee motivation at work (Amabile & Gryskiewicz, 1989; Deci & Ryan, 1987; Kottke & Sharafinski, 1988).

This characteristic was considered as part of the ‘job context’ characteristics where tasks are executed. This characteristic is not totally new to work design principles and has been addressed since the early steps of job design research. Yet, this job characteristic does not receive much attention from the main job design theories or those having implications for job design. As indicated in chapter one, just three out of eight theories addressed supportive supervision as one of their core dimensions (i.e. HMT, AT, and VM). The JCM did not include this characteristic although it was one of the important dimensions in Turner and Lowerance’s (1965) study that is
considered the backbone study for the development of the JCM. Perhaps, Hackman and Oldham excluded this dimension because they thought that supervision is not part of the characteristics that can be ‘designed’. However, if this is true, this is not supported by recent research (e.g. action theory, the expanded demand-control-support model) in which they indicated that jobs can be regulated and managers can be trained for providing support to their subordinates. The current study strongly addresses this dimension and provides further evidence of the importance of such a characteristic in today’s job design.

In the current study, the nature of the items that are categorised under this dimension seem to be more directed at the supervision’s attitudes. The participants tend to care about the supervisor as a person, rather than the management style he or she implements for delivering work tasks. These results are not unexpected; most of us recognise that supervisors do not have much affect on the way of employee’s work is organised as it is usually a part of the general policy of the organisation. Therefore, most employees do not expect supervisors to change the work system to suit each employee. Yet, most of us have many expectations when it comes to the supervisor’s attitudes or knowledge as these are part of the characteristics that supervisors can control.

Supervision attitudes are always considered one of the aspects that stimulate employees to get involved with their daily tasks and enhance employees’ intrinsic motivation (Deci et al., 1989; Deci & Ryan, 1985). When supervisors are controlling or hostile, they closely monitor employee behaviour, make decisions without employee involvement, provide feedback in a controlling manner, and generally pressure the employee to think, feel, or behave in certain ways (Deci et al., 1989).
Supervision that is experienced as controlling undermines intrinsic motivation and shifts an employee's focus of attention away from work activities and toward external concerns (Deci & Ryan, 1987). This reduction in intrinsic motivation is then expected to lower work involvement as well as raising anxiety and uncomfortable feelings. Demerouti et al (2001) demonstrated how managerial practices have effects on employees’ emotional exhaustion and disengagement from work tasks.

Furthermore, the support from the supervisor seems to have a direct effect on organisational effectiveness. West (1989) demonstrated that health care professionals were most creative when their supervisors provided high levels of social support. Andrews et al (1967) showed that teams of scientists produced the most creative outcomes when their supervisors provided substantial freedom at work and many opportunities to influence important decisions. Amabile and Gryskiewicz (1989) found significant relations between employee ratings of supervisory encouragement and creativity. Lastly, Scott and Bruce (1994) demonstrated that professional employees who reported high-quality relationships with their supervisors (relationships characterized by support, trust, and autonomy) were described by those supervisors as more likely to generate creative ideas.

In conclusion, the current study has provided further evidence of the importance of supervisors’ attitudes and practices in creating a friendly, cooperative and high effective work environment. The literature has indicated that management practices and attitudes are responsible for an employee’s involvement, effectiveness, feeling of anxiety, work related stress, disengagement from work tasks, and feeling of burnout.
4.4.1.6 Supportive co-workers climate:

A job context characteristic that represents the extent to which the job enables social contact with work colleagues, ask help from each other, and back each other up when necessary.

The current study’s participants strongly addressed another ‘job context’ aspect and emphasised the importance of holding jobs that have friendly colleagues with whom they can socialise with, and support them when needed. The opportunity for social support and social contact that were presented in study one (Table 3.1) were factorised into a single dimension that represents the preference for a supportive environment between colleagues. This job characteristic is not a new aspect to job design research as it was seriously addressed in early job design studies such as those are conducted by Herzberg et al. (1959) and Turner and Lawrence (1965). Apart from the JCM, most of the job design models addressed this characteristic as an essential dimension in every job, especially the revised demand-control model (Karasek and Theorell, 1990) (see table 2.1 for a comparison). Many researchers indicated that the social aspect of the work remains an important dimension in today’s work context (Houkes et al., 2003; Warr, 2002a; Parker et al. 2001, Parker & Wall, 1998). This study, however, provides further empirical evidence for such an important job context aspect that improves work quality and enriches work context.

The emphasis on this dimension in today’s work context raises concerns about the emotional demands of work that are brought to the fore by the growth of more isolated and virtual workplaces such as teleworking (Parker et al, 2001). Previous findings indicate that social support was necessary whether the individual worked as part of a team or not (Houkes et al., 2003; Warr, 2002a, Parker & Wall, 1998;
Karasek and Theorell, 1990. Social support can come in the form of sharing the events of the day with colleagues both formally (in briefing, through supervision) and informally. Additionally, findings indicated that social contact at the workplace would improve employees' motivation and wellbeing as well as performance. For example, Johnson and Hall (1988) reported that for women, social support may be a more important predictor of cardiovascular disease prevalence than work control. Moreover, Fletcher & Jones (1993) reported that support accounted for more of the variance in men's anxiety than demand and control together. Houkes et al. (2003) indicated that regardless of how much variety or controllability employees have in their jobs they express their dissatisfaction if they have tense relationships with their supervisors or co-workers.

As indicated in the previous section, job context factors were excluded because of the general belief that such factors cannot be designed or structured in the same way control or feedback. However, this has proven to be incorrect as job context factors can also be designed. For instance, research has indicated that some practices would contribute to the quality of social contact between colleagues. If the organisation and supervisors promote a friendly cooperative atmosphere (not competitive), fairness (i.e. equal opportunities) and trust between colleagues, the employees' motivation, satisfaction and wellbeing will be higher (for overview see Rhoades and Eisenberger, 2002). Additionally, the ergonomic design of the workplace can play a role in facilitating social contact and can affect the degree of social contact that employees have. Sprigg, Parker & Jackson (1996) reported that in a wire-drawing company, social contact between team members and hence, the ability to operate as a team was severely inhabited by the layout of machinery and the long distance between team members.
members. However, this issue will be returned to in the 7th chapter when the implications of this research to job redesign are discussed.

In summary, the participants of the current study strongly addressed the importance of having a supportive social co-workers climate. Previous research addressed this as an important aspect of workplace quality. However, the concepts of social support have been relatively underrepresented in job design research, especially by the exclusion of such an important aspect from the JCM dimensions. However, with the results from the current study and the recent inclusion of social support as a key job feature within the demand-control model of strain (Karasek & Theorell, 1990) and Warr's vitamin model (Warr, 1987; 2002a), this is likely to change.

4.4.1.7 Work-life balance:

*A job context characteristic that represents the degree to which the job provides balance between work demands and employee personal life in which work does not interfere with family life (work-to-family conflict) and family life does not interfere with work (family-to-work conflict).*

The literature has indicated that work-life balance is a combination between the work-home and home-work conflict (e.g. Clark, 2000; Frone, 2000; Kossek and Ozeki, 1998). Therefore, the second factor ‘work-home conflict’ and the twelfth factor ‘home-work conflict’ were combined in a single characteristic resembling the concept of work-life balance.

Greenhaus & Beutell (1985) indicated that the conflict between work and family occurs when one's efforts to fulfil work role demands interfere with one's ability to
fulfil family demands and vice versa. However, this definition of work–family conflict implies a bidirectional relationship between work and family life. In other words, work can interfere with family life (work-to-family conflict) and family life can interfere with work (family-to-work conflict; e.g., Frone et al., 1992; Frone, Yardley, & Markel, 1997; MacEwan & Barling, 1994).

Although this dimension is almost neglected in the job design literature, this study found work-life balance to be an important dimension which is loaded on two distinct factors and together explained more than 10% of the total variance. These indicators are strong enough to list this dimension as one of the core job design characteristics. Research from psychological contract theory indicates that work-home conflict is part of the work hygiene variables and is a very important aspect in promoting work quality and fairness between subordinates and has a major impact on individual performance (Robinson, 1996; Guzzo et al, 1994).

The focus on work-life balance in the modern workplace is a reaction to the developments occurring in modern workplace context: such as: the substantial increase in the number of women in the work place, elderly people, single parents, traffic jams, increased meetings abroad, different shifts, extended work days, the 24 hour global economy etc. Such variables increase the opportunity for work-home conflict and home-work conflict and cause inconvenience problems and reduce job involvement (Geurts & Demerouti, 2003; Parker et al, 2001). However, it can be argued that this dimension is not a factor in the job as it is part of the individual differences variables that cannot be controlled by the employing organisation. However, the employee is still a part of the job and his/her personal life should be taken into account. Therefore, in many modern organisations, some programmes were
‘designed’ to reduce the conflict between work and life. Many organisations nowadays provide nursery facilities, flexible shift times, company transportation or even accommodation to improve work-life balance as much as possible.

Conflict between work and home affects the perception of work quality which in turn affects employees’ mental health that might lead to poor performance. Therefore, most of the research in occupational stress indicated that both work-to-family conflict and family-to-work conflict have more impact on employees’ wellbeing and mental health (e.g. Hughes and Galinsky, 1994; Frone et al., 1996; MacEwen and Barling, 1994). However, recent research has begun to focus on the main-effect relations of both types of work–family conflict to employees’ productivity (Clark, 2000).

Nevertheless, work-life balance has almost been neglected in job design research; much of the evidence comes from the absence of such an important variable from the main job design approaches characteristics such as the JCM. Parker and Wall (1998) noted that this aspect of work has not been visible in work design research but that is likely to be relevant to modern work practices (e.g. teleworking). The authors explained that working at home offers benefits such as more flexibility and freedom. On the other hand, there is also potential risk of more conflict between home and work (e.g. interruption from children). Additionally, reduced social contact and support from peers is a further possible outcome of working at home. However, this is improving in Warr’s Vitamin Model (1987; 2002a). Work home conflict was considered a sub-dimension and part of the ‘externally generated goals’ characteristic. The author indicates that such a feature has a linear effect in which the more balanced it is, the more positive results will be.
In summary, the evidence previously reviewed suggests two conclusions. First, there is growing evidence that both types of work ↔ family conflict are positively related to poor employees' wellbeing and poor performance. Secondly, this job feature has been neglected in job design research and it is the time to include it as a distinct job characteristic.

4.4.1.8 Financial rewards:

*A job context characteristic that represents the degree of perceived fairness of compensations and chances to earn extra money for extra responsibilities.*

Participants emphasised holding jobs that provide satisfactory financial rewards such as good payment, chances to earn extra money and benefits packages (i.e. pension, paid sick leave, holidays etc).

The financial rewards aspect has been frequently addressed in early job design research but was overlooked in later theories. Salary was addressed by Herzberg et al (1959) in his Hygiene-Motivation Theory and he considered it as one of the job ‘hygiene’ factors that increase satisfaction. The later theories (i.e. JCM, MOS, AT, ST) have neglected this aspect. However, this has recently change after the effort-reward imbalance model strongly addressed this aspect as part of the organisational rewards axis (Siegrist, 1996). This theory has become very popular recently with growing research indicating that the interaction between organisational rewards and employees’ efforts was linked with many aspects of mental and physical health especially cardiovascular disease (Kompier, 2003).
Research has indicated that a positive relationship between standard of living and mental health has been recorded in many samples (Warr, 1987). Unsurprisingly, people with higher incomes are more satisfied with their pay or perceived fairness whereas people who are living in very difficult financial circumstances exhibit considerable mental ill-health (Warr, 1996).

Much of the evidence about the importance of financial rewards comes from Perceived Organisational Support (POS) research (e.g. Rhoades & Eisenberger, 2002, Eisenberger et al., 1990). One major aspect of this theory is the perceived organisational rewards in terms of pay and promotions. Many studies have reported that positive perception of the organisational scheme is linked to organisational commitment, productivity, job related affect, job involvement and strain. In addition psychological contract research stresses the importance of payment as part of the hygiene variables which formulate the psychological contract between employees and their employing organisation. Research showed that employees who perceived that their hygiene variables as being violated (e.g. not paid enough in comparison with their efforts) affect their trust in organisation, involvement and their mental health (Robinson and Rousseau, 1994; Guest and Conway, 2003).

Furthermore, research from Profit-Related Pay (PRP) indicates that companies who adopt the PRP system (employees are paid according to the profitability of the companies that employ them) may attain many organisational and individual benefits. Clark (1996) indicates that such a system may provide an incentive for employees to be more productive, promote employment stability and promote co-operation at work. The author claims that although profit-related pay is, by definition, limited to for-profit companies, the incentive argument applies to performance-related pay more
generally, which is common in the public and non-profit sectors as well as in the private sector.

Generally speaking, middle managers consider money a powerful motivator especially with the average worker. In contrast, some voices argue that money does have a short-term effect and cannot work alone without including other rewarding variables (e.g. promotions, recognition). Money as a motivator applies only to people who do not have it (Furnham, 1996). By contrast the people who have control over the purse strings may not regard money as very relevant. Therefore, Warr (1996) suggests that money as a job characteristic has a curvilinear effect on job stress and applies only for those who have low levels of income because people will always grumble about their pay and its comparability with others.

In conclusion, this study suggests that good payment and a fair benefits package are highly important job design aspects. Research has indicated that although money is a good motivator it has a short term effect and applies only to low level income jobs. Accordingly, some researchers suggest that the balance between efforts and financial rewards is more important. However, the current findings have a wider perspective of rewarding. Financial rewards are accompanied with recognition. These factors were identified in organisational research as factors resembling the organisational rewards scheme (e.g. Siegrist, 1996). The importance of job recognition in contemporary job will be discussed in the next section.
4.4.1.9 Recognition:

A job context characteristic that represents the degree to which the employees receive appreciation for their knowledge, skills and experience within their profession from the job itself, colleagues, supervisors, and customers.

This characteristic was addressed frequently by current study participants and considered as an important aspect to their work life quality. This gives a strong indication that job holders wanted to be recognised for their knowledge, skills and experience within their profession. Recognition could come from the organisation (colleagues, supervisors) or from outside (i.e. customers). This result is compatible with previous research in which appreciation compliments and professional respect were always considered a good way of motivating employees especially the professionals and experts (Mackenna, 2000). However, from the current study results it seems that such a demand becomes a vital requirement regardless of job type or level.

Some of the job design models have addressed this characteristic since the early development of job enrichment approaches. For instance, the Hygiene-Motivation theory (Herzberg et al, 1959) stressed the importance of recognition as one of the motivator variables that every job should have. Additionally, this job characteristic overlaps with the tenth dimension of the vitamin model “valued social position” and to some extent overlaps with Hackman and Oldhams’ (1976) “task significance”.

This contextual aspect might look difficult to ‘design’ as it is not part of the job content factors. However, a close look indicates that this is not that difficult. For instance, Hackman and Oldham (1980) indicated that opening communication channels between employees and agents (the agent can be internal e.g. colleague or
supervisor) will increase the feedback intensity, and hence, appreciation comments and complements might be increased. Giving employees the responsibility for training new members must signify to employees that the organisation believes that they are knowledgeable and their contribution is valued. Furthermore, many organisations nowadays are introducing acknowledgment programmes to increase the feeling of appreciation and seniority among their employees such as employee of the month scheme, paid holidays etc.

The research comes from effort-rewards balance stressed the importance of recognition and valued member in employees' performance and mental health. Siegrist (1996) has indicated that the rewards axis consists of three aspects: payment, recognition and job security. This theory has become popular in job design research because it emphasises the importance of hygiene variables (payment and recognition) in creating healthy and productive workplace environment.

Much of the contemporary research in organisational psychology has addressed this important dimension. For instance, Sawyer (1992) reported that recognition of performance was related to goal clarity, satisfaction and the search for new job behaviour. Eisenberger et al. (1990) reported a link between employees' perceptions of being valued and high performance, low absenteeism, and positive employee wellbeing.

In addition, many studies provided empirical evidence for the relationship between employee recognition and organisational commitment (e.g. Gaertner & Nollen, 1989; Rhoades & Eisenberger, 2002). An explanation for this relationship comes from organisational support research. According to this theory, favourable opportunities for rewards convey a positive valuation of employees' contributions and thus, contribute
to perceived organisational support, which, in turn, increases organisational commitment (Eisenberger et al., 1990; Guzzo et al., 1994; Wayne et al., 1997).

In summary, the current study provides evidence for the importance of the employees’ recognition as a core job characteristic in today’s job design. These results correspond with previous research that listed many individual and organisational benefits attained from applying recognition especially for employee commitment and wellbeing.

4.4.1.10 Physical environment:

A job context characteristic that represents the degree to which the job provides employees with satisfactory physical working conditions in which the worksite has healthy features such as low noise, acceptable air temperatures and absence of safety hazards.

The final construct that has been addressed in the current study but is almost ignored by most of the previous job theories is the physical environment variable. This dimension is concerned with the ergonomic work design to ensure that work methods, layout, and machines are above certain standard level. Participants of the current study emphasise having a healthy physical working environment in which there are no safety hazards, good ventilation, suitable air temperatures and so forth. This characteristic has emerged from modern life demands and the growth of expectations for high life quality (especially for the developed world) that encourages employees to look for high standards in the workplace environment.
Action Theory addressed the role of physical environment in job redesign. The theory stresses that outside events that do not belong to the task, such as obstacles and interruptions (often stemming from poor work organisation) should be minimised. In addition, the job should provide adequate safety and job designers should insure that all job tasks are safe without risks or hazards (Frese and Zapf, 1994).

Research has showed that a high standard physical working environment does not necessarily affect work performance but certainly affects employees’ health, satisfaction and commitment. One of the classical findings in industrial psychology is that good work conditions (lighting, noise, heat, vibration) could play an important role in improving employees’ satisfaction (Dressell & Francis, 1987; Guzzo et al, 1994, Eisenberger et al, 1997). For instance, Dressell & Francis (1987) have found that improved design of office conditions enhance the satisfaction of employees. Furthermore, organisational support research and psychological contract theory showed that a healthy environment is a very important aspect in organisational commitment, productivity, and wellbeing (Robinson, 1996).

As has been indicated by Warr (1987), safety and good working conditions are important because environments, in general, need to protect people against physical threat and to provide an adequate level of security. Poor working conditions are expected to give rise to negative job related feelings. Therefore, the wellbeing of an employee may be affected in two ways. Firstly, through the carry-over of feelings from work to non-work environment (e.g. home-family conflict), and secondly through a job-induced deterioration in physical health having its own effect upon employees’ mental condition.
To summarise, the current results have revealed that good working conditions are an important aspect in the job that can be designed to ensure employees' health and safety. Poor working conditions have effects on physical health, mental health and employees' commitment which, in turn, may lead to poor performance and searching for new jobs behaviour. The physical environment has rarely been studied in job design research. However, results from Action Theory and Vitamin Model research, support the importance of these variables in today's work context.

In the previous ten sections, a detailed discussion of the critical job characteristics in contemporary jobs that were identified from the employee's perspective has been provided. The main conclusion of the above discussion is that job content (task) characteristics remain one of the important job aspects in modern jobs but not the only ones. The characteristics of the job context where the tasks are executed, are important as well. In the following section there is a general discussion of these characteristics and their implications for job design research.

4.4.2 General discussion

By merging some factors, the final list of the job characteristics consists of 10 job characteristics that were perceived as critical in contemporary jobs. Comparing these characteristics with Hackman and Oldham's Job Characteristics Model indicates that autonomy and feedback remain important in today's workplace. Task variety, task significance, and task identity as distinct characteristics have vanished. Task variety has merged with challenge characteristic while task significance and task identify could be seen as part of the recognition and control respectively. The latter results are consistent with empirical research in which they reported that task identity,
significance and variety are not separable aspects of jobs (Dunham et al., 1978; Fried and Ferris, 1986; Cordery and Serastos, 1993). In the present study, feedback and control were factorised into two distinct aspects which provide a further evidence of their importance in contemporary jobs.

Furthermore, the present results clearly show that the five characteristics of the JCM are definitely insufficient for diagnosing the quality of contemporary jobs as there are other important job characteristics which seem to be vital to employees’ work lives. The characteristics of support (supervision support and co-workers support), the intellectual challenging (cognitive demands and related concepts), physical environment, organisational rewards (recognition and payment), and work-life balance are vital aspects in contemporary jobs. These results suggest that job design nowadays is not a matter of job ‘content’ enrichment but it is also a job ‘context’ quality.

Furthermore, comparing the current job characteristic list with the one presented in Table 2.1 (the prominent characteristics in the main job design theories) indicate that the present list includes all the characteristics promoted by most of the existing job design theories. Therefore, this list can be considered as comprehensive and an improvement to job characteristics research because it addresses variables that were neglected by many of the theories such as support and work-life balance. Furthermore, the present list, to a great extent, overlaps with Warr’s Vitamin Model (VM) core job characteristics. All of the characteristics in the present list can be found, more or less, in the VM. However, the present list has advantages which were extracted empirically from the employee’s perspective while Warr’s list is based on literature review and personal judgment.
Based on these empirical results, it would be safe to claim that these characteristics represent the critical aspects in diagnosing work quality. The identification processes, the sample size, and the use of qualitative and quantitative methodologies, all of these provide support to the degree of importance of each of the identified characteristics. Additionally, the criticisms posed towards the identification processes of the JCM characteristics and their origin has been avoided in this study. As explained earlier, the identification processes of these characteristics were from the employee’s perspective in which qualitative (interviews and content analysis) and quantitative (checklist and factor analysis) techniques were applied in the identification process from data collected from around 500 employees working in various job types and occupational sectors. This constructional methodology is pioneering among existing job design theories. None of the existing job design theories have attempted to identify the core job characteristics empirically, from the employee’s perspective, using qualitative and quantitative methodologies. Therefore, it could be argued that these results give more realistic opinions and a deeper understanding of employees’ requirements or opinions in contemporary jobs.

Furthermore, as anticipated in the second chapter, identifying the job characteristics from the employee’s perspective helped in addressing other criticisms posed towards the dimensionality structure of the existing job characteristics, especially for those criticisms concerned with the lack of variables responsible for cognitive enrichment or job context quality. First, a close look at the extracted characteristics has indicated that they contain dimensions identified by literature as variables responsible for increasing the cognitive aspects of the job. Research has indicated that characteristics like intellectually challenging tasks, control, feedback, task-ability fit and social contact, management practices and recognition are crucial...
aspects that increase cognitive enrichment and loading jobs with complexity (e.g. Gottfredson, 1997). Job complexity literature suggests that dealing with people tends to be complex and that task variety, lack of intensive supervision, challenge, and training opportunities all contribute to complexity. Gottfredson (1997) has noted that complex jobs tend to be unstructured, entail much self direction, general responsibility, variety and change, attention to detail, and emphasise creative rather than routine activities. On the other hand, the more highly supervised, more repetitive and physical the job, the less cognitively complex it is. The current extracted characteristics have the potential to provide all these features especially with variables of intellectually challenging task, control, task-ability fit, and supportive friendly environment. For instance, research has shown that the quality of social contact between members has proven to increase job complexity because work group members learn from each other and therefore, task mastery becomes greater (Pearce and Ravlin, 1987). These results suggest that the current characteristics have the potential to diagnose complex occupations that the JCM failed to enrich (Kuk et al, 1999).

The second point is that the current characteristics contain six job contextual factors that have been acknowledged by employees as critical aspects for work quality. Absence of job contextual characteristics (e.g. social contact) was a major criticism of the JCM and other job design approaches (Parker and Wall, 1998; Parker et al, 2001; Guest & Conway, 2003). The participants of the current study emphasise the importance of the context of the job where tasks are executed such as social contact, supportive supervisors, recognition, payment, work-life balance and physical environment in diagnosing work quality. These results suggest that job design today was not seen only as a matter of task design but also a matter of contextual quality.
Contemporary research has indicated that such variables are important in many individual and organisational outcomes such as job satisfaction and trust in organisations (Robinson & Rousseau, 1994), performance and turnover (Robinson, 1996), as well as organisational commitment (Guzzo et al, 1994).

In conclusion, most of the current study characteristics have been acknowledged in past organisational behaviour research but none of the existing job design research has addressed the full list in a single list. As discussed earlier, these characteristics have the potential to promote many attitudinal and behavioural work outcomes including organisational commitment, motivation, learning, performance, and wellbeing, because they represent the ‘good’ job definition from the employee’s perspective. The implications of these results on job design research will be presented in the next section.

4.4.3 Implications for job design research

Reviewing job design literature indicates that the job characteristics were categorised either based on their role in job design or on the work outcomes they influence or on both of them together. For example, Hygiene-motivation theory (Herzberg et al, 1959) categorised the job characteristics based on the type of the characteristics and the outcomes they influence. The first category is the ‘motivators’ characteristics that influence work motivation. The second group is the job hygiene factors that influence work satisfaction. Vitamin Model (Warr, 2002a) categorised the characteristics based on the type of the relationship between the job characteristics and wellbeing. Therefore, there are characteristics that have linear relationships with mental health (e.g. autonomy) and characteristics that have curvilinear relationships
(e.g. payment). For the present characteristics, both ways are relevant in differentiating the type and the effect of job characteristics and their relationships with work outcomes. However, at this early stage of the research, the present job characteristics will be distinguished based on their type and the anticipated work outcomes that they influence. The relationships between characteristics and outcomes (linear or curvilinear) will be returned to in the 7th chapter as an implication for job redesign and an idea for further research. The latter type of categorisation requires further investigation which is not the interest of the current thesis.

Based on above discussion as well as the discussion presented in the second chapter, categorising these characteristics into two sub groups is suggested. The first group is the ‘job content characteristics’ that contains the tangible characteristics of job tasks and how these tasks are regulated, organised and maintained in order to deliver job duties or organisational requirement. These characteristics are: intellectually challenging tasks, control, feedback and training adequacy. The second group is the ‘job context characteristics’ group that contains the psychosocial features of the job circumstances where that tasks are executed such as the way tasks are supervised or the effect of tasks’ regulation in employee’s personal life. These characteristics are supportive supervisors, supportive co-workers climate, financial rewards, work-life balance, recognition, and physical environment. The two groups are displayed in Figure 4.1. This categorisation was seen as helpful in having initial distinction about the characteristics that would help employees to deliver their tasks from those characteristics that would help employees to be proud of their organisation and create a sense of mutual trust and comfort.
The ‘content’ characteristics are important for task completion or delivering task
duty effectively. For example, an employee who has substantial freedom in deciding
the work methods, tools and work pace will deliver job duties more effectively than
an employee whose work is tidily structured (Jackson et al, 1993). Furthermore,
employees who have stimulating tasks, regular feedback, and continuous training to
keep him/her updated in his/her filed, would be able to deliver work tasks effectively
in quantity and quality (e.g. Karasek et al, 1990, Hackman and Oldham, 1980; Frrese
and Zapf, 1994). On the other hand, we suggest that the job context factors are more
important in perceiving the job as a quality one but not necessarily important for task
performance or completion. Perhaps giving an example will illustrate the distinction
between the effect of job ‘content’ and ‘context’ factors. Some of the quotes indicated
by the participant in the first study may be useful here. A 33, female, Human
Resources manager stated:

"I have other team members working in other parts of the company... it's very
frustrating that you don't receive feedback about what they are doing in a daily
basis'.

Another participant stated:

"I resigned from my job recently because of the barriers in my job ... I get frustrated
at the end, I tried to change the situation but it was out of my control".

These quotes indicate clearly that the participants were frustrated because they lack
of control and regular feedback which were perceived as important aspects of
delivering their work duties. Similarly, job context factors were perceived as
important aspects for motivation and satisfaction, and here are some quotes that
support this notion:

"I feel satisfied when I receive the money at the end" 62, female, administrative
secretary
"The physical environment... that's important for the staff...one that homely but also one that's functional... and just generally having the whole environment conducive to safety... it's has huge impact on the staff that work there and people's mental health" 36, female, travel agent.

“I feel satisfied when the investigator says that my report helped in the right direction” 30, female, behavioural investigator advisor.

“The reason that I am motivated is because I work with people who you talk to every day” 41, female, food service assistant.

These states are similar to what has been reported in the literature. Empirical research has shown that perceiving the job as a quality one is important in building trust in organisation (Robinson and Rousseau, 1994), commitment (Guzzo et al, 1994) and employees wellbeing (e.g. Rhoades and Eisenberger, 2002; Holman, 2002). However, the above distinction shows how these factors work, this does not mean that job content and context factors are working separately, neither that the presence of each of them is sufficient to obtain gains in work performance or the employee’s wellbeing. It is clear that both aspects are complementary as far as the quality of a job is concerned.

On a different issue, some points should be taken into account when attempting field testing. Firstly, although all these variables are critical to job quality, they should be applied with flexibility. Some of these characteristics (or part of the concept) might not be suitable for some particular jobs. As an example, the physical environment variable might not be applicable for all job types. A job with less noise or temperature variation would not be applicable for an outside sales representative as there will be no way to control the noise or temperature coming from the street but safety procedure (e.g. equipments for personal safety) will be highly applicable in such an environment. Therefore, the flexibility here is about the instrumental definition of the job characteristics, which varies between jobs, but not excluding it from the job
redesign formula. A detailed discussion of the implications of these characteristics for job redesign will be presented in Chapter 7.

Another important point is the measurement that should be used to assess each of the job characteristics. Our proposition here is that there is no instrument applicable to all types of jobs. The job dimensions might be valid to all jobs, but the way they measured might be different. This is considered more effective than having one measure for all job types. As an example, one of the flaws of the Job Characteristics Model is that the instrument used to measure its dimensions (i.e. Job Diagnostic Survey JDS) was developed mainly using shop floor workers (Hackman and Oldham,
1975) and was applied to all job types. This had proven to be incorrect as the JDS failed to diagnose complex jobs such as those of physicians and pilots (Kuk et al, 1999). However, a single measure for all job types would not help job design development as the type of tasks or organisational climate differ between organisations. For instance, feedback for shop floor workers would be different from other job types, such as customer services representatives. Feedback from agents for the latter job would be highly valuable while with assembly lines, feedback from the job itself and supervisors would be more important. This means that a particular scale for each jobs group should be accommodated to reflect job description and available resources within the general concept of the critical job characteristics. In practical terms, this calls for an approach that focuses on a thorough diagnosis of the work context prior to any job design research.

4.4.4 Strengths and limitations

In the general discussion some of the strengths of the present research were highlighted. The characteristics identified in the present research have empirical evidence to support the fact that they are the critical job characteristics in contemporary jobs. Previous job design theories developers identified the critical characteristics based on literature review and personal judgment. In addition, this is one of the rare studies that has addressed the employee’s opinion in the identification process, which was a criticism which characterised existing job design theories in general.

Another strength of the present study is the content of the results. The present study expanded the narrow focus of existing job design research in which they
focussed on ‘task’ enrichment and neglected the ‘job context’ factors. Six ‘job context’ characteristic were identified here that were perceived as important to employees work life quality. Although the job content features were addressed in existing job design research, we reemphasised them in a wider perspective (e.g. the narrow focus of feedback from the job itself to include agent feedback). The present study, however, provided empirical evidence for the importance of the ‘job context’ characteristics that where overlooked in job design research and yet, it is now time to address them seriously in job design research.

Despite these strengths, there are some limitations that should be taken into account when generalising these findings. The first limitation is due to the sampling procedure. The sample was cross sectional and did not include all job types or levels. In addition, some sampling variables were not controlled, such as skilled versus unskilled jobs, ethnic variables etc.

Furthermore, the methodology of extracting job characteristics may have had some limitations. Firstly, the features that were excluded should be accepted with caution. Although there are logical and statistical justifications behind the exclusion, some of the excluded features where close to the cut off point (51%). Thus, some items might be important but they were excluded because of the statistical techniques applied in this study (e.g. team work). Therefore, it is worth investigating these items using other samples or job types.

Secondly, some of factors should be taken with caution. Some factors contained homogeneous items with high internal consistency indicated by Cronbach’s alpha (e.g. intellectually challenging tasks, recognition etc.). Other factors were less homogeneous and with low internal consistency (e.g. home work conflict, decision
latitude, autonomy). Consequently, some of the characteristics were not consistent with all items in the dimension. Although the factor label reflects the most visible items in the dimension (i.e. items that have the highest loadings), some items were excluded from the definition (e.g. job security item in dimension 12 in Table 4.2). Therefore, any future implementation of this list should be taken with these limitations in mind.

4.5 CONCLUSION

The aim of the study was to distinguish the important job features (extracted qualitatively in study one) from the less important ones using quantitative techniques and large size sample. The second aim was to structure the important job features into broader dimensions. As a result, ten job characteristics were identified that were perceived by employees as critical aspects in contemporary jobs. Perhaps the main conclusion to be derived from the current results is that identifying job characteristics from the employee’s perspective has proven to reflect better understanding of the requirements of contemporary jobs, as well as solving the problem of adopting particular job characteristics because of the backgrounds of the researchers. In addition, this methodology addressed some criticisms posted to some of the existing job design approaches such as the lack of variables responsible for cognitive and contextual enrichment.

The second important implication is that job enrichment is no longer a matter of job content enrichment in which tasks were merely ‘loaded’ with control or variety. Improving job context factors is seen as having a vital role and work in parallel with job content factors in producing gains in work outcomes. From the current study
results, as well as previous findings, it could be indicated that some of the job contextual aspects are more critical to employees than the job content factors such as control or feedback. For instance, 95.7% of the current sample indicated that it is very important to them to have a job with social contact (item 22 in the Table 3.1) while just 65.5% of the sample indicated that having a job that offers decision latitude (item 39 in Table 3.1) is an important job aspect. These responses are compatible with previous findings in which Fletcher & Jones (1993) indicated that job contextual factors are critical and reported that support accounted for more of the variance in men’s anxiety than demands and control together. Moreover, Johnson & Hall (1988) found indications that, for women, social support may be a more important predictor of cardiovascular disease relevance than work control.

As will be discussed in detail in Chapter 7, this study challenges the popular belief of the inapplicability of designing job context factors. It is argued that the job context factors (physical, individual, and social variables) can be designed in the same way control and feedback. Designing job contextual factors was overlooked in job design research. This study hopes to be a catalyst to address job context factors more seriously in job design research.

4.6 FURTHER DIRECTIONS

The overarching aim of the present research is to investigate how work is designed within modern jobs, and the consequences of these designs on employee wellbeing and productivity. Bearing in mind that the critical job characteristics in contemporary jobs have been identified, the next step is to develop these characteristics into a job design model that would enhance individual work performance and employee’s
wellbeing. Therefore, the next chapter will be dedicated to describing a theoretical trial to link the extracted job characteristics list identified in this study with relevant work outcomes and mediating variables.
Chapter 5

DESIGNING JOBS TO PROMOTE WORK PERFORMANCE AND EMPLOYEE'S WELLBEING

5.1 INTRODUCTION

In this chapter, we will address the broader aim of this research which is to put forward and examine the critical job characteristics identified in the early chapter in order to develop them into a job design model that is appropriate to recent changes occurring within the modern workplace context. The overarching aim is to investigate how work is designed within modern jobs, and the consequences of these designs on employee wellbeing and productivity. This includes outlining the narrow focus of existing job design models, as well as putting forward a job design model that consider wider issues and extension to job design research.

5.1.1 Job design research and theory: a narrow focus

Chapter 2 of the present research contains a description of job design research. We indicated that job design research is concerned with investigating the premise that more complex jobs (e.g. vertical enlargement) with greater job control over work pace and methods improve employees' quality of working life and their productivity. The early job design research focused on investigating the negative effects of the Taylorised jobs (simplified) on people's behaviour and fatigue. Over time, job design research has become more theoretical and started becoming proactive in which
recommendations for ‘good’ jobs were made. This included identifying the critical job characteristics responsible for improving employees’ work life quality. Different plural and approaches were developed such as the Hygiene-Motivation theory, the Job Characteristic Model, Action Theory, Socio-Technical approach, Demand-control model of strain and the Vitamin Model. Although there are overlapping concepts between these approaches, each of them provided a different prescription for the ‘good’ job.

As indicated on different occasions, the major drawback with these models is their narrowness, which is a problem that characterises job design research in general. For instance, the JCM focused on job enlargement and the hypothesis that jobs with certain ‘task’ characteristics such as high autonomy and variety, lead to motivated workers who perform better, are less absent, and who are more satisfied with their work than employees in simplified jobs. However, ‘job context’ factors such as managerial practices, work-life balance, physical environment etc. were generally overlooked in job design research.

Furthermore, because such theories were a reaction to overcome the negative outcomes of simplified jobs, the job design research has tended to focus on motivational outcomes and mechanisms such as people’s ‘affective’ reactions to jobs e.g. satisfaction. ‘Active’ outcomes (impacts that involve behaviours) such as absenteeism were included occasionally and more rarely performance. The ‘reactive’ outcomes (impacts that occur at the cognitive level and do not require a motivational state) such as development and learning on the job have received little attention either as outcome variables or as a mechanism that facilitate work performance. As a result, the job design research, and the JCM in particular, tended to regard people as passive
'reactors' to job redesign. In reality, this is not the case as people are 'active' who change in responses to how jobs are structured or regulated. Action Theory suggests that people develop new strategies according to the work system applied. For example, enhanced job control allows people to adjust their work demands and requirements. This also facilitates the development of skills, knowledge and orientations needed for effective performance. In addition, a proactive personality will be an outcome of job design rather than an input in the sense that it is believed that work enhances personality (Hacker, 1986).

Bearing in mind that we have already extended the critical job characteristics from the narrow focus on enriching 'job content' (task) factors to include the 'job context' factors, the next step is to expand another part of job design research which is the mechanisms that explain how job design lead to work outcomes. The suggestion includes expanding the mechanisms that explain how job redesign leads to work outcomes, from the narrow focus of motivational mechanisms to include cognitive ones. Cognitive mechanisms regard employees as proactive recipients, who adjust according to work systems and demands to enhance their personality, knowledge, abilities and attitudes. This was seen by many job design commentators as better understanding how job design enhances work performance and employee's wellbeing (e.g. Parker et al, 2001; Holman and Wall, 2002; Warr, 2002b).

Consequently, the purpose of the current (and final) study is to develop the critical job characteristics identified earlier into a job design model. To achieve this aim, the current study consists of two steps. The first step is a theoretical trial to formulate a job design model. This trial explains our suggestion of how job characteristics influence employee's wellbeing and work performance via both cognitive and
motivational mechanisms. The second step of the current study is empirical research that aims to examine the hypotheses of the model in the field using a cross sectional sample. The theoretical framework of the model will be presented in the current chapter while the next chapter will describe the empirical study.

5.2 TOWARDS AN EFFECTIVE JOB DESIGN MODEL

The model of job design, shown in Figure 5.1, distinguishes between three categories of variables, namely critical job characteristics, outcomes and mediator variables. The first part of the model is based on the empirical findings presented earlier in this research (i.e. the critical job characteristics) whereas the other parts are theoretical and based on literature review. We consider each of these categories next.

![Figure 5.1 a suggested job design model that enhances employee performance and wellbeing](image_url)
The first category is a list of job characteristics that were identified in the first two studies using qualitative and quantitative data collected from over 500 employees working in various job types. These two studies resulted in an expansion of the traditional range of work characteristics and included a wider range of aspects. As indicated earlier in the fourth chapter, many of the traditional job characteristics addressed by most of the previous theories remain highly relevant within the modern workplace context (e.g. cognitive demands, variety, control, feedback and recognition). Other characteristics have been addressed previously by one or two theories (e.g. training adequacy, supportive supervision, supportive co-workers and financial rewards) and some of them addressed for the first time in job design theories (e.g. work-life balance). Each of these characteristics were discussed in detail in Chapter 4. We concluded that these characteristics have strong empirical evidence that they represent the critical dimensions in diagnosing job quality in today's workplace.

The main result of the previous two studies is that job characteristics were expanded from the narrow focus of enriching job content (task) characteristics (the tangible characteristics of tasks and how they are regulated) to include the job contextual factors (the psychosocial features of the job circumstances where tasks are executed). Four 'job content' (task) characteristics were seen as important aspects in contemporary jobs. These characteristics are: intellectually challenging tasks, control, feedback and training adequacy. The second group is 'job context' characteristics which contains six factors. These characteristics are supportive supervisors, supportive co-workers climate, financial rewards, work-life balance, recognition, and
physical environment. We indicated also that task content characteristics facilitate
delivering job duties and task completion while context characteristics improve
employees' quality of working life. Based on the discussion presented in the fourth
chapter, the definition of each characteristic in both groups is provided in turn.

5.2.1.1 Job content characteristics

The tangible features of the tasks and how they are structured, organised and
maintained in order to deliver job duties or requirement effectively. These
characteristics are¹:

1. Intellectually challenging tasks: the degree to which the job provides mental
   stimulation and challenging tasks, which involve problem solving and using a
   variety of abilities, methods and skills.

2. Control: the degree to which the job provides substantial freedom and
   discretion to the individual to make decisions about their work processes or
   procedures.

3. Feedback: the degree to which an employee receives direct and clear
   information about the effectiveness of his or her performance by carrying out
   the work activities and from some other persons as well (such as co-workers
   or supervisors).

¹ The definitions of these characteristics are based on the discussion provided earlier in Chapter 4.
4. Training adequacy: the level of fit between task demands and the employee’s abilities in which the job provides chances for continuous training that helps them to master their tasks or develop new skills.

5.2.1.2 Job context characteristics

The psychosocial features of the job situations where tasks are executed and affect the quality of work life. These characteristics are:

1. Supportive supervision: the degree to which the job has supportive supervisors who show competency in work related knowledge, express concern for employees' feelings and needs, and encourage them to develop their skills.

2. Supportive co-workers climate: the degree to which the job promotes a cooperative working environment in which the colleagues can socialise together, ask help from each other, and back each other up when necessary.

3. Financial rewards: the degree to which the job provides fair financial remunerations in which the employees have a positive perception of the balance between their efforts and the payment they receive.

4. Work-life balance: the degree to which the job provides balance between work demands and employee personal life in which work does not interfere with family life (work-to-family conflict) and family life does not interfere with work (family-to-work conflict).

5. Recognition: the degree to which the employees receive appreciation for their knowledge, skills and experience within their profession from the job itself, colleagues, supervisors, and customers.
6. Physical environment: the degree to which the job provides employees with satisfactory physical working conditions and the worksite has healthy features such as low noise, acceptable air temperatures and absence of hazards.

In general, the main assumption here is that these 10 job characteristics can positively affect employee attitudes and behaviours at work and show ‘affective’ and ‘active’ reactions via cognitive and motivational mechanisms. These relations will be discussed in detail in turn.

5.2.2 Job redesign outcomes

As we indicated in the introduction, most job design theories assume that enhanced job design such as more control, feedback, support etc. creates opportunities for considerable self direction, learning and personal accomplishment at work (Karasek and Theorell, 1990; Hackman and Oldham, 1976). Therefore, as a result of job redesign, changes may occur that are more dynamic, developmental and proactive. Hackman and Oldham’s JCM assumes that enhanced job design makes people want to expend more effort and produce higher quality work. The authors acknowledged that this might also work the other way; that is, when people in enriched jobs perform well, they feel satisfied and motivated (Hackman and Oldham, 1980). The Social technical approach assumes that developing control in work groups will enable the ‘joint optimisation’ of both the technological and social aspects of work. A successful ‘joint optimisation’ will reflect on employee’s productivity, satisfaction and mental health (Cherns, 1976). Finally, Action Theory indicates that people working in enriched jobs, such as high control, allows employees to quickly and efficiently deal with increased information processing demands and therefore, facilitate the
development in skills, knowledge and orientations needed for effective performance and better mental health (Hacker, 1986). Therefore, there is logic and considerable empirical research for assuming that enhanced job design would lead to better performance, enhanced personality and better mental health.

In the next sections, we review evidence that suggests that our critical job characteristics list has the ability to positively influence work performance and employee wellbeing. We then propose two variables to mediate the relationship between the work factors and work outcomes to understand how enriched job design enhances performance and wellbeing. Finally, we outline our hypothesis.

5.2.1.1 Job characteristics and work performance

After we have identified the critical job characteristics in contemporary jobs, we hypothesise that these characteristics will produce improvements in work performance for two reasons. The first reason is that these characteristics provide all the sources required for highly performing individuals which were identified by recent work performance research. Specifically, the accumulation of research of work performance has conceptualised performance as a function of Motivation, Ability (knowledge and skills) and Opportunity (Blumberg and Pringles, 1982; Parker and Turner, 2002). This means that performance has three dimensions. One of them is the motivation to do job tasks; the second is having the ability, skills and knowledge. The third aspect is that jobs should provide the opportunity to utilise those skills and abilities (e.g. work conditions, tools, decision authority, co-workers, supervisors etc.).
The task and context characteristics addressed by the current model appear to have the potential to feed the three sources of individual work performance. The JCM already provided evidence that enhanced job ‘content’ design such as control, variety, and feedback increase the motivational potential of jobs that make people want to perform better (cf. Hackman and Oldham, 1980). Action Theory indicates that enhanced job design (e.g. high control, challenging tasks, communication quality between team members, and opportunity for advancement and personal development) improves employee’s ability (knowledge) and enhances their personality (Frese and Zapf, 1994). The socio-technical approach indicates that autonomous work groups provide employees with more chances to utilise their skills or to develop new ones in comparison with groups that have to work under close supervision (cf. Parker and Wall, 1998). All the above variables promoted by the three theories are addressed in the current job characteristics list (see Table 2.1 for comparison). Therefore, we argue that jobs that contain stimulating tasks, high control, adequate training, supportive supervision, cooperative co-workers, balance between work demand and personal life, recognised and valued members, a perceived balance of effort and financial rewards, healthy and physical environment- would increase the Motivation potential of the job, improve employees’ Ability (skill and knowledge) as well as provide the Opportunity to utilise their skills. According to Blumberg and Pringles (1982), such workplace environment that feed the three aspects of performance would definitely produce high performing employees.

The second reason is that the current characteristics (as discussed in Chapter 4) are increasing job complexity. Job complexity was seen as an important aspect in determining employees’ performance (cf. Kuk et al, 1999; Gottfredson, 1997; Parker and Wall, 1998). Gottfredson (1997) reported that job satisfaction and performance is
positively correlated with highly complex jobs. The author demonstrated how performance would be improved as a result of increasing task complexity. Task complexity is not just about having control, variety and feedback. The literature on job complexity suggests that dealing with people tends to be complex and that task variety, lack of intensive supervision (e.g. monitoring), change, training opportunities, and rewards system all increase job complexity and have the ability to convert simple jobs to complex ones. Furthermore, Gottfredson (1997) noted that jobs high in overall mental difficulty tend to be unstructured, entail much self direction, general responsibility, involve time pressure, variety and change, attention to detail, and emphasise creative rather than routine activities. A closer look at the job characteristics addressed in the present study indicates that they are indeed providing most of the factors required to increase job complexity. Therefore, we assume that these critical characteristics would positively affect work performance.

On a different issue, the work performance in this study was referred to as 'individual work performance'. The latter concept is an outcome of the recent framework provided by Parker and Turner (2002) in which they provide a conceptual framework for assessing performance. They indicated that with respect to performance, work design research often focuses on such outcomes as the number of products made or sales achieved, and sometimes on quality, but less often systematically assesses dimensions such as contextual performance e.g. helping co-workers (Borman & Motowidlo, 1993) or proactive performance (e.g. use of initiative). The latter types of outcomes have been given serious attention in the more

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2 This was a theoretical framework that aimed to provide agenda for the relationship between work design and individual work performance. The authors proposed a model for future research. The model proposed that enriched work design influences individual work performance via three key categories of psychological mechanisms, motivation, knowledge and skills, and opportunity. Another feature is that they proposed an expanded criterion of performance indicators to include task, contextual and proactive behaviours.
general performance literature only in the last decade or so. Therefore, Parker and Turner (2002) suggested that performance is multi-faceted and provides a new criterion (which we adopt in the current study) for assessing individual work performance. This criterion has three dimensions: task performance, contextual performance, and proactive performance. The definitions of these dimensions are as follows:

- **Task performance**: the degree of efficiency of delivering the core technical activities carried out by individuals within their jobs (i.e. task proficiency).

- **Contextual performance**: the level of activities that support the organisational, social, and psychological context within which the job is performed, such as helping others and being on time (i.e. punctuality).

- **Proactive performance**: the level of initiative activities expressed by the employee and includes pro behaviours like asking for challenging tasks and producing new work approaches (e.g. use of initiative).

In conclusion, the focus here was how job design is an antecedent to work performance. In particular, the proposal is that the critical job characteristics are acting as the axis of work performance (motivation, ability and opportunity). In addition, we acknowledged that work performance is multi-faceted (i.e. task, contextual and proactive). Accordingly, we assume that the current critical job characteristics are positively associated with the individual work performance.
5.2.1.2 Job characteristics and job-related wellbeing

All job design theories assumed that enriched jobs enhance people’s mental health. Different explanations were given. The JCM assumed that jobs with certain task characteristics such as high autonomy and variety lead to motivated workers who are satisfied with their work rather than employees in simplified jobs. Satisfaction was seen as part of the mental health necessary for employees (cf. Oldham, 1996). The Demand-control model of strain assumes that jobs with high demands and high control are ‘active jobs’ that stimulate learning. Active jobs reduce strain, boredom and improve mental health (cf. Jones and Fletcher, 2003). Action theory suggested that people develop new perspectives and cognitive strategies if they have a high quality job (high control, challenge, opportunity for social contact etc). The proposition is that more complex jobs may change people’s level of activity, their role values, and enhance their personality and their mental health (Hacker, 1986). The effort-reward imbalance model suggests that the perceived balance between efforts (e.g. job demands) and the compensations received for these efforts is vital for mental health. The imbalance between efforts and rewards negatively affects mental health and may cause cardiovascular diseases (Seigrest, 1996). Finally, the Vitamin Model assumes that a number of ‘task’ and ‘context’ characteristics will influence employee mental health. Jobs that are below a certain quality standard (i.e. missing particular characteristics or the characteristics are insufficiently present) are affecting the employees wellbeing and may lead to depression and anxiety. Some of these characteristics are having a linear effect on wellbeing (the higher level of enrichment is the higher of work impact e.g. financial rewards), while others are having a curvilinear effect (after the enrichment beyond a certain level there is no further improvement or even decrement e.g. control).
A main conclusion that can be drawn from the above theories is that the relationship between job design and wellbeing is well established in occupational health research. Accordingly, in this study we are investigating the role of the current job characteristics in reducing job related burnout (as an aspect of wellbeing). Burnout was chosen to reflect the employee’s wellbeing for two reasons. The first one is due to the nature of the sample used to test the current model (police officers and bank staff; see Chapter 6), which can be described as jobs that require regular contact with people. Such job requirements are vulnerable for burnout. Maslach (1982) defined burnout as a syndrome of emotional exhaustion, depersonalisation, and reduced personal accomplishment that can occur among people who work with the public. This definition restricts burnout to people who do human services such as social work, police force, health services and teaching.

The second reason is that emotional exhaustion (one aspect of burnout and similar to the strain aspect defined by Karasek (1979), and similar to work stress e.g. Warr, 2002a) is systematically increasing in today’s jobs. This increase is presented in a recent study among 21,500 European employees conducted by Merllie & Paoli (2000). The authors reported that of this sample, 27% report that ‘my health and safety is at risk because of my work’ and reported some common work-related health problems like stress (28%), and fatigue (23%). The authors indicated that these percentages are higher when compared with those of 1990 and 1995. This is not merely a European phenomenon, comparable figures are found in a representative sample of 3000 American employees (Bond et al., 1998). Twenty-six percent felt ‘emotionally drained from their work’, and the same proportion felt ‘burned out and

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3 Other researchers have different views. For example, Demerouti et al (2001) argued that burnout can be found in all occupational services and suggested a new model for burnout to suit all job types called the job demands-resources model of burnout.)
stressed by their work'. These figures indicate that emotional exhaustion becomes higher and higher in the current workplace and provides further evidence of the importance of addressing such aspects in job design research.

This study adopts a framework for the resources and indicators of burnout provided by the Demand-Resource Model of Burnout developed by Demerouti et al (2001). In this model, the authors characterised burnout in terms of emotional exhaustion and disengagement from work tasks. The definition of these dimensions (which we adopt in the current study) is as follows:

- Emotional exhaustion: the level of the consequence of intensive physical, affective, and cognitive strain resulting from work.

- Disengagement from work tasks: the level of distancing oneself from one’s work, and experiencing negative attitudes toward the work object, work content or one’s work in general.

However, there is a line of conceptual and empirical evidence that supports our assumption of the relationship between the current job characteristics and burnout. First, the task characteristics addressed in the current study are representing factors that would affect employee’s psychological health if the presence of these factors were diagnosed to be insufficient. I am arguing in the present study that jobs with poor task characteristics such as dull tasks, poor feedback, low control, and inadequate training have a negative effect and may cause emotional exhaustion and disengagement from work tasks. Similarly, high demands, a lot of control (high responsibility) and too feedback (monitoring) may cause burnout.
The other assumption is that burnout is not only caused by poor task characteristics but is also a matter of work quality. Much research indicated that poor job context factors are associated with work stress. For instance, in recent years, poor social support or social demands has become one of the important stressors in the workplace. Fletcher & Jones (1993) found that support accounted for more of the variance in men’s anxiety than demands and control together. Moreover, Johnson & Hall (1988) found indications that, for women, social support may be a more important predictor of cardiovascular disease relevance than work control. Many recent findings and theoretical reviews indicate that a healthy social and supportive environment at the workplace can improve employees’ wellbeing and reduce work related mental and physical disease (e.g. Houkes et al., 2003; Warr, 2002; Parker et al. 2001, Parker & Wall, 1998, Kompier, 1996). Moreover, research indicates that the following psychosocial variables are also found to have a notable role in affecting employees’ health: supportive supervision (Houkes et al, 2003); supportive co-workers (Warr, 2002a), poor organisational rewards (Siegrist, 1996) and physical environment, role clarity and role conflict (Parker and Wall, 1998). Such poor resources have been related to a wide range of withdrawal reactions such as depersonalisation and alienation (Bunnk et al, 1998).

Therefore, Demerouti et al (2001) with their demand-resources model of burnout expanded the sources of job related burnout and identified 11 work stressors influencing burnout and its sub dimensions of exhaustion and disengagement. These stressors were classified in two groups: the job demands group that contains physical, social, or organisational aspects of the job that requires sustained physical or mental effort and therefore, is associated with exhaustion. These factors are: physical
workload, physical environment, time pressure, shift work, and recipient contact. The
second category is job resources which refers to the physical, psychological, social
and organisational aspect of the job (these are: control, feedback, rewards, supervisor
support, participation, and job security) - that may (a) be functional in achieving work
goals, (b) reduce job demands at the associated physiological and psychological costs,
and (c) stimulate personal growth and development. Using structural equation
modelling, the authors reported that high job demands are positively related to
emotional exhaustion while poor job resources are negatively related to the
disengagement from work task.

These results suggest that burnout not only occurs when the employee is exposed
to high demands for a long period but it can occur when jobs are below a certain
quality standard (i.e. missing particular characteristics or the characteristics are
insufficiently present). For instance, jobs that have characteristics such as dull tasks,
insufficient control, inadequate continuous training, lack of regular feedback, conflict
with supervisors, bad relationships with colleagues, poor payment, work-home
conflict, an unhealthy workplace, are jobs with poor resources that may cause job-
related burnout.

The current study adopts the conceptualisation provided by the job demands-
resources model of burnout (Demerouti et al, 2001) as it identified burnout sources
overlap with the current study’s job characteristics lists. In particular, we argue that
the combination of poor enrichment of the task characteristics (e.g. dull tasks, low
control, poor regular feedback, inadequate training) along with poor job context
factors (e.g. aggressive supervisor, bad relationships with colleagues, work-home
conflict, poor payment, unrecognised member, noisy workplace) may lead to work related burnout, as these variables may be perceived as stressors.

In conclusion, the basic argument that we adopt here, is that jobs which are below a certain quality standard (i.e. missing particular characteristics or the characteristics are insufficiently present) would lead to the feeling of burnout. However, the assumption here is that burnout is multi-sourced, i.e. is not caused by a single variable but rather an outcome of a combination of group of variables.

5.3 The mediating variables

Should the above assumptions be supported, the question arises as to why these effects occur. In the current study, the role of two mediating variables is investigated. The first mediator is ‘learning on the job’. Learning is the link between the task characteristics with work performance and job-related burnout. The second mediator is ‘organisational commitment’ that links the job context characteristics with work performance and burnout. These assumptions are explained in detail below.

5.3.1 Mediating role of learning on the job

As we indicated earlier, job design theory has tended to focus on motivational mechanisms (enriched job design makes people want to perform better and to develop job satisfaction). The ‘reactive’ outcomes such as development and learning have received little attention either as outcome variables or as a mechanism that facilitate work outcomes. A criticism to the motivational mechanisms could be that they tend to
regard people as passive ‘reactors’ to job redesign. In reality, this is not the case as people are not ‘static’, but that they change in response, to how jobs are structured or regulated. A recent idea that has gained much ground is the notion that enriched job design allows employees to react positively by developing new perspectives and cognitive strategies that enhance their performance and improve their personality\(^4\). Evidence is accumulating for this more developmental perspective. Thus, studies have shown a link between enriched job content design (e.g. high control, intellectual demands) and cognitive development (Kohn and Schooler, 1978), the acquisition of broader knowledge about the organisation, the development of more proactive orientations (Parker, Wall and Jackson, 1997), more chances for skills utilisation and increased self efficacy (Holman and Wall, 2002). Therefore, in the present study we hypothesised that enriched ‘job content’ design is facilitating employees’ learning on the job that would influence, in turn, their level of work performance and wellbeing.

The relationship between job content or ‘task’ characteristics and learning is well documented in the job design literature. Research stemming from the demand-control model clearly indicates that the jobs with high demands and high control are producing the active jobs that provide employees with opportunities to develop new skills and an increased competence and mastery of job tasks (Karasek, 1979). Leach et al (2003) provided evidence of the role of empowerment factors such as autonomy and responsibility in producing positive effects on employees’ job knowledge, particularly among less experienced employees.

Parker et al (2001) indicated the learning and development perspective is consistent with the Action Theory (for review see Hacker, 1986; Frese and Zapf,

\(^4\) Quick response has been suggested as a cognitive mechanism in which performance increase by job enrichment because it enables employees to get a quick response to problems, (Kelly, 1992)
In brief, they indicated that Action Theory is knowledge-based regulation. A core feature of actions include that they are motivated by goals and regulated by cognition. Important implications derive from this emphasis on cognitive processes. The theory proposes increasing job control not only for motivational purposes, but to promote employees' deeper understanding of the task. More broadly, action theory is underpinned by the premise that: 'the human is seen as an active rather than a passive being who changes the world through work actions and thereby changes him- or her self' (Frese and Zapf, 1994). It is proposed that the individual develops and changes through action, and hence that the work has some influence on the development of personality.

Therefore, in the current study we will investigate the mediating role of job learning between the task characteristics of intellectually challenging tasks, feedback, control and training adequacy, and work performance and burnout. By job learning we are focusing on the learning-related outcomes rather than the process of learning (how knowledge is acquired and developed) such as skill utilisation and self efficacy. Skill use and self efficacy were found to be positively correlated with each other (e.g. Leach et al, 2003). Holman and Wall (2002) defined skill utilisation and self efficacy as follows:

- Skill utilisation: the extent to which employees perceive that their job provides the opportunity for skill use and skill development.

- Self efficacy: an individual’s beliefs regarding the likelihood that a particular course of action or behaviour can be carried out.
However few studies in the job design literature addressed how job design factors relate to learning and the outcomes of skill use and self efficacy. A leading study in this subject was conducted by Holman and Wall (2002) in which they investigated the role of learning (i.e. skill use and self efficacy) between work characteristics and strain in three competing models: direct effect, mediated and moderated effect. The authors reported that the data fit indices (using structural equation modelling) supported the idea that job learning has a mediating effect between job characteristics and outcomes, rather than a direct or moderating effect. The authors indicated that when the employees have control over their work tools and tasks, engage in a range of stimulating tasks, they gain more understanding of the broader work process and develop new skills and enhance their self efficacy. Therefore, it is assumed that such learning promotes better performance. Additionally, Paulus (2000) argues that creativity and innovation may be enhanced by task design enrichment and the opportunity for skill use and engaging in a range of tasks.

In the same way that task design variables of autonomy and stimulating task influence performance, they influence psychological outcomes such as burnout or strain. Autonomy, stimulating tasks and tasks that match employee abilities might enhance wellbeing by either reducing stressful work aspects (e.g. having the autonomy to return customer money for returned goods) or to reduce the negative impact of stressful work aspects (for example, having the freedom to take rest breaks when required). Strain or exhaustion might also be reduced via learning mechanisms. For example, Karasek and Theorell (1990) proposed that well designed jobs promote mastery, which in turn helps people to learn to cope with the stresses of the job. Similarly, Jackson (1989) suggested that people who feel ‘in control’ are more likely to use proactive problem-solving strategies to cope in uncertain situations.
The final assumption is that the job content characteristics along with job learning have a greater influence on the individual work performance in comparison with burnout. This assumption is based on the nature of the task characteristics examined here in which we indicated that they are characteristics responsible for task enrichment and important for task performance or task completion. As indicated in Chapter 2, this assumption is supported by research in which characteristics like control challenge, feedback and task ability fit are important aspects for task completion, creativity and innovative solutions (e.g. Algera, 1998; Gottfredson, 1997).

In summary, for the current study we assumed that the job content (task) characteristics of intellectual challenge, control, feedback and training adequacy are providing employees with opportunities of acquiring new skills or developing existing ones and would create a sense of task mastery and self efficacy. These social-cognitive states are believed to positively influence work performance and negatively influence job related burnout.

5.3.2 Mediating role of organisational commitment

Organisational commitment is the second proposed mediating variable that links the job context characteristics group with the outcomes of individual work performance and employee burnout. There is a reason to expect that higher organisational commitment will be associated with work performance and burnout. That because employees who feel they are benefiting from employment with their organisation (e.g. social support, feeling of seniority, financial rewards, and job compatible with their life style) are expected to engage in behaviours that align with
these goals. As such, employees will be happier (e.g. less exhausted) and have motivation to perform better.

By job commitment I am focusing on the commitment-related outcomes such as identification, involvement and loyalty. These dimensions reflect attitudinal and psychological perceptions that have been found to be important for the employee’s feeling of commitment (Buchanan, 1974). Cook & Wall (1980) identified organisational commitment as the degree to which the employee experiences an identification, involvement and loyalty with his or her job:

- Identification: this term refers to the employee having pride in the organisation and internalising the organisation’s goals and values.

- Involvement: a term referring to the psychological absorption in the activities of one’s role

- Loyalty: a term which refers to the affection for and attachment to the organisation and a sense of belonging manifesting as ‘a wish to stay’.

In the current study, we assume that employees who have job ‘context’ characteristics above a certain quality standard are likely to develop a sense of identification with organisational goals, involvement with their tasks, and loyalty to their organisation. This will reflect on the level of commitment that they would devote to their organisations. Employees who are committed are expected to show higher levels of performance, to support organisational goals and to be more comfortable and happy which reduce the level of burnout.

The first researchers who introduced organisational commitment as a mediator between job design and work outcomes are Barling and Zacharatos (1999). The
authors proposed in their model of safe working that organisational commitment mediates the relationship between job design factors and safe working. The authors explained: a sense of affective attachment to an organisation can result from identification with organisational goals and an internalisation of the values they embody. In this way, employees who feel they are benefiting from employment with their organisation will engage in behaviours that align with these goals.

Barling and Zacharatos’s (1999) model of safe working was retested by Parker, Axtell and Turner (2001) in a longitudinal study. The aim of this study was to extend the organisational approach to understanding the occupational safety by investigating the relationships between 8 job characteristics (i.e. work autonomy, role overload, role conflict, supportive supervision, training adequacy, job security and communication quality) and safe working, as well as the potential role of organisational commitment in mediating the relationship. The analysis showed that organisational commitment has a mediating effect between some job characteristics and safe working. For example, supervisor practices and safe working were mediated by organisational commitment. The authors noted that managers can do more than introduce rules and punishment by trying to support employees and show their concern regarding workers' safety which will reflect on employees’ commitment and their safe behaviours. Other characteristics were partly mediated by organisational commitment (e.g. communication quality). Others job content variables (e.g. role overload and role conflict) did not have any relationships with organisational commitment or safe working behaviours. The researchers explained that such a lack of effect could be due to the presence of other untested mechanisms such as employee’s self efficacy and suggested to include developmental mechanisms in future research.
However, employee commitment can result in enhanced work performance, and there are data to support this notion. For example, studies show a direct relationship between affective commitment and both individual performance (Meyer, 1997) and group level performance (Barling & Hutchinson, 2000). Much research argued that work performance is higher when employees have a sense of commitment to the firm generated by organisational practices and experiences that engender trust and respect (Robinson, 1996; Guzzo et al, 1994; Allen & Meyer, 1996).

Similarly, commitment is found to be related to burnout. Research lead by Haslam et al (in press) suggests an important role for social identification (one aspect of organisational commitment) within an organisational context and indicated that identification is a powerful predictor of affective outcomes such as burnout. The researchers suggested a mediating role for social identification between job characteristics and burnout in which identification plays a role as a motivational mechanism. The latter role is supported also by earlier research conducted by Haslam, Powell and Turner (2000) in which they reported that employees who identify highly with a given organisational group are found to be more motivated to act in a manner that advances the group collective interests which give them comfort and sense of belonging that reduces the work-related stress.

Organisational commitment is generated by the presence of job characteristics and practices that enable employees to recognise and work towards organisational goals. The way managers behave, signifies to employees that the organisation believes that they are capable of working towards organisational goals and that their contribution is valued (Tsui et al, 1997).
Perceived Organisational Support (POS) research has shown that job context factors have an effect on employee organisational commitment. For example, jobs with financial rewards and reasonable work-life balance (some aspects of the POS) are found to be correlated with high commitment because it implies an organisational investment in the employee (Davy et al. 1997; Kuhnert & Vance, 1992).

Psychological contract theory research has shown that contextual variables like leaders' practices, supportive co-workers, tangible or intangible rewards are part of the psychological contact between employees and their employers. Violating the psychological contract has shown to reduce organisational commitment substantially (e.g. Robinson, 1996; Robinson & Rousseau, 1994).

To summarise, we assume that employees who work in an enhanced job context will develop a sense of commitment and affective attachment to their employing organisation. The hypothesis behind this, which we adopt here, is that employees who feel they are benefiting from employment with their organisation will engage in behaviours that align with organisational goals. Therefore, the positive perception of the job context characteristics addressed in the current study (i.e. supportive supervisor, supportive co-worker climate, life-work balance, financial rewards, recognition and physical environment) would develop a state of strong feelings of identification and loyalty among employees and would influence positively the individual work performance and negatively job related burnout.

The final assumption here is that job context characteristics, along with organisational commitment, have a greater influence on the psychological outcomes of job burnout in comparison with the level of influence on work performance. This assumption is based on the nature and the definition of job context characteristics.
adopted in the current study in which we assumed that job context characteristics are responsible for work contextual enrichment. They are also important for improving work quality but not necessarily important for completing the tasks. This assumption is also supported by the fact that job context characteristics (e.g. social support) have more effect on mental health. For example, Fletcher and Jones (1993) indicated that support from the job accounted for more of the variance in work related stress than demands and control together.

5.4 THE MODEL SUMMARY AND HYPOTHESES

The model of job design, shown in Figure 5.1, distinguishes between three categories of variables, namely critical job characteristics, outcomes and mediator variables. The first part of the model is based on the empirical findings presented earlier in this research (i.e. the critical job characteristics) and the other parts are theoretical, based on the literature review.

The critical job characteristics contain 10 dimensions that were perceived as critical to work quality. These characteristics were categorised into two sub-groups. The first group is the ‘job content’ characteristics that contained the tangible feature of the tasks and important in executing the tasks (i.e. intellectually challenging tasks, control, feedback, training adequacy). The second group is the ‘job context’ that contains the psychosocial variables of the job context where the tasks are executed. These are important for a positive perception of workplace quality, but not necessarily for delivering the tasks (i.e. supportive supervision, supportive co-workers climate, work-life balance, financial rewards, recognition and physical environment).
In general, the main assumption here is that these 10 job characteristics can directly affect employee attitudes and behaviours at work. The suggestion is that employees should react positively to these dimensions and develop cognitive and psychological states that, in turn, positively influence their work performance level and enhance their wellbeing.

Furthermore, the model contains two mediating variables that were assumed to be a positive reaction to the enrichment of job content and context characteristics. These mediators are job learning and organisational commitment. These positive affects reinforce the individual and serve as an incentive for him/her to continue to try to perform well in the future, as well as creating within themselves a positive state of wellbeing. If the performer has continuous chances of tackling problems, rich feedback, and adequate training he/she will experience a positive perception of continuous learning. Employees who have more knowledge and skills (expertise) show better performance and develop strategies to cope effectively in uncertain situations or under daily pressure. Similarly, if the performer has a supportive climate, work-life balance, good working conditions, continuous recognition and adequate payment he or she would perceive that they are benefiting from employment with their organisation therefore, would engage in behaviours that align with the organisation’s goals (high performance and effective coping strategies)

However, it should be noted that the generated cognitive and motivational states of continuous learning and commitment should be highest when all the associated characteristics are fully enriched. If the performer developed a negative state of any of the mechanisms (which results from poor job design), this should affect employee perception of the job and would reflect in turn on his or her behaviours or attitudes.
However, it might be argued that this model overlapped, to some extent, with the job characteristics model. Although the layout and the structure of the variables are similar in both models, the content of the variables and the underlying mechanisms are quite different. The critical job characteristics in the present model are different in their focus and in the methodology used to develop the critical job characteristics. Firstly, while Hackman and Oldham developed their characteristics based on literature review and personal judgment, we identified the critical job characteristics empirically and based on the employee’s perspective. Secondly, the JCM’s characteristics focused only on the characteristics of the content of the job (task characteristics). In the present model, the job characteristics were expanded to address both the characteristics of the job content (tasks) and the characteristics of the job context where the tasks are executed. Therefore, the JCM can be described as a ‘task design’ model while ours is a ‘job design’ model that focuses on designing both the tasks and the surrounding context. Finally, the underlying mechanism of the JCM is based on motivational nature. That is, people who are working in enriched jobs are motivated to perform better and have more job satisfaction. In the present model, we used both cognitive and motivational mechanisms to explain how job design influences work performance and employee wellbeing. That is, employees who work in enriched job design will develop motivational and cognitive strategies (knowledge and skills) which would enable delivering work duties effectively, and an enhancement in their personalities that will reflect on their wellbeing. In this respect, the JCM deals with people as ‘passive reactors’ to work systems while in this model we assume that people are ‘active recipients’ who change, develop, and adjust cognitively and behaviourally with the way work is structured and regulated.
Within the above assumptions and definitions, six hypotheses were developed. These hypotheses are as follows:

1- Jobs that are intellectually challenging, have job control, regular feedback, and adequate training stimulate learning on the job.

2- People working in jobs that have supportive supervision, supportive co-worker climate, work-life balance, financial rewards, recognition, and physical environment, will experience higher organisational commitment.

3- ‘Learning on the job’ and ‘organisational commitment’ are positively related to individual work performance and negatively to employees’ burnout.

4- ‘Learning on the job’ will mediate the relationship between the job content (task) characteristics group and individual work performance and employees’ burnout.

5- Organisational commitment will mediate the relationship between the job context characteristics group and individual work performance and employees’ burnout.

6- Job content (task) characteristics group and ‘learning’ have a greater influence on the work performance while job context characteristics group and ‘commitment’ have more of an influence on job related burnout.

However, before claiming any benefits that might be gained by applying this model’s principles, the model hypotheses needs to be empirically examined using field data. The hypotheses testing processes, using data collected via cross-sectional design and analysed using structural equation modelling, will be presented in the next chapter.
Chapter 6

JOB DESIGN, PERFORMANCE AND WELLBEING: AN EMPIRICAL EVALUATION

6.1 INTRODUCTION

To this point, in Chapter 5 we put forward a job design model that considers wider issues and extensions to job design research. The model of job design distinguishes between three categories of variables, namely critical job characteristics, outcomes and mediator variables. The main theme of this model is that employees who work in a quality job design (both at content and context levels) will become more knowledgeable, master their tasks and become more involved in their jobs. Expert and motivated employees are better performers and have the ability to cope better with daily work pressures and thus have a higher level of wellbeing. Contrary to the Job Characteristics Model, we assume in this model that people are ‘active recipients’ who change, develop, and adjust with the way work is structured and regulated.

Consequently, the aim of the current study is to evaluate the above assumptions in the field using a cross sectional sample. The over arching aim is to examine the consequences of the extended job design characteristics on employee wellbeing and productivity. Figure 6.1 displays the variables that will be tested in the current study. The hypotheses to be tested are presented as well.
6.1.1 Hypotheses

1. Jobs that are intellectually challenging, have job control, regular feedback, and have adequate training stimulate learning on the job.

2. People who are working in jobs that provide supportive supervision, supportive co-worker climate, work-life balance, financial rewards, recognition, and health physical environment, will experience higher organisational commitment.
3. 3a) ‘Learning on the job’ and ‘organisational commitment’ are positively related to individual work performance. 3b) ‘Learning on the job’ and ‘organisational commitment’ are negatively related to employees’ burnout.

4. Learning on the job will mediate the relationship between the job content (task) characteristics group and individual work performance and employees’ burnout.

5. Organisational commitment will mediate the relationship between the job context characteristics group and individual work performance and employees’ burnout.

6. 6a) Job content (task) characteristics group and ‘learning’ have a greater influence on the work performance. 6b) Job context characteristics group and organisational commitment have more of an influence on job related burnout.

Accordingly, this chapter is dedicated to describing a study aiming to test the above hypotheses in the field. The first section describes the methodology. This section explains the sample and procedures, as well as the instruments used to measure each variable in the model. The results section describes the output of the structural equation modelling (SEM) and multiple regression techniques that were applied to test the model’s hypotheses. The last section is a discussion of the significance of the results, implications for job design as well as some methodological limitations.
6.2 METHODOLOGY

6.2.1 Sample and procedures

The total sample consisted of 168 employees from two British organizations. The first organization was the police force. Participants (n = 94) were mainly the patrol officers and crime investigators. The second organization (n = 74) was a small bank working mainly to provide a range of financial services and products to banking institutions. Professional jobs (e.g. accountants, financial analysts), clerks and office personnel were included. Of the total sample (n=168), 60.3% percent of the participants were men and 39.7% were women. Of the whole sample, 18.5% (n= 31) were age 25 years or younger, 51.2% (n= 88) were between age 26 and 40 years, and 30.4% (n= 49) were age 40 years or older. To provide a fair assessment of job characteristics, participants were included only if they had been employed for more than 90 days by the organisation (i.e. probationary employees were excluded). The work experience was between 3-228 months with an average of 53.7 months (≈4.5 years). Regarding employment type, 6.3% of the participants were working part-time and 93.7% were holding fulltime jobs.

In both organisations, participation was voluntary but participants were encouraged by the management to take part in the study. All materials were distributed through the HR departments and were returned using either preaddressed freepost envelopes (sent directly to the researcher) or preaddressed envelopes to be sealed and sent back to a correspondent person from the HR department, to be forwarded later to the researcher. Each participant received a package that contained: a questionnaire, letter from the organisation management encouraging employees to take part in the study, demographic data sheet, two preaddressed envelopes (one for the questionnaire and
one for the demographic sheet), and a cover page from the researcher explaining the aims of the study and statements that guaranteed data confidentiality. Participants were advised to post their personal information sheet (their names, employment number, and other demographical information) using a separate preaddressed envelope to guarantee the confidentiality of their personal data.

On the cover page of the questionnaire, the nature of the research and aims were explained and employees were asked to provide their names or employment number to identify them in order to collect some data from their personnel files. All participants were informed that data would be treated in the highest restricted confidentiality. For those who agreed to provide their names, their previous year performance appraisal was obtained from their personnel files to compare them with their self-appraisal of performance responses collected in the present study.

All model variables were assessed in both organisations in the same way except employees’ performance assessed from organisational records that were different in both organisations. Yet, the scores were converted by the researcher into a homogeneous scale (for details see section 6.2.2 point 13). Furthermore, the characteristic of physical environment was measured in the bank sample only. Measuring physical environment in the Patrol officers sample was considered irrelevant and not a part of the job design that can be controlled by the organisation.

6.2.2 Materials

The model was tested using data collected via the “Job Quality Indicator” (JQI) and some performance data was obtained from employees’ personnel files. The JQI is a
self-report questionnaire filled out by employees and designed by the researcher to assess the model job’s characteristics, mediators, and outcomes. This questionnaire consists of scales selected from published instruments and scales of ‘job tasks’ and ‘psychosocial work variables’ as well as new ones constructed when no sound measures were available. The following is a description of the JQI scales (see appendix 4):

1. **Intellectually challenging tasks:** this dimension was measured by a combination of 6 items from the problem solving demands scale developed by Jackson et al (1993) and ability/skill/task variety items adapted from Multi Method Job Design Questionnaire (MJDQ) developed by Campion (1988). Example items were: *do you have to solve problems which have no obvious correct answer; does the job require a variety of knowledge, skills, and abilities.* The level of perceiving each item was assessed on a 7-point continuum (1 = very little to 7 = very much), and the internal consistency (Cronbach’s alpha) was (.76).

2. **Control:** control was measured by the decision authority scale obtained from Job Content Questionnaire (JCQ) developed by Karasek et al (1998). The scale consisted of three items that assessed the amount of decision latitude that the job offers. An example item was: *my job allows me to make a lot of decision on my own.* Responses were on a 5-point scale (1 = strongly disagree to 5 = strongly agree) and the internal consistency (Cronbach’s alpha) was (.67).

3. **Feedback:** this dimension was measured using 6 items adapted from the Job Diagnostic Survey (JDS; Hackman & Oldham, 1980). The items measure
perceived feedback on performance from the job itself, supervisors and colleagues. Example items were: Does your job sufficiently inform you about your work performance; To what extent do your managers or colleagues let you know how well you are doing on your job. The level of perceiving each item was assessed on a 7-point continuum (1 = very little to 7 = very much), and the internal consistency (Cronbach’s alpha) was (.82).

4. Training adequacy: this characteristic was measured by 6 items. Some of the items are based on ideas developed by Parker, Axtell, & Turner (2001). The scale items assessed the extent to which employees felt that they received adequate training to help them to do their job better, if they receive enough follow-up training and whether they think that the tasks they do match their abilities and their qualifications. An example item was: Do you receive adequate training to improve your abilities. The level of perceiving each item was assessed on a 7-point continuum (1 = very little to 7 = very much). The internal consistency (Cronbach’s alpha) was (.84).

5. Supportive supervisor: this dimension was measured by 3 items extracted from the Servant Leadership Scale developed by D’Amato and Majer (2005). The items assessed three aspects: forming relationships with subordinates, helping subordinates to grow and succeed, and having conceptual skills. An example item was: My line manager displays wide-ranging knowledge and is keen to seek solutions to work problems. Responses to the items were given on a 5-point Likert-style scale (1 = strongly disagree to 5 = strongly agree) and the internal consistency (Cronbach’s alpha) was high (.89).
6. **Supportive co-workers climate:** this characteristic was measured by 7 items. Five items were from the cohesion within team scale developed by Koys and DeCotis (1991) and two items from a scale developed by Koys (2001). The items assessed whether the employees receive support from co-workers, feeling accepted and back him/her up in need. Example items were: *In my team/department colleagues help each other; I can count on my co-workers when I need help.* Responses to the items were given on a 5-point Likert-style scale (1 = strongly disagree to 5 = strongly agree) and the internal consistency (Cronbach’s alpha) was (.82).

7. **Work-life balance:** work-home conflict and home-work conflict were measured using 5 items adapted from the Whitehall II study questionnaire (Marmot et al., 1991). Three of the items measured the work-home conflict, that is the extent that job responsibilities interfere with employee family life (e.g. *Your job reduces the amount of time you can spend with your family*). The other two items measured the conflict between home and work and the extent that family life and family responsibilities interfere with employee performance in his/her job (e.g. *Family matters reduce the time you can devote to your job*). Responses to the items were given on a 5-point Likert-style scale ranging from 1 = ‘not at all true’ to 5 = ‘exactly true’. The internal consistency of the scale was acceptable in the present sample (Cronbach’s alpha = .75).

8. **Financial rewards:** two items were used to measure this dimension. The first item was adapted from Effort-Reward Imbalance model (ERI) scale developed by Siegrist (1996) representing the level of perceived fairness of the compensation provided by the organisation (e.g. *considering all my efforts and
achievements, my salary/income is adequate). Responses to the items were given on a 5-point Likert-style scale (1 = strongly disagree to 5 = strongly agree). The second item was developed specifically for the present study and assessed the degree of satisfaction with rate of pay on a five-point Likert-style scale (1 = poor to 5= excellent). The Pearson correlation between the two items was good (r = .62, P< .001).

9. **Recognition**: this dimension was measured using 5 items. Four of the items were adapted from the climate for service scale developed by D'Amato & Majer (2005). The items reflect the amount of recognition perceived from work, supervisors and colleagues (e.g. *My line manager recognizes and appreciates high quality service*). Responses to the items were given on a 5-point Likert-style scale (1 = strongly disagree to 5 = strongly agree). The fifth item was developed specifically for this study to assess the degree of satisfaction with recognition on a five-point Likert-style scale (1 = poor to 5= excellent) (i.e. *How would you rate the recognition that team/department members receive for the delivery of quality service*). The internal consistency of the whole scale was satisfactory in the present sample (Cronbach’s alpha = .71).

10. **Physical working environment**: the extent to which personnel considered themselves to be exposed to physical stressors (e.g. noise, poor air quality, cramped workplace) in the course of their work was measured with six items taken from Hellesoy (1985). The items have been used and validated in a recent study by Parkes (2003). Responses to the items were given on a 5-point
Likert-style scale (0 = not at all to 5 = to high extent) and the internal consistency (Cronbach's alpha) was (.72).

11. **Learning on the job**: this dimension was measured by a six-item scale used and validated by Holman & Wall (2002). The scale assesses learning related concepts such as the extent to which employees perceive that their job provides the opportunity for skill use and the extent to which they feel confident about their knowledge necessary to deliver their job duties. Example items were *(I have many learning opportunities that keep me updated in my field; I feel confident that I have the necessary knowledge, skills and abilities to tackle any novel problem)*. Responses to the items were given on 5-point Likert-style scale (1 = very inaccurate to 5 = very accurate). The internal consistency of the scale in the present sample was satisfactory (Cronbach’s alpha = .78).

12. **Organisational commitment**: this dimension was measured by 8-item scale developed by Cook & Wall (1980), the scale has been used excessively in occupational studies. Responses to the items were given on a 5-point Likert-style scale (1 = very inaccurate to 5 = very accurate). Example items were *(I feel my self to be part of this company; I sometimes feel like leaving this employment for good-reversed)*. The internal consistency of the scale in the present sample was acceptable (Cronbach’s alpha = .72).

13. **Individual work performance**: this dimension was measured by two measures. The first measure was the self-appraisal of performance. Employees were asked to assess their performance based on their level on their task proficiency, contextual and proactive performance. These three dimensions of
work performance were identified by Parker and Turner (2002) and recommended by other researchers (e.g. Campbell et al, 1993; Motowidlo et al, 1997, Sonnnetag & Frese, 2002; see chapter 5 for details). Fifteen items were developed to measure the self appraisal of work performance. All the items were introduced by the question (how do you estimate your performance level in delivering the following behaviours or tasks) followed by the items (e.g. Doing the required tasks on time as expected; Keeping a positive relationship with colleagues i.e. helpful, considerate, encouraging, sociable, fairly etc; Asking for a challenging work assignment.). Responses to the items were given on a 7-point continuum (1 = very poor to 7 = excellent). The internal consistency of the scale was high in the present sample (Cronbach’s alpha = .88).

The second performance measure used in this study was the ‘previous year performance’. Each participant’s personnel file was used to collect data about his/her previous year performance assessment. With the help of personnel staff and based on the employees’ personnel files, each employee was given a score for his/her previous year’s performance. Police officers’ performance was assessed by Qualified Assessors. Their estimations have been used as performance indictors. The scores were converted by the researcher into 7-point Likert-scale type and ranging from 1 = very poor to 7= excellent.

For the bank sample, the personnel department staff assessed each employee performance (based on his/her last official performance assessment provided by supervisors) on a 7-point Likert-type scale provided by the researcher and ranging from 1 = very poor to 7= excellent.
14. **Work related burnout:** this dimension was measured by the Oldenburg Burnout Inventory (OLBI) scale developed and validated by Demerouti et al (2001). The inventory has two subscales: emotional exhaustion and disengagement from work tasks. The exhaustion scale consists of 8 items and assessed the general feelings of emptiness, overtaxing from work, a strong need for rest, and a state of physical exhaustion. Example items were: *there are days when I feel tired before I arrive at work; during my work, I often feel emotionally drained.* The disengagement refers to distancing one-self from the object and the content of one’s work in general. The subscale comprises 8 items. An example item was: *I get more and more engaged in my work* (reversed). The internal consistency of the subscales of disengagement and exhaustion were satisfactory in the present sample (coefficient alpha r = .82, .84 respectively). Responses to the items were given on a 4-point Likert-style scale (1 = strongly agree to 4 = strongly disagree).

15. **Demographics:** the questionnaire collected information about the participant’s name, employment number, gender, age, employment type (part/fulltime) and length of service.

### 6.2.3 Data analyses

Data was analysed using SPSS 11 and LISREL 8.7 software packages. Variables were scored by the sum of the associated items for each scale. Regarding statistical technique, three steps were employed. First, simple Pearson correlations of the relationships of the perceived job characteristics, mediators, work performance and employee’s burnout. This analysis provided an initial idea of the relationships
between model's variables. The second step is the analysis by the Structural Equation Modelling (SEM) to test the model's causality paths and the mediating effects between the job characteristics and the proposed work outcomes. SEM analysis provided answers for the first five hypotheses explained earlier. Finally, the multiple regression test was used to investigate the relationships structure between the model's characteristics, mediators, and outcomes. This analysis answered the sixth hypothesis in the current study.

Following a suggestion provided by Tabachnick and Fidell (1996), the mean average for each variable for all cases was calculated and used in place of the missing data as by this way the mean for the distribution as whole does not change and the researcher is not required to guess the missing values. However, the proportion of the missing data was very small and counted less than the 0.5% of the whole data set (91 missing value out of 18816 values). One exception of this was the scale of 'employees' previous year performance'. In this variable, missing data meant that there were no records regarding that particular employee because (a) the employee is new and has no performance record yet or (b) he/she did not receive any credit to his performance record (for the police officers sample) or (c) that employee decided to be anonymous and did not report his/her name or employment number. Therefore, missing data were excluded pair wise (46 cases). Additionally, because the job characteristic of 'physical environment' was assessed in just one organisation (i.e. in the bank sample, N=74), this dimension was included in the correlation analysis only and excluded from SEM and regression analyses.

Finally, all the variables were tested for their normality using the skewness test, kurtosis test, and histograms with normal curve. The results indicate that all variables
have symmetrical distribution as the skewness indices ranged from .087 to -.722. The peak of the distribution was within the acceptable range for most of the variables as kurtosis indices ranged from .023 - .884. Univariate and bivariate outliers of the variables were tested by converting them to Z scores; none of the Z values exceeded the ±3.29 point.

6.3 RESULTS

6.3.1 Correlation analysis:

The means, SD, and the Pearson correlations between the model’s variables are shown in Table 6.1. As expected, most of the job ‘content’ and ‘context’ characteristics were correlated with the ‘learning on the job’, ‘organisational commitment’, work performance and job-related burnout aspects. Specifically, the self appraisal of performance scale was correlated positively with most of the job characteristics while ‘employee’s previous year performance’ score attained low and insignificant correlations. Regarding job related burnout and the feeling of exhaustion or disengagement, as expected, the results showed negative correlations between exhaustion and all job characteristics variables and mediators as well as negative correlations between disengagement and all job characteristics. In general, correlation indices of disengagement were slightly higher in comparison with exhaustion.

Physical work environment did not correlate with any variable except financial rewards (r = -.33, p<.01). Furthermore, as expected, the ‘learning’ and ‘commitment’ correlated higher with the outcomes in comparison with the correlations between job characteristics and outcomes. Learning on the job was correlated negatively with
burnout aspects (r for exhaustion and disengagement = -.35, -.47, p<.01 respectively). The same applies for organisational commitment (r for exhaustion and disengagement = -.43, -.59, p<.01 respectively). Self appraisal of performance scale was correlated positively with learning on the job (r = .48, p<.01) and organisational commitment (r = .46, p<.01).

Furthermore, the results indicated that some of the ‘job content’ characteristics were correlated slightly stronger with ‘learning’ than ‘commitment’ (e.g. their correlations with training adequacy are = .61; .53, p<.01 respectively) while ‘job context’ characteristics correlated slightly stronger with ‘commitment’ in comparison with ‘learning’ (e.g. their correlations with supportive co-workers are= .41, .29, p<.01 respectively) except physical environment in which no significant correlations were obtained. In general, ‘commitment’ and ‘learning’ were positively correlated with all job characteristics.

To summarise, the results indicated strong relationships between the job characteristics and the hypothesised work outcomes\(^1\). This gives support to the model’s basic assumption in which job characteristics are positively related to work performance and negatively to burnout. In the next section, the first five hypotheses will be tested using Structural Equation Modelling (SEM).

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\(^1\) It should be noted that 8 indices from correlations matrix were, to some extent, high (> .50). To ensure that this was not due to the problem of the multicollinearity between variables, a multicollinearity diagnostic test was carried out over the 16 variables included in this study. Tabachnick and Fidell’s (1996) suggested technique is to test the multicollinearity by producing a “conditioning index” as well as variance proportion associated with each variable, after standardisation, for each root. Variables with large variance proportion are those with a problem. They indicated that criterion for multicollinearity is a conditioning index above 30 with at least two variance proportions above .50 for a given root number. Applying this criterion on the present variables indicated that no multicollinearity is evident. Although 6 variables have a conditioning index above 30, only one of the variance proportions is greater than .50.
Table 6.1: Means, SD and Pearson correlations between study variables

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<th>n</th>
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* The correlation is significant at p<.05
** The correlation is significant at p<.01
6.3.2 Structural equation modelling (SEM)

Using the LISREL 8.7 software package, SEM was used to test the model’s hypotheses. As indicated earlier in Chapter 5, the proposed model includes 10 job characteristics (content and context), and two mediators of ‘learning on the job’ and ‘organisational commitment’. The aim was to investigate the consequences of these designs and mechanisms on work performance and employee’s wellbeing. In this analysis, only 9 job characteristics were included as the characteristic of physical environment was excluded because this variable was tested in one organisation only. Thus, the number of cases (n=74) was insufficient to include them in the SEM. Overall, the SEM analysis was performed on 168 subjects\(^2\) for all variables except “employees’ previous year performance” which was calculated on 122 (i.e. missing data for this variables were excluded pair wise).

Figure 6.2 displays the SEM version of the job design model presented earlier in Figure 6.1. The model contained six latent variables (two exogenous and four endogenous variables) and 15 observed variables. The model assumed that the ‘job content’ characteristics are determinants of ‘learning on the job’ and the ‘job contextual’ characteristics are determinants of organisational commitment. Both job learning and organisational commitment are determinants of individual work performance and job-related burnout. In summary, the model assumes that the job ‘content’ and ‘context’ characteristics are indirectly affecting work performance and burnout via two mediators of ‘learning’ and ‘commitment’.

\(^2\) Ulliman (1996) indicated that a small size sample may be adequate for SEM analysis if the measured variables are normally distributed. All the variables examined were normally distributed (see section 6.2.3)
Figure 6.2: The SEM version of the job design model presented earlier in Figure 6.1
6.3.2.1 Model Estimation

In SEM, the researcher proposes a model of the relationships between variables, and the SEM programme generates a covariance matrix that is implied by the model. There is a basic condition that needs to be addressed in order to achieve support for any hypothesised model which is the covariance matrix implied by the model should be little different from the observed covariance matrix. The difference between the observed covariance and the actual covariance matrices is assessed by the Chi square test. In addition, there are other recommended fit indices developed to assess the fit between the implied model and observed model matrices. Much research indicated that fit indices are usually interpreted in combination rather than relying on a single index (e.g. Ulliman, 1996). Four fit indices will be used in the present study: first we looked for a non-significant goodness of fit Chi-square, a root mean square error of approximation (RMSEA) of less than .06, a comparative fit index (CFI) of greater than .90, and an adjusted goodness of fit index (AGFI) greater than .90. In addition to the model being a good fit, the individual paths must be statistically significant and theoretically meaningful.

First we tested the model presented in Figure 6.2. Comparing the model fit indices with the above rules of thumb for ‘Good Fit’ indicated that only marginal support was found for the model. Chi square was significant ($\chi^2 = 243.56$, df= 83, p>.01). RMSEA was high (.08) and exceeding the minimum acceptable value (i.e. .06). The same applied for CFI (.83) and AGFI (.87).

In order to develop better fitting indices, post hoc model modifications were performed. Specifically, LISREL outputs provide suggestions to modify some of the model paths in order to achieve a better fit index. These suggestions include the
addition or deletion of some of the paths between the model’s variables. However, SEM experts highly recommended that any addition or deletion should be based on theoretical justifications and not motivated purely by statistical results (c.f. Chris Fife-Schaw, 2000). LISREL outputs suggested adding three reciprocal paths between the error terms of supportive supervision and recognition, intellectually challenging tasks and control and financial rewards and recognition.

These suggestions meant that the error terms of these variables covary because they have something in common other than the exogenous latent variables of job content or context design. This covariance can be explained in two ways; either the scales assessing each pair of the characteristics have related items, or simply due to some other unmeasured or unidentified factor. We shall focus on each of these two explanations in turn.

The first LISREL suggestion was to allow the errors between supportive supervision and recognition characteristics to covary in the model. This implies that the two characteristics that are already indicator of the latent variable ‘job context design’ have something in common other than the latent factor. However, the most likely explanation for these variations is due to the scales used to assess these characteristics. A closer inspection of the items wording indicate that both scales are assessing the same source, namely the supervisor. Supportive supervision scale is assessing the level of support from supervisor to subordinate, while two of the items in the recognition scale are assessing the level of recognition provided by supervisors to their subordinates (e.g. my supervisor recognises and appreciates high quality service). This implies that both scales have some related items that assess the same source for support or recognition. Hence, allowing the errors of the two scales to covary was expected to reduce the Chi square by 11.23 units.
The same reasoning applies to the issue of covariance between challenge and control characteristics. The LISREL output suggests that there is a common feature between the two factors other than the indicators of the latent variable ‘job content design’. Again, such a covariance is due to the existence of related items between the two scales. From the items wording, it is evident that both are assessing the problem solving demands from different perspectives. In the challenge scale, two items are assessing the possibility of facing unexpected problems (e.g. do you come across problems in your job you have not met before?). In the control scale, the same aspect is assessed (i.e. problem solving) but from slightly a different perspective which is the opportunity and the freedom to solve problems. Hence, allowing the errors of challenge and control to covary was expected to reduce the Chi square by 8.92 units.

The final suggestion was to permit the errors between the financial rewards and recognition to covary. Here, the reason for such covariance is different from that explained in the previous discussion as the items assessing each characteristic are distinct and do not share related items. However, one explanation for such errors covariance is due to an unmeasured factor. Specifically, the covariance between financial rewards and recognition may be due to unmeasured variable which is the ‘job security’ factor. Theoretical and empirical research implies that financial rewards, recognition and job security are the three axes of the wider scheme of ‘organisational rewards’ (cf. Seigrest 1996). In the current study, the ‘organisational rewards’ scheme was measured by two dimensions which excluded job security. Allowing the errors between recognition and financial rewards to covary was, therefore, expected to reduce the Chi square by 7.12 units.

Resetting the model with added paths resulted in an improved fit. Although the Chi-square was significant, other indices indicated that this model was approaching an
adequate fit, $\chi^2 = (218.37, \text{df} = 80, p< .01)$, RMSEA was acceptable (.06), the same applies to CFI (.91) and AGFI (.93). Furthermore, an examination of the ‘t’ value for individual paths in the model indicated that all values were statistically significant.

In order to investigate whether better fit indices can be obtained, the SEM analysis was executed to test the model where the endogenous latent variable of ‘individual work performance’ is indicated only by the objective rating of performance (the supervisory ratings). This analysis was performed because the researcher believed that one of the possible causes for the poor fit indices obtained in the model before the post hoc modifications may be due to the low correlation between the self and supervisory ratings of performance (i.e. .11). This in itself may have been triggered by a possible leniency of the self-ratings of performance.

To investigate the above assumption, the model was tested with supervisory ratings of performance as the sole indicator of the endogenous latent variable of ‘individual work performance’. Resetting the model indicates that the model did not achieve acceptable fit indices. Chi square was significant $\chi^2 = (247.23, \text{df} = 84, p< .01)$, and RMSEA was higher than the cut off point (i.e. .11). The path coefficient for the supervisory ratings was slightly higher while the rest of indices more or less remained constant (see Appendix 5). These results have two possible explanations; either the self-ratings are biased or they were affected by the common method variance.

With regards the first possibility, the results imply that the self-ratings may, possibly, be affected by the tendency for self-enhancement. Research in performance appraisal indicated that scepticism surrounds self-appraisal because of the belief that (a) self-appraisal is subject to self enhancement desire and (b) most people are unable to evaluate themselves objectively or reliably (e.g. Anderson, Warner, and Spencer,
However, Farah et al (1988) indicated that although meta-analysis of the validity of self-appraisal of performances shows that the self-appraisals tend to be more lenient than supervisory or peer-appraisal, this leniency diminished when individuals were informed that their self-appraisal would be validated against objective records. This gives some credit to the validity of the self-appraisal data in the current study, as all subjects were informed that their personnel files will be used to collect some data regarding their performance. Even though, the self-appraisal results in this study are not compatible with the employees' "objective" data collected from their personnel files. The correlation between the two methods is low and insignificant (r = .11) and the self-appraisal assessment seems to be more lenient. The mean average of the self-rating is higher (M= 80.01, SD= 10.9, range= 15-105) in comparison with the supervisory ratings (M= 4.14, SD= 1.89, range= 1-7; see section 6.4.1 for more details).

The other possible explanation is due to the fact that self-appraisal of performance items were in the same questionnaire as the items tapping the job dimensions and the mediators. Consequently, relationships involving the self-appraisal measure may have been inflated and, hence positively affected, the fit indices because of common method variance. Relationships involving objective performance measures are not affected by such issues because they were estimated at a different time using different methods.

Because the type of the data collected at the presented study (cross-sectional) does not permit a test to determine the degree to which of the two explanations offered above is responsible for the poor fit indices, the path coefficients after the post hoc modification (i.e. with errors covariance) was considered the basic indices for the relationships in the present study. These indices are presented in the next two sections.
The path coefficients for the model presented in standardised form are given in Figure 6.3. Task characteristics were found to be determining 'learning on the job' (standardised coefficient are .94, p<.01). These results give support to the first hypothesis which stated that the jobs that are intellectually challenging, have job control, regular feedback and training adequacy stimulate learning on the job.

Moreover, the job contextual characteristics are positively related to organisational commitment (standardised coefficient are .32, p<.01). This gives support to the second hypothesis indicating that employees working in jobs that have supportive supervision, supportive co-worker climate, work-life balance, financial rewards, and recognition, will experience higher organisational commitment. Furthermore, job learning and organisational commitment were correlated positively with the individual work performance and negatively to the feeling of job-related burnout. This gives support to both sections of the third hypothesis. As indicated in hypothesis (3a), work performance is increased as the level of learning on the job and organisational commitment increased (standardised coefficient are = .69, .12 respectively, p<.01). Hypothesis 3b is also supported, burnout decreased significantly as the level of 'learning' and 'commitment' increased (standardised coefficients are -.71, -.11 respectively, p<.01).

6.3.2.3 Mediators' effects

The mediation role of learning on the job and organisational commitment as potential mechanisms for job design was determined by calculating the indirect effects
between the job ‘content’ and ‘context’ characteristics and outcomes. The relationships between the ‘job content’ characteristics and individual work performance and employees’ burnout were mediated by the level of learning on the job. Enriched ‘job content’ design increased work performance and reduced burnout via the raise in the level of learning on the job (standardised coefficient for indirect effect = .63, -.67 respectively p< .01). This means that learning has a mediating role between ‘job content’ characteristics and work outcomes that gives support for the fourth hypothesis, which indicated that learning on the job will mediate the relationship between the task characteristics and individual work performance and employees’ burnout.

Furthermore, ‘organisational commitment’ mediated the ‘job context’ characteristics and work performance and job related burnout. Better quality of job contextual aspects perceived by employees, increased organisational commitment, which in turn increases individual work performance (standardised coefficient for indirect effect = .04, p< .01) and reduces job burnout (standardised coefficient for indirect effect = -.03, p< .01). These results give support for the fifth hypothesis which stated that organisational commitment is mediating the contextual characteristics and work outcomes.

Although all the indirect effects are significant, it seems that ‘learning’ has a greater effect on the relationship between job dimensions and outcome in comparison with the organisational commitment effect. This issue will be highlighted in the discussion section of this chapter.
Figure 6.3: the SEM version of the formulated job design model's coefficients presented in standardised form. * indicates that the path is significant at p<.05.
6.3.3 Regression analysis

To provide answers for the sixth and final hypothesis, multiple regressions were used to test the relationship of each category of the job characteristics (content or context), along with their associated mediators over the outcome variables of the work performance aspects and the job-related burnout. The aim was to test first; whether the 'job content' characteristics group (intellectually challenging tasks, control, feedback, and training adequacy) along with learning on the job are explaining more variance in performance in comparison with the amount they explain for job related burnout. The second part is to test whether the contextual characteristics group (supportive supervision, supportive co-workers, work-life balance, financial rewards, and recognition), along with organisational commitment, explain more variance in burnout compared with the amount of their explained variance for performance. Table 6.2 shows the summary of the multiple regression results.

The amount of explained variance between the two characteristics sub-groups and their associated mediators over outcome aspects were compared. The comparison indicates that the 'job content' characteristics + learning explained 29% of the variance in self appraisal of performance, and 12% of employees' previous year performance. The 'job context' characteristics + commitment explained just 19% of the variance in self appraisal of performance and only 3% of employees' previous year performance. This means that the explained variance of the job content characteristics + learning on performance aspects is greater than the explained variance on burnout. These results support, to some extent, the first part of the sixth hypothesis (6a) which says that job content characteristics and learning have a greater
influence on work performance in comparison to the amount they influence on job related burnout.

**Table 6.2: the explained variance between the two job characteristics sub groups and their mediators over outcome variables using multiple regression**

<table>
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<th>Number of predictors used in regression</th>
<th>Burnout²</th>
<th>Self appraisal of performance</th>
<th>Employee's previous year performance</th>
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<td>Job content characteristics + learning</td>
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<td>.29</td>
<td>.13</td>
</tr>
<tr>
<td>Job context characteristics + organisational commitment</td>
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<td>.19</td>
<td>.03</td>
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</table>

* Job content characteristics: intellectual challenging tasks, task ability fit, job control and performance feedback.
** Job context characteristics: supportive supervision, supportive co-worker climate, work-life balance, financial rewards, and recognition.

Additionally, the multiple regression results indicate that the job context characteristics and their mediator of organisational commitment explained 56% of the variance in burnout. Job content characteristics + learning explained only 25% of the variance in burnout. This means that the explained variance of the burnout aspect is substantially higher when predicted by contextual factors. These results support the second part of the sixth hypothesis which says that the contextual job characteristics and their proposed mediator of organisational commitment exert more influence over the job related burnout.

² The scale was produced by the sum of the sub-scale of emotional exhaustion and disengagement from work tasks. The internal consistency of the scale was high in present sample (Cronbach’s alpha = .85).
6.4 DISCUSSION

6.4.1 Empirical validity of the present job design model

The results reported above provide generally strong support for the ability of the critical job characteristics to influence employee wellbeing and productivity via the mediating variables of learning on the job and organisational commitment. These results give support to the hypotheses of the model presented earlier. However, some specific problems and uncertainties were identified which are presented below.

In general, all hypotheses proposed in the current study were supported by empirical evidence. The basic relationships between the job characteristics and the proposed outcomes measures (Table 6.1) were as predicted and generally of substantial magnitude; although correlations involving the "objective" measure of work performance were lower than those for the self-report outcome measures. Similarly, substantial support was found for the proposition that the variables of learning on the job and organisational commitment are mediating the job dimensions and outcome measures. Furthermore, learning on the job exerts more influence over the relationship between 'job content' characteristics and individual work performance, while organisational commitment has more influence on the relationship between contextual characteristics and burnout (see Table 6.2). Although all the indices were statistically significant, the structural equation modelling indicated that learning has more influence on work outcomes in comparison with organisational commitment.

Furthermore, both content (task) and contextual characteristics were found to be important in determining work quality that is responsible for enhancing individual work performance and reducing employees' feeling of job related burnout. In general,
the model attained substantial gains in the explained variance for the dependent variables. That is, job characteristics along with their corresponding mediators influence positively work performance and reduce job related burnout.

The result showed that better design of the current characteristics has potential to enhance work performance. The gains in performance obtained by the current model may be due to the fact the current characteristics are feeding the sources of individual work performance that were identified in the accumulation of work performance research (i.e. motivation, ability and opportunity; Blumberg and Pringles, 1982). As indicated earlier in chapter 5, both categories of job characteristics are feeding the three requirements needed for effective work performance. In particular, these characteristics are providing employees with intrinsic motivation to perform better, learning opportunities that improve their self efficacy and skill utilisation, and the opportunity to utilise their skills. The current results provide further support for previous findings that stressed the multi-source structure of work performance (Blumberg and Pringles, 1982; Parker and Turner, 2002).

Nevertheless, the substantial gain in work performance was for the self-appraisal of work performance rather than the "objective" measures. The correlation between the two methods is low and insignificant \((r = .11)\) and the self-appraisal assessment seems to be more lenient. Besides, the self-appraisal of performance has higher explained variance in comparison with the "objective" performance assessed using organisational records (see Table 6.2).

However, substantive and methodological explanations are possible for the relative weakness of the results involving "objective" performance measures. At a substantive level, it may be that the conceptualisation of each performance measure (self versus
objective measures) has an impact on the results. The self-appraisal of performance was multi-faceted: employees’ performances were assessed based on their task proficiency levels, their contextual performance (i.e. helping their co-workers) and their proactive behaviours (e.g. asking for challenging tasks). The objective performance was assessed by only one dimension that is based mainly on their proficiency level of delivering their job tasks. This conceptualisation of performance may have positive effects on self-appraisal performance which seems to be more reliable and has wider perspective. Therefore, these results would provide support for previous findings that acknowledged using the multi-faceted structure to assess work performance (e.g. Borman & Motowidlo, 1993; Parker & Turner, 2002).

Moreover, the results for objective performance may have been compromised to some extent by the data collection difficulty. A number of employees refrained from revealing their identity and some of those who reported their personal information did not have any performance records for various reasons (see section 6.2.3). This left the measure with a substantial portion of missing data (i.e. 27%). Therefore, employees’ previous performance was calculated on 122 employees while task contextual and proactive performance was calculated on 168 which is the same number for job dimension and mediators. Therefore, the self appraisal data are more statistically adequate for comparison across the sample studied.

Another explanation may lie in the fact that self-appraisal of performance items were in the same questionnaire as the items tapping the job dimensions and the mediators. For that reason, relationships involving the self-appraisal measure may have been inflated because of common method variance. Relationships involving objective performance measures do not have such problem because they were
estimated at a different time and different methods. Therefore, it might be the self
appraisal data are inflated and the objective measures reflect the actual association
between the job characteristics and work performance, which explains just 11% of the
variance in the relationship (see the error indices for performance in Figure 6.3).

The final explanation of the differences between performance measures could be
due to the method used to convert ‘employees’ previous year performance scores in
both organisations. Performance scores for the police force were numerical and based
on the number of successful investigations achieved by each officer and assessed by
qualified assessors. The bank staff performance was based on their proficiency level
in delivering their tasks that were estimated by their direct supervisors. Although the
converting method was the same in both organisations (7 point Likert-type quantum
ranging from 1 = very poor to 7 = excellent), it might be that the converting method
was not suitable as the two organisations have different work natures, different
organisational climates and different performance assessment procedures (e.g.
qualified assessors for the police officers).

On a different subject, the sample addressed in the present study expressed high
levels of job burnout. Almost 80% of the total sample expressed that their jobs make
them feel exhausted and nearly 75% expressed that they feel disengaged from their
jobs. However, one of the reasons for substantial increase in burnout in the current
study could be due to the type of jobs included in the sample that require frequent
contact with people. Classical research has showed that burnout is high in the human
services such social work, health care, police force and teaching (Maslach, 1982).
Bearing in mind that more than 56% of the subjects were from the police force (i.e.
social work), it is not surprising to find that burnout is high in the current sample.
However, there was a satisfactory amount of the explained variance in job related burnout and its sub-dimensions of disengagement from job task and emotional exhaustion. The job characteristics along with the hypothesised mediators seem to have a strong ability to influence burnout. Therefore, improving these job characteristics seems to be essential in reducing job-related burnout. The median correlation between the critical job characteristics and the feeling of exhaustion is .25 and the disengagement of work tasks is .32. However, it will be difficult to indicate if these indices are valid clinically or not. Although it will be useful to know such information, the model focuses in this early stage on how to design jobs (the job characteristics) and producing norms for the burnout is not the focus of this thesis.

To summarise, the results reported provide generally strong support for the ability of the job dimensions in enhancing individual work performance and reducing job-related burnout. Although the model achieved substantial gain in the explained variance of the self appraisal of work performance, the model does not function well with the objective measures of work performance. However, several explanations were given; unfortunately, the present data do not permit a test of the degree to which the various explanations offered above are responsible for the apparent attenuation of the relationships involving the objective and subjective performance effectiveness.

6.4.2 The nature and effect of the mediating variables

Results presented in section 6.3.2.3 and 6.3.3 provide general and sometimes quite strong support for the proposition that the effects of the critical job characteristics on the outcome variables are mediated by the mediators of learning on the job and organisational commitment. The SEM results indicated that learning is mediating the
'job content' characteristics (i.e. intellectually challenging tasks, control, feedback, and training adequacy) and the outcomes of individual work performance and burnout. The 'job content' variables are enhancing employees' self efficacy and providing them with the opportunity of skill utilisation. The study provides empirical evidence to confirm what has been reported in the job design literature (e.g. Karasek and Theorell, 1990; Leach et al; 2003; Holman and Wall, 2002) in which employees with higher self efficacy and opportunity to use their skills are developing mastery over their daily tasks. Expert and confident employees are better performers and have proficiency in delivering their work tasks (Warr, 2002b). Furthermore, when employees have mastery over their job tasks with higher self efficacy their wellbeing is better (i.e. less emotional exhaustion and higher engagement with their tasks). This is probably due to the fact that enriched 'job content' design enables employees to develop cognitive strategies to cope with the work daily pressure. Jackson (1989) suggested that people who feel 'in control' are more likely to use proactive problem solving strategies to cope in uncertain situations.

One implication of these results is that employees are not passive recipients to work regulations (as suggested by the JCM) but they are 'active' in developing new strategies according to the work system applied. These results are supporting contemporary job design research that acknowledged the role of learning on the job in enhancing employee's personality that influences in turn, their productivity and wellbeing (Action Theory, Hacker, 1986; Demand Control model, Karasek, 1979). The current study provided empirical evidence to support the view that greater challenging tasks, decision authority, regular feedback and continuous training enable employees to deploy and develop a wider range of skills. Such skill utilization in turn helps them to cope with their job demands more effectively and thus, reduce the
feeling of burnout. Therefore, these results are not only emphasising the indirect relationships between job design and work outcomes but also that employees' developmental needs (i.e. learning) is adding valuable information to our understanding of how work design enhances employees’ performance and wellbeing. However, one limitation of these results is that we studied the learning related outcomes (skill use and skill efficacy) but did not measure the learning process directly by studying actual changes in knowledge and skill. Future research should therefore measure the learning process by examining learning strategies, learning styles, and the level of knowledge itself (cf. Holman and Wall, 2002).

Similarly, the results showed that organisational commitment is mediating the contextual characteristics (i.e. supportive supervisors, supportive co-worker climate, work-life balance, financial rewards and recognition) and wellbeing. These results provide further empirical evidence to literature found in occupational health psychology (e.g. Parker et al 2001; Meyer, 1997; Robinson, 1996; Guzzo et al, 1994; Allen & Meyer, 1996; Haslam, Powell and Turner, 2000; Warr, 2002a) that indicates jobs with less stressors (e.g. positive perception of the contextual characteristics) are encouraging employees to bond with their organisation and increase the amount of involvement, identification and loyalty that they devote to their job. This psychological state of identification seems to reduce employees’ feeling of burnout, as well as motivating employees to improve their work performance.

One implication of the above discussion is the fact that job design also has motivational mechanisms. However, reviewing the job design research conducted in the last 10 years indicated that researchers were oriented to study the role of cognitive mechanisms (e.g. learning, empowerment, quick response) and neglected motivational
ones. It seems that researchers have accepted the fact that the Critical Psychological States (CPS) of the Job Characteristics Model (JCM) are not adding much explanation of the relationships between work design and work outcomes. They accepted this fact and shifted their research interest to the cognitive mechanisms without attempting to develop new mechanisms that have a motivational nature. The present study showed that the motivational mechanisms added important information (to some extent) to our knowledge of understanding how work outcomes occur. In the current research, we addressed the organisational commitment as one of the potential motivational mechanisms. However, this is not the only mechanism suggested by the theoretical research as others were suggested but they need to be tested empirically. For example, Kelly (1992) has suggested ‘goal setting’ as a potential motivational mechanism. The author explained that the goal setting elements may be responsible for directing behaviours and therefore improving performance. Kelly also suggested ‘job benefits’ as another potential mechanism that has motivational nature. He noted that this state is based on the instrumentality theory in which after job redesign, workers may perceive closer links between effort, performance and valued rewards.

In conclusion, the present results showed that both the cognitive and the motivational mechanisms provide better understating and increase our knowledge of how job design can enhance productivity and employees wellbeing. However, the model also showed that the cognitive mechanism is providing better understanding of how enhanced ‘job content’ design improves work performance. Similarly the motivational mechanisms provided better understanding of how enhanced ‘job context’ design improves employees’ mental health. The multiple regression results showed that the ‘job content’ characteristics, along with the mediator of learning on the job exert more influence over work performance while job context characteristics,
along with organisational commitment, are contributing more to job-related burnout. A simple explanation for such results could be due to the type of each category (i.e. content or context job feature). That is, the ‘hard’ aspects of job design have a greater effect on the employees’ knowledge and confidence and therefore, reflect on their performance level. In the same way, the ‘soft’ aspects of job design influence more employees’ attitudes and perceptions that would reflect on their mental health and job-related wellbeing. It seems that jobs with satisfactory contextual variables, in which employees have good relationships with their supervisors and co-workers, reasonable work-life balance, and satisfactory payment is encouraging them to involve with their jobs, feel proud and therefore, the feeling of burnout would be decreased.

Despite the above findings, some specific problems and uncertainties were found concerning the role of the mediating variables. The first uncertainty is that the SEM analysis showed that the two mechanisms do not have an equal role in the model. The cognitive mechanism appeared in SEM analysis to have a huge impact over outcomes in comparison with ‘commitment’ impact. The path standardised coefficients between learning and outcomes were four times stronger than those of commitment. This may indicate that ‘commitment’ as a mechanism is not adding a ‘significant’ impact to the explained variance in performance or wellbeing. However, although the ‘commitment’ appeared to be weak in comparison with ‘learning’, this does not mean that commitment is not important from a theoretical point of view. The poor effect of commitment could be due to the sample, to the measure, or to the statistical technique but still, the role of commitment is important especially to the contextual factors. This is supported by the fact that when learning is excluded from the regression, the commitment appears to have a stronger effect over burnout when predicted by job
context characteristics. Organisational commitment and job context characteristics explained 57% of the burnout variance while job content and learning explained only 25%. This aligns with our sixth hypothesis in which we indicated that motivational mechanism is more important for wellbeing while the cognitive one is more important for performance.

Another explanation could be due to the fact that some contextual factors have a strong effect on burnout, which is beyond organisational commitment. For example, poor work-life balance may have direct effect on the feeling of burnout that is beyond the feeling of organisational commitment. This can be seen from the low regression coefficient between work-life balance and commitment (.30). In the correlation analysis the work-life balance correlated strongly with exhaustion (-.60) but poorly correlated with commitment (.21). Therefore, it might be that such a direct effect between some job context factors and outcomes weakened the mediating role of commitment. We should take into account that the sample consisted mainly of police officers who seem to have higher levels of exhaustion than average employees.

Another uncertainty in the model is due to the paths between characteristics and mechanisms. Although we assumed that each of the mechanisms should correlate with particular characteristics (i.e. job content variables with learning and job context factors with commitment), a closer look at the correlations presented in Table 6.1 indicates that this is not the case. Learning on the job was determined not only by the ‘job content’ characteristics but by ‘job context’ characteristics as well. Similarly organisational commitment was determined by both job ‘content’ and ‘context’ characteristics. However, the correlations between ‘job content’ characteristics and ‘learning’ are slightly higher than those between ‘learning’ and ‘job context’
characteristics and the same applies for organisational commitment and ‘job context’ characteristics. Still, these findings were contrary to expectations as the linkage between the variables does not operate as specified by the model.

The explanations for these anomalies may derive partly from the relationships among the job dimensions themselves. The 10 dimensions are not empirically independent nor are they expected to be. Jobs that are good are often good in several ways, and jobs that “bad” are often generally bad. Therefore, the median intercorrelation between the 10 job dimensions is .24. This is similar to what has been reported between the Job Characteristics Model’s dimensions. Hackman and Oldham (1975) report a median intercorrelation of .26 and a median correlation of autonomy with other dimensions of .36. Furthermore, this lack of separateness between characteristics may be due to the sample size which was small in comparison with other studies conducted in the job design landscape. For instance, the JCM’s structure was tested on 658 individuals. Additional research will be required on a large size sample using various jobs and occupational fields to obtain increased specificity and clarity regarding the function of the mediators and their associated sub groups from the critical job characteristics list.

6.4.3 Limitations

The present evidence for the job design model is still preliminary. As the above findings were derived from, to some extent, a small sample of two occupational sectors (police force and banking), this presents a need to extend our model to other industries, before any generic conclusion can be formulated.
Secondly, the present study relied on self-report measures of both independent and dependent variables (except employee’s previous year performance). The problems associated with this practice are, for instance, a possible inflation of the strength of relationships (e.g. Spector, 1992). For logistic reasons, we could not obtain other objective data to verify the self-report scales and therefore reduce the tolerance of subjectivity in data collection. However, we tried to enhance the response tendency of self-report measures by a) classifying job characteristics scales in terms quite different from those of the outcomes variables, b) measuring the indicators with differing response formats and c) positioning measures of the indicators in different locations throughout a larger survey questionnaire (for police force sample only). Some studies indicated that such procedures enhance the response tendency of the self-report scales (e.g. De Jonge et al., 2000).

The final limitation of the current study is due to the cross-sectional design which precludes a causal interpretation of the relationships between job characteristics, mediators and work outcomes. A longitudinal design is needed to decide such relationships.

Nevertheless, the implication of the present model seems to be important for further research in the field of organisational behaviour. The implication of this model for job redesign as well as recommendations for further directions, will be discussed in detail in the next chapter which will be dedicated to presenting a general discussion and concluding remarks of the present research.
6.5 CONCLUSION

In conclusion, this study builds on earlier findings that were either achieved in the present research or literature. The empirical evidence for the postulated job design model does support our hypotheses and affirms what the current study, as well as several prominent theoretical models, hypothesised regarding the positive relationships among job design and work performance and the employee’s wellbeing (Hackman and Oldham, 1976; Karasek and Theorell, 1990; Siegrist, 1996; Warr, 1987; 2002a).

Another conclusion is that job design enhances work performance and the employee’s wellbeing via cognitive and affective mechanisms. This provides evidence that employees are not ‘static’ but ‘active’ recipients to the way jobs are designed and regulated. Unlike the job design research in the last 10 years that focused on the cognitive mechanisms, the present study provided evidence that the cognitive and motivational mechanisms are adding valuable information to our understanding of how job design increases productivity and improves mental health. Therefore, job design research should include both types of mechanisms in future research. However, the research also should try other cognitive and motivational variables suggested by the literature. As we indicated on several occasions, choosing any particular variable should be decided via a thorough diagnosis of the work circumstances and organisational type prior to any job design research.

However, on a practical level, the present study indicated that job characteristics themselves are important predictors of individual work performance and job related burnout. In addition both job content and context are important aspects in job redesign and work in parallel in producing work outcomes. Worksite interventions by enhancing ‘job content’ conditions and decreasing or stabilising work stressors (i.e. by increasing workplace social support, work-life balance, and organisational rewards) are useful starting-points which could enhance employees’ work performance and reduce their job-related burnout.
Chapter 7

GENERAL DISCUSSION AND CONCLUDING REMARKS

7.1 INTRODUCTION

This chapter summarises the findings from each of the previous studies. This includes integrating the general results to discuss their theoretical and practical implications under the framework of the model developed in the present research and from the accumulating job design literature. First, the general aims of the study are presented with a summary of the general results of the empirical part. Following that, implications for job redesign within the current model are discussed. This chapter finishes with a general examination of the model within the limitations of the present study that would provide avenues for further directions and future research.

7.2 THE GENERAL AIMS OF THIS STUDY

The aim of this thesis is to identify the critical job characteristics in contemporary jobs to achieve a comprehensive list that is more appropriate to the developments occurring in the organisational landscape. The call for identifying such job characteristics list arose for two reasons. First, a historical critique of existing job design theories demonstrated that the methodology used to identify the critical job characteristics of job design approaches did not address the employees’ opinions or attitudes towards what can be considered the important job aspects in diagnosing the quality of jobs. The review indicated that most of the job design theories developers
identified the critical job characteristics of job design approaches (e.g. JCM) based on literature review and personal judgment. None of the developers provided empirical evidence to support his/her reasons for choosing those particular characteristics.

The second call for an updated job characteristics list emerged from the critical review of the job design theories, and Job Characteristics Model in particular, that demonstrated that the dominant theories are narrow, in terms of both a limited focus of the job characteristics that need to be ‘designed’ and a lack of attention to non-motivational explanations of enhanced employee’ wellbeing and work performance. Therefore, the main conclusion was that there is a need for a broader range of job dimensions that address the new workplace developments in general and the growth in service sectors in particular. Another conclusion was that job design research needed to consider developmental mechanisms (learning) and investigate how it may facilitate employees’ performance and wellbeing.

Consequently, a new perspective for identifying the critical job characteristics was put forward. It was argued that exploring employees’ opinions and reactions to workplace developments from the job design perspective will help in identifying the ‘good’ job features and thus, the critical job characteristics in contemporary jobs. Besides, we expected that identifying the job characteristics from the employee perspective will help in solving the problem of the narrow focus of existing job theories in which they focused on designing the ‘job content’ characteristics (the features of the tasks and how they are regulated or structured such as task autonomy and variety) and neglected the job contextual factors (the features of the job context where the tasks are executed such as managerial practices and rewards system).
By adopting such an alternative perspective (the employee's perspective), some expectations were put forward. Specifically, we expected that by talking to people about their work and what they like or dislike, a list of all the possible job features in contemporary jobs can be identified. The next step is to investigate such list further to distinguish the most important features as well as structuring them into broader dimensions using quantitative techniques and a large size sample. Our goal was to produce a list of the critical job characteristics such as the one produced by several job design authors who identified the characteristics based on literature review and personal judgments (e.g. Warr 2002a; Parker et al, 2001). However, we decided to produce it empirically and from the employee’s perspective. Finally, the overarching aim of identifying such a list was to investigate the role of an expanded job design perspective (both at the characteristics and mechanisms levels) in modern jobs, and the consequences of these designs on employee wellbeing and productivity.

To meet these objectives, a number of studies were conducted in order to develop an expanded job design model that has a wider perspective, as well as the potential to address some of the existing job design concerns. In the following sections a summary of the main results of these studies is presented.

7.2.1 Identifying the critical job characteristics

A list of the critical job characteristics was achieved via two studies. The first one is qualitative (interviews and content analysis) and the second one is a quantitative study (checklist and factor analysis). In the first study (see Chapter 3), qualitative data were collected from 75 employees working in modern jobs. We asked these people about what they like or dislike in their jobs, what motivates them to perform better,
and what gives them satisfaction and reduces their stress at work. The content analysis indicated that there are 77 job features that can be considered motivators to employees working in contemporary jobs. The main conclusion of this study was that most of the existing job characteristics are still considered important aspects in the current workplace because they were mentioned frequently by the participants but they are not the only ones. Other dimensions appear to be important especially the cognitive demands of the job and the job contextual factors (e.g. social contact and work-home conflict).

The second study aimed to bring structure to these features and categorise them into broader dimensions using quantitative techniques (i.e. factor analysis). Therefore, the 77 job features were converted into a checklist and distributed to 424 employees working in various jobs and occupational sectors. Their mission was to distinguish the important job features from the less important ones using 5-point Likert scale ranging from ‘not important at all’ to ‘very important’. As a result, 46 features were identified as the most important ones. The next step was entering the abbreviated list into factor analysis to categorise them into broader dimensions. The study resulted in identifying 10 job characteristics that were perceived as critical aspects in contemporary jobs. These characteristics are intellectually challenging tasks, control, feedback, training adequacy, supportive supervision, supportive co-worker climate, work-life balance, financial rewards, recognition and physical environment. These characteristics were categorised into two groups based on their role in job redesign, the first group is the ‘job content’ characteristics and the second one is the ‘job context’ characteristics. This distinction was seen as helpful in distinguishing the characteristics based on their role in job redesign and the outcomes that they were expected to influence. Job context characteristics contained the ‘hard’ aspects of the job such as the control
while job context characteristics represent the ‘soft’ aspects of the job such as the social contact and work-life balance that need to be taken into account when redesigning jobs. We already explained in Chapter 6 how job content characteristics have a greater influence on the work performance while job context characteristics have more of an influence on job related burnout.

Such categorisation aligns with the job design literature. For example, Turner and Lawrence (1965) suggested that task characteristics are a category that has a direct impact on the performance. Herzberg (1959) already referred to the ‘hygiene’ factors, which actually were the contextual factors, which affect the employees’ level of wellbeing and satisfaction. However, although we made a distinction between those factors, we provide empirical evidence that emphasised that both aspects are complementary as far as the quality of a job is concerned. This also aligns with Warr’s (2002a) literature review in which he mentioned some studies that provide empirical evidence that both aspects (task characteristics and context characteristics) work together in affecting performance and wellbeing.

The final study of this research was to develop these characteristics into a job design model that explains how these characteristics influence employee wellbeing and productivity. The aim was to evaluate these characteristics and determine their ability to predict performance and wellbeing. Another aim was to test the link between these characteristics and specific cognitive and motivational mechanisms that were suggested by the accumulating job design research. Two mechanisms were put forward (see Chapter 5). The first one is ‘learning on the job’ which assumes that employees who work in enriched ‘job content’ design have more potential to develop cognitive strategies that facilitate the use of their valued skills as well as enhancing
their self efficacy. The other state is the 'organisational commitment' that assumes that employees who work in jobs that above a certain quality of the 'job context' factors are more inclined to develop a sense of commitment to their employing organisation. People who develop a certain level of both cognitive and motivational mechanisms are employees with better abilities, personality, and attitudes who tend to perform better and able to cope with work daily pressure and thus have better wellbeing.

In the following sections we will discuss the finding of these studies in detail with emphasises on the 'new' results that added a significant contribution to job design research both at theoretical and practical levels.

7.2.1.1 Job content (task) characteristics, a wider perspective

As we indicated earlier on several occasions, 4 job content (task) characteristics were identified by the employees working in contemporary jobs as important aspects in the modern workplace. These characteristics are: intellectually challenging tasks, feedback, control, and training adequacy. In Chapter 3, participants indicated that such characteristics make the job interesting and help them to carryover the work tasks effectively and give them a feeling of comfort and less stress. In Chapter 4, we explained how the employees reemphasised the degree of importance of these features in their current job and indicated that they are critical to their work life. In Chapters 5 and 6, we provided empirical evidence of the role of these features in enhancing employees' abilities and attitudes which, in turn, positively influence their productivity and wellbeing.
In general, most of the 'content' characteristics addressed in this thesis are promoted by previous job design theories and research stressed their role in job redesign. However, in the present research we acknowledged what previous theories have indicated of their critical state but we provided a wider perspective for the general conceptualisation of each of them with flexibility in choosing the appropriate instrumental definition when attempting job redesign. We will discuss this issue in detail next.

The first characteristic that was reemphasised in the present research is the 'intellectually challenging tasks' that represent the cognitive demands of the job. This aspect was mainly a combination between cognitive demand (e.g. problem solving) and variety aspects that were promoted by other theories such as the Job Characteristics Model (JCM) and Demand-Control model of strain (DC). However, in the current study these dimensions have a wider perspective. While the JCM promoted only variety as a means to intellectual challenge and DC promoted the cognitive demands, the intellectually challenging tasks characteristic addressed the two dimensions in a single factor. Therefore, this aspect can be described as having wider perspective than the narrow focus promoted by each of these two theories.

The other wider perspective addressed in the present study is the control aspect. Control was addressed strongly in different forms in job design theories. The JCM addressed control in the form of autonomy offered to the employee to decide work methods tools and pace (Hackman and Oldham, 1976). The Demand-control model defined control in terms the level of decision authority offered to the employees (e.g. Karasek et al, 1998). Action Theory addressed control in terms of decision latitude and the chance to involve employees in the planning level and emphasised that 'work
should allow employees to choose their own work strategy’ (Frese and Zapf, 1994). The Vitamin Model addressed different aspects of control such as decision latitude, discretion and autonomy (Warr, 2002a). Although these concepts are overlapping in their general frameworks, they have different implications when attempting job redesign. For example, control for manufacturing settings (machine operator) may be different from the type of control given to employees working in knowledge-oriented jobs (e.g. consultant). The decision authority or latitude for choosing work strategy for the latter jobs seem to be more important (Parker et al, 2001) while autonomy to choose job methods, tools, and work pace is more applicable for machine operators (Jackson et al, 1993). In the current research we adopted all these instrumental definitions as relevant aspects in the modern workplace. As we demonstrated in Chapter 4, control was loaded on two different dimensions in the factor analysis (autonomy and decision latitude). This is the main reason why we did not adopt any particular definition of the ‘control’ but rather we called for a thorough diagnosis of job context before attempting any job design research or redesign intervention.

However, we tried to employ this concept (thorough diagnosis) when we tested our model in the field. We looked at the organisation’s nature and worked closely with management and employees to understand the organisation nature and how their work is structured. For example, with the police workforce sample, we found that it is irrelevant to diagnose job control in terms of the autonomy offered to officers in controlling their work methods, tools or work pace as their work is tied with many political and societal considerations. Accordingly, we saw that decision authority is more applicable. Police officers indicated that they require more decision authority in which they can decide what should be done without being tied to one or two options (e.g. having the opportunity to decide if the domestic violence can be solved within
the household rather than having one option which is arresting the offender). Therefore, in the current research we provided the general concept of the characteristic which is 'control' but we leave the details for each practitioner or researcher to decide the best instrumental definition that needs to be implemented and the measures that should be used (the process can be done also by conducting pilot investigation e.g. interviews with the staff and the management).

The third job content characteristic considered one of the core aspects in job design is 'feedback'. This characteristic was addressed by the JCM in terms of feedback from the job itself (Hackman and Oldham, 1976). In later writing, the authors expand the concept to include feedback from agents such as feedback from supervisors, colleagues and customer. In the present study, the participants addressed all these types of feedback. Therefore, we adopted all of them under the umbrella of feedback. Again deciding the best type of feedback for job redesign should be based on the type of organisation and the products they deliver. In our third study, we took into account when deciding the feedback definition that the employees in the bank and police force samples will appreciate feedback from supervisors and from colleagues as well. Employees tend to evaluate themselves based on the social context that they are within. This means that feedback about their performance from their colleagues and supervisors would be valuable in that respect. Therefore, the feedback scale used in the third study measured the feedback from the job itself, supervisors and colleagues. However, if the sample were different (e.g. machine operators) we would choose another feedback scale and this is the core of the concept of 'pre diagnostic step'.

The final job content characteristic addressed in the current research is 'training adequacy'. Training can influence the development of employee cognitive skills and
was seen a very helpful in influencing employees' attitudes and behaviours. Training is seen as very important because it gives the opportunity to learn new skills and talents but most importantly because it reduces role ambiguity. Role ambiguity occurs when an individual does not have sufficient role-related information to perform effectively and is unclear about what is expected (cf. Parker and Wall, 1998). Role ambiguity was related to many organisational and individual outcomes such as low performance and dissatisfaction. In Chapter 6, we indicated that training adequacy enhances employees' skills and personality (self efficacy) and therefore positively influences work productivity and reduces job related burnout. Despite this, training as a job characteristic was overlooked in job design research.

However, there are some possible explanations for the effect of training adequacy in modern work contexts. First, in fast changing environments, as is the case in modern jobs, employees need a broader framework to understand their duties and what is expected from them. That is, people's eyes and ears need to be opened to events and issues occurring in their working area to have the required information needed to deliver their duties effectively. It has been argued throughout this thesis that employees within knowledge-oriented jobs need specific types of knowledge to enable them to contribute to the business in new ways, such as knowing about strategies, processes, customers, and business issues. In addition, training also has a critical role in providing people with the specific knowledge necessary to take on high-involvement roles. This is particularly the case because there are several types of skills and knowledge that can not necessarily be learnt on-the-job, yet they are critical to changing the way people think about their role and help them in problem solving.
In conclusion, the present ‘content’ characteristics addressed most of the prominent characteristics promoted by other job design theories and are necessary for modern jobs. The characteristics addressed the heavy demands on knowledge and mental tasks in contemporary jobs and identified up-to-date job content characteristics that emphasised increasing the job cognitive demands, training potential, feedback and control that were found to positively affect employees’ skill utilisation and self efficacy, which are focal aspects in job learning (Holman and Wall, 2002). As indicated by Gottfredson (1997); Parker et al (2002); Holman and Wall (2002), and Warr (2002a); job complexity and continuous learning are essential elements in producing creative and proactive employees, as well as developing cognitive strategies to cope with average work daily pressure.

7.2.1.2 Job context characteristics, new dimensions to ‘design’

Six job contextual factors were identified in the current research as important aspects in contemporary jobs and need to be considered when attempting job redesign. Some of these factors were addressed by some job design theories (e.g. social support in Demand-control model) but most of them were overlooked in job design research. These characteristics are: supportive supervision, supportive co-workers, financial rewards, recognition, work-life balance and physical environment.

Perhaps these factors where neglected in job design research because of the popular belief that such job aspects can not be designed as they represent psychosocial variables that relate to the group dynamic or to the individual differences, which are not visible aspects of the job like control and feedback. Therefore, some job design models addressed these factors as moderators or
contingences. For example, Hackman and Oldham in the JCM considered that social contact is an aspect of the job that can not be designed because it is a group dynamic feature that does not relate to the job content and can not be controlled by the organisations. Therefore, they addressed it as a moderator that influences the success of the job redesign intervention. That is, if the people in the job are naturally sociable and supportive to each other the job redesign will be more successful (Hackman and Oldham, 1980). This assumption was not supported by empirical evidence (e.g. Oldham, 1996) and did not find acceptance between researchers because it contradicts the idea that social contact can be enhanced by introducing particular practices (e.g. non-competitive environment) and job context can be arranged to open channels of communications between employees to increase the support from each other (communal rooms). In addition, the Organisational Citizenship Behaviour (e.g. employees help and support each other) research (e.g. Koys et al, 2001) indicated that aggregate citizenship behaviours would improve group performance because they help people work together and coordinate activities. Employees who help each other would not have to go to supervisors for help, leaving the supervisors free to do more important things.

Therefore, we emphasised in this thesis that the ‘soft’ job aspects can be designed in the same way the ‘hard’ aspects of the job are designed. This has been variously called ‘social control’ (Oliver and Davies, 1990), ‘cultural control’ (Child, 1984), and ‘third order control’ (Hayes et al, 1988). Oliver and Davies (1990) suggests that changing the social organisation of workplace are as important (if not more important) elements of the management strategy than are the ‘harder’ aspects such as introducing new technology or new work system. For example Bratton (1993) suggests that workplace organisations need to adopt a strategic approach where management must
“treat employees as a valued asset rather than a variable cost, see training and development as an asset, and view employment relations as necessary prerequisites to recruit and retain an effective and committed workforce” (p 398).

In general, the present thesis provided empirical evidence that emphasised the importance of the role of job contextual factors in job design. For example, we indicated earlier that supervisory roles and behaviours have a huge impact on job quality. Rather than controlling and coordinating, the supervisor’s role should become one of facilitating employee’s development, and include activities such as setting objectives, training/coaching, managing boundaries, and providing recourses. There is reason to think that supervisors who are ‘supportive’ are influencing employee’s attitudes and reactions to the jobs. First, supervisors have the key role in developing control to the employees. If they cling to their controlling and directing role, this affects the extent of employees’ job control, and thus, will affect the development of employees’ orientations towards the job. Second, supervisors have a critical role in helping to foster employees’ acceptance and understanding of their role, as well as their understanding about the work process, strategies, goals, and business issues. Finally, supervisors can be the most influential people in the learning process, being the first contact between the management and the employees, and often being responsible for organising training and conducting performance appraisal. All these reasons are strong enough to include supervisors support as a distinct job characteristic on its own right.

Similarly, the present research showed that recognition and remunerations (the organisational rewards) are important aspects that needed to be taken into account in job redesign. They are seen as capable of fostering employee commitment and
affective attachment to the organisation’s goals. As such, they are highly relevant to the development of employees’ attitudes and behaviours. However, this is not to say that payment or recognition systems will be sufficient to change people attitudes on their own. These should be worked in parallel with the other job dimensions to foster and facilitate the development of employees’ attitudes and personality.

Furthermore, the present study introduced a new dimension to job design that is seen as an important aspect that needs to be addressed when redesigning jobs which is work-life balance. Difficulties in juggling the demands of work and family roles have rarely been addressed in job redesign (Parker et al, 2001). In the present thesis we provided empirical evidence to show that this dimension has a direct influence on how employees perceive their jobs. It seems that regardless of how much employees have control or challenging jobs, they will express their dissatisfaction if the job affects their personal life. We explained in Chapter 3 that some employees quit their favourite jobs because it was negatively influencing their personal life. In chapter 4 we showed that this dimension was loaded on two different aspects in the factor analysis (work-home conflict and home-work conflict). The emphasis on such a job aspect may be due to the workforce composition. Statistics reported that the new workforce is changing and the number of women and single parents is increasing. This composition increases the possibilities of work-to-home and home-to-work interfering (Parker et al, 2001). As we presented in Chapter 6, this interfering affects work commitment or the involvement that employees devote to their jobs and affecting, in turn, work performance and causing burnout. The present results address this important dimension and attempt to be a catalyst for further research in order to address the importance of designing jobs to promote work-life balance.
However, we provided in Chapters 3 and 4 a detail description of why job context characteristics are important aspects in job design research, and we illustrated in Chapters 5 and 6 how they influence employees’ personality and behaviours. We are not going to repeat this again but the focus here is to stress that these new dimensions need to be addressed from now on when redesigning jobs. Another point is that these factors can be designed in the same way control or feedback is designed. However, we will return to ‘how’ to design these aspects later in this chapter.

7.2.2 Job design, performance and wellbeing

As we indicated in Chapter 1, the overarching aim of the study is to identify the critical job characteristics in contemporary jobs in order to investigate the consequences of these designs on work performance and employee’s mental health. Accordingly, Chapters 5 and 6 were dedicated to developing a job design model that explains how the characteristics obtained in the first two studies (the expanded job content and context features) would influence work performance and employee’s wellbeing.

Based on the theoretical suggestions and empirical evidence, it was proposed that employees who have more broader and proactive tasks (e.g. challenge, control), and a more supportive working environment (e.g. social support, work-life balance, rewards) would be better performers and have better mental health than those who did not. This prediction was restricted to those who can ‘learn’ from their jobs and feel that they are ‘benefiting’ from their employment in their organisations. Thus, in other words, the development of employee’s knowledge and commitment were put forward
as a means by which enhanced job design promotes high performance and wellbeing within the modern workplace environment.

This proposition was investigated in the final study (Chapter 6). ‘Learning on the job’ and ‘organisational commitment’ were shown to predict self and supervisory rating on high performance dimensions and to predict people’s burnout levels. That is, the higher people score on ‘learning’ and ‘commitment’, the more likely they were rated by themselves or supervisors as good performers, and the more likely they will report higher levels of wellbeing (i.e. less burnout).

These findings are important for job design research. First, they emphasised that better performance and wellbeing are not just an outcome of high control given to employees but also an outcome of quality of the work life. As we discussed on many occasions, ‘job context’ aspects were seen by employees as having an important role in the quality of working life and have to be addressed when jobs are redesigned. Second, the motivational mechanisms are not the only ones that explain why enhanced job design leads to better performance and wellbeing. The present study showed that cognitive mechanisms are providing valuable information to our understanding of how job design leads to higher performance and wellbeing.

Although the current study provided further empirical evidence of the importance of the role of cognitive mechanisms, these findings are not new to job design theory as many studies indicated that cognitive mechanisms are adding important information to our understanding of how job redesign lead to better personality or effectiveness (Holman and Wall, 2002, Leach et al, 2003; Parker et al, 2001). However, in the current study we reemphasised the importance of the role of both cognitive and motivational mechanisms in job design theory. We indicated in Chapter
6 that cognitive mechanisms superseded the motivational ones in job design research in the last 10 years. This can be considered a drawback in job design research as motivational mechanisms have an important role especially to redesigns that target employees' wellbeing. We showed via the regression analysis in Chapter 6 how the motivational mechanism of commitment exerts higher influence over wellbeing than performance, when wellbeing is predicted by the 'job context' factors. Also we indicated that cognitive mechanisms influence work performance more when wellbeing is predicated by the 'job content' characteristics. This means that each mechanism has, to some extent, a different role in job redesign. In other words, motivational mechanisms have a more important role for employee wellbeing while cognitive mechanisms have a more important role in explaining work performance. These results can be an explanation of why the Job Characteristics Model (JCM) was more successful in explaining the outcomes of motivation and satisfaction rather than performance and absenteeism. The JCM focussed on motivational mechanisms and neglected the developmental ones that were found to be important for work performance. We will discuss this issue in more detail in the following sections.

7.2.2.1 Cognitive mechanisms and work performance

The findings in chapter 6 showed that the cognitive mechanisms are providing better explanations for work performance. Specifically, 'job content' characteristics along with the cognitive mechanisms of job learning explained more variance in work performance in comparison with the amount they explained in job related burnout. This finding has implications for the theory and suggests alternative mechanisms for enhanced performance with job redesign. As outlined in the earlier chapters, better
performance resulting from job redesign is usually explained in terms of motivational processes (i.e. more motivated workers are prepared to put in more effort and produce better quality products). However, the results in this thesis provided further evidence that the learning process is a better explanation of performance improvements. That is, a result of active and autonomous engagement in work tasks and continuous training opportunities, people develop a new and better understanding of their role and how to perform it in relation to strategic objectives. In other words, by enhanced job content design such as better control and stimulating tasks, employees develop a better understanding of their role in the organisations and become more knowledgeable. Expert employees are better performers. This is similar to the argument put forward in Action Theory that greater control leads to the developments of improved ‘operative image’ system (involving employees in planning and adjusting their actions in order to develop mental image of how tasks might be executed; Hacker, 1986). It is also consistent with Warr’s (2002b) view in which he indicates that experts and more knowledgeable employees are more capable to diagnose problems, develop and implement plans than those who do not have such knowledge. Finally, this perspective aligns more closely with general performance literature in which there has been a swing in emphasis away from pure motivation-based mechanisms of work effectiveness to more cognitive and developmental exploitations (cf. Parker and Turner, 2002).

A further issue relates to whether, or under what conditions, the redesign of jobs leads to better organisational performance. This is a critical question as managers are unlikely to invest in enhancing the autonomy of jobs, and into changing the job context practices, if the same performance gains can be made with a job simplification approach. Based on the results of this thesis, it appears that performance can be
enhanced by job redesign. Enhanced job content and context design were shown to be important factors in the development of broad, proactive orientations (higher learning and commitment) which, in turn, predicted employee performance. Expertise can provide many benefits for organisations. Warr (2002b) indicated that knowledgeable employees work more effectively and usually appear to have a superior and more organised knowledge-base, perceive and recall larger meaningful patterns in their domain, search and locate information more effectively, are better at anticipating future developments and potential faults, make more sophisticated plans, work independently, take responsibility, and are better organisers.

The final point is that enhanced performance can NOT be achieved by simply increasing employees' autonomy or the level of demands as indicated by many job design theories (e.g. demand control model; JCM). As described earlier, redesign interventions may be blocked by managerial practices, the rewards system applied in the organisation or even by conflict occurring within employees' personal life (i.e. work-home conflict). Therefore, such contextual aspect should be taken into account when devolving control and responsibility to employees. Moreover, it is likely that increasing the level of job control or demands is not always applicable as it might be increasing control or demands are difficult to achieve because of the work structure (e.g. teleworking). Therefore, it may be beneficial with such work structure to increase other work aspects of the jobs such as the social environment or the recognition system which may increase employees' commitment to the organisation that influence in turn, their performance.
7.2.2.2 Motivational mechanisms and wellbeing

The empirical evidence reported in this thesis showed two important conclusions regarding the relationships between job design and wellbeing. First, employee wellbeing can not be enhanced simply by increasing job control or job content (task) characteristics. This study provided evidence that poor wellbeing is a combination of poor job content design (e.g. low control, non-stimulating tasks, lack of adequate training) and inadequate job contextual factors (characteristics are missing or insufficiently present e.g. low social contact, aggressive managers, feeling of being unvalued member). These factors can be stressors that negatively influence employees’ wellbeing and mental health. Therefore, one of the strong points of this research is that we conceptualised employees’ wellbeing as an outcome of a wide range of variables rather than restricting wellbeing to control or job demands. Although criticised as having a narrow focus, the demand-control model of strain dominated job mental health research for the last 25 years. Jones and Fletcher (2003) indicated that the limited role of the Demand-control model in stress intervention programmes is due to the narrow focus of the sources of stress and limited them to job control and demands. Accumulating research on occupational health showed that employees’ wellbeing is related to a much wider range of variables. For example, the job demand-resource of the burnout model developed by Demerouti et al (2001) showed that burnout (emotional exhaustion and job disengagement) was due to various psychosocial variables such as control, demands, social contact, supervisors support etc. Finally, the results align with the Vitamín Model (cf. Warr, 2002a) in which the employee’s depression and anxiety was related to various aspects of job content and context factors.
The second conclusion of the present research is that job context characteristics along with organisational commitment explained more variance in employees' burnout in comparison with the explained variance when predicted by job content characteristics and the cognitive mechanisms of learning on the job. These results have important implications. First, poor 'job context' factors (e.g. work in isolation without social contact or imbalance between work demand and personal life) have more effect on employee wellbeing rather than poor design of job content characteristics (low control or feedback). These results align with much empirical research in which the 'soft' aspects of job design such as support have more influence on employee wellbeing in comparison with the 'hard' aspects of job design such as control (e.g. Jones and Fletcher, 1993). The second implication is that the effect of job design on employee's wellbeing is better explained by motivational mechanisms. The motivational mechanisms of organisational commitment along with job context factors exert more influence on employee wellbeing in comparison with learning on the job. However, this does not mean that employees' wellbeing can not be enhanced via cognitive strategies (developing cognitive strategies to cope with work daily pressure) but it does mean that motivational mechanisms can play a stronger role in such relationships. Motivational mechanisms have been superseded by cognitive mechanisms in the last 10 years and therefore, in the present thesis we reemphasised the role of both mechanisms in influencing the employee's wellbeing.

In conclusion, from the results of the current thesis, it appears that job redesign enhances employee's personality and leads to enhanced wellbeing. However, job design and wellbeing research have had less impact on interventions. As summarised by Jones and Fletcher (2003) this is due to the job design theories not providing
detailed intervention procedures as well as the narrow focus of existing job design theories on limited job characteristics.

7.3 IMPLICATIONS FOR JOB REDESIGN

This section provides some implications about how job design should be implemented under the framework of the present model. The first point provides guidelines for how the present characteristics can be used as a vehicle for job redesign to transfer simple jobs to complex ones. The second point is dealing with the level of enrichment necessary for each of the characteristics to produce gains in the work outcomes. We address each of these in turn.

7.3.1 Transferring simple jobs to complex ones:

As indicated earlier, enriching simple jobs by adjusting the job ‘content’ and ‘context’ characteristics would raise job complexity that would result in turn, in a higher level of work performance and wellbeing. Specifically, we indicated that well designed ‘job content’ characteristics increase cognitive complexity that provide an opportunity for learning and over the long term, facilitate mastery of tasks and feelings of expertise. This mastery and expertise then helps people to deliver their task effectively and increases the rating of their work performance (by their supervisors or themselves) as well as coping with the stress caused by the job. Similarly, jobs that are above certain level of job context characteristics encourage employees to develop a sense of affective attachment to their organisation and make them feel that they are
benefiting from employment with their organisation. This should reflect on their level of performance and coping with work stress.

However an important question raised here deals with the way of implementing these characteristics to produce what they are designed to promote. In practical terms, how can these characteristics be used as a vehicle for job redesign? Although this issue requires further research, general guidelines could be provided in the light of the present results and available literature. The first point is concerned with the ‘job content’ (task) characteristics and how they might be designed to promote challenge, feedback, control and training adequacy in order to promote cognitive complexity. The second point is concerned with designing ‘job context’ characteristics to raise the employees’ commitment and the affective attachment to their employing organisation.

Concerning the first characteristics, increasing the cognitive demands of the job is a ‘challenging’ task for any job designer as the dimension is less tangible in comparison with ‘variety’ or feedback. However, a number of practices that were mentioned in the literature can be useful in this respect. The first point is coming from the Action Theory which emphasised the importance of having complete actions as one of the methods of increasing cognitive demands. Hacker (1986) indicated that work should encompass complete actions using all the steps in the action process and all levels of regulations. A complete action involves two points. First, the job should allow employees to execute all the steps in the action process. Three steps were identified: a) the action perpetration step (e.g. developing the plan i.e. operative image system), b) action execution step which involves carrying over the tasks that have been prepared in the earlier step and finally c) action monitoring that involves watching whether the planed action are resulting in the desired outcomes.
The second point in *complete actions* is related to the level of regulations. One of the basic concepts in this theory is that activities are cognitively regulated at three levels: intellectual tasks (e.g. information processing, complex analyses, problem solving), roles (e.g. ready-made action programmes, rule based) and the sensory-motor tasks (e.g. simple movements, automatic actions). Well designed jobs should have balance between these three levels of regulations. Therefore, jobs that have complete actions should include all three levels of these regulations. Jobs that encompass all the steps in the action process and all levels of regulations should increase the cognitive complexity of the job.

Another practice that may improve the cognitive demands of the jobs is to increase the *technical interdependence* or the degree of required cooperation to make a product or deliver a service. Cummings and Blumberg (1987) indicated that low technical interdependence means that there is little need for cooperation (as in the case of the teleworker who does not depend on other colleagues to deliver his/her duties) but jobs with high technical interdependence require cooperative work and coordination between various departments (as in the case of a pilot who depends on other people to inform him about the weather, directions etc.). Gottfredson (1997) indicated that dealing with other people increases the cognitive demands of the job. However, this does not mean necessarily that jobs should be designed as teamwork but it means that work requires consulting other people before delivering work tasks. Interdependence aligns with the concept of complete actions that involve different levels of processes and regulations. Delivering tasks that have such complexity require cooperating with other people to produce a product or delivering a service. Kuk et al (1999) indicated that in the jobs that have high cognitive demands, the members tend to work in divisive groups in which a close partnership with several professional groups and
experts are applied. However, this also stresses the importance of communication, relationship and cooperation quality between colleagues, supervisors, and supervisor-subordinates.

Another method to increase work cognitive demands is by increasing the technical uncertainty or the amount of information processing and decision making required when executing the task (Cummings and Blumberg, 1987). Increasing the technical uncertainty may increase the opportunities for an employee to tackle problems and finding solutions. For example, a teleworker whose work is just to read the customer information from his/her monitor without a requirement to update the information or collect relevant information about that particular customer from other resources can be described as having low technical uncertainty. In this case, increasing the technical uncertainty means that the teleworker needs to collect information from different resources and have the ability to tackle the customer enquiry with other departments and finally recommend the appropriate solution. This means that tasks should not be “ready meals” that do not require processing (the rules level in Action Theory). Kuk et al (1999) indicated that in low complex jobs, tasks tend to be simple to highly specified, which can be managed sufficiently and completed successfully by a single person. While in high complex jobs there are concurrent tasks with hard to define, fuzzy task boundaries which may require a wide range of highly specialist knowledge and skills, tacit knowledge such as individuals experience for their successful completion. Furthermore, with complex jobs the methods are varied with multiple solution pathways without having universal or standard agreement of what constitutes a good or bad decision. Finally, achievable deadlines and time pressure would be a good method to increase interest and therefore, increase job challenge.
Concerning the feedback, Hackman and Oldham (1980) indicated that feedback can be increased by opening communication channels between employees and customers and establishing client relationships. Furthermore, feedback from the job itself is easy to implement nowadays especially with the widespread advance of technology. Electronic Monitoring System (EMS) can be beneficial in providing feedback from the job itself if we do not use it to monitor employees or to increase the work pace. This system can be applied also to provide feedback from the supervisors or the customers. For example, the information of the weekly or monthly performance report of a teleworker in a call centre can be used by the supervisor to provide feedback to the employee of his/her strength or weakness points.

The third job characteristic here is the control. Much of the job design literature indicated that the rapid technological advances are giving opportunities for greater employee control, particularly in terms of control over timing and location of work and other flexible working practices. As we indicated earlier in Chapter 1, the availability of computers and the internet mean that employees work can be synchronous (same time/ different place) or asynchronous (different time/ different place) meaning that people can control both the location of work as well as the time zone. Action Theory indicated that control can be increased by allowing employees to choose their own work strategy. The theory emphasised that jobs should allow decision making in which employees can choose their own tools and when to start and to end the production process (Hacker, 1986). Kuk et al (1994) indicated that control can be increased by giving each employee the authority to define the problem and decide the proper solution that should be implemented without having universal or standard agreement that reduces the number of options. Finally, empowerment
programmes are very popular nowadays and many initiatives provided rigorous implications for increasing job control (e.g. Leach et al, 2003).

The last job content characteristic is concerning the training adequacy. However, this feature should not be difficult to implement. The job designer should ensure that the job provides continuous training opportunities and to ensure that the demands of the job match employee abilities as well as keeping them updated in their field (e.g. training sessions, journals subscriptions, conferences etc.). In addition, the job designer should ensure that employees have good qualifications and that the work allows them to be used. However, training and learning opportunities are very popular in today's work context as organisations nowadays are transforming to 'learning organisations' in which training and continuous learning is part of the organisations strategy (Senge, 1990).

The second question is how to design the 'job context' characteristics. However, the existing job design literature is not helpful here as these characteristics were neglected. Some of the present contextual aspects are easy to implement, such as physical environment and financial rewards. In physical environment it should be easy to ensure that the jobs provide employees with safe working conditions and a healthy environment (e.g. low noise, acceptable air temperatures, cleanliness). In addition, the layout of the job should be compatible with human abilities such as easy access doors, stairs etc. Action Theory emphasised that obstacles in the worksite should be minimised and any hazards should be removed (Frese and Zapf, 1994). With financial rewards we should ensure that the employee receives fair compensation but most importantly to provide opportunities of extra money for extra
efforts (e.g. over-time scheme) as well as providing financial services for the employees (e.g. loans with low or no interest).

However, the rest of the job context characteristics seem to be more difficult to implement because the literature provided few guidelines for designing jobs to promote characteristics such as supportive supervisors, supportive co-workers climate, work-life balance, or recognition. As general guidelines, supervisors could be trained to be supportive and show non-aggressive behaviours, and to ensure that they have adequate knowledge about job tasks. Therefore, employees can trust them and consult them when necessary. Regarding co-workers climate, research has shown that competitive climate affects relationships and communication quality between colleagues. Parker, Axtell and Turner (2001) indicated that communication quality between members positively affects safe working behaviour because employees who have positive relationships care more about each other and learn the right way of delivering job tasks from each other. Therefore, organisations may consider promoting a cooperative non-competitive environment which should reflect on co-workers relationships quality. Some practices can be helpful in this respect such as equal opportunities, promoting team spirit, after work social events, societies, communal rooms, and acknowledging employees who backup their colleagues when necessary.

Work-life balance contains many aspects that vary among employees and between organisations. However, the main sources of conflict could be addressed by organisations by introducing programmes to reduce work interference with family life or vice versa. For instance, given the fact that many married women and single parents are a considerable proportion of the workforce nowadays, nursery facilities at
the workplace would be helpful in reducing problems with family responsibilities. Additionally, because a public transport is usually hectic and crowded, negative effects could occur such as physical exhaustion, delay, absence, and even turnover. Therefore, a mode of transportation provided by the organisations from particular meeting points to work and vice versa would be helpful in that respect and would be considered as part of the organisational rewards. However, the work-life balance scheme is growing in many organisations nowadays and much research has been conducted, which has provided many helpful guidelines. Applying the implications of this research area in job redesign would be beneficial in that respect.

Finally, regarding the recognition characteristics, some schemes may be introduced to promote feelings of seniority and being a valued member of the organisation. Some of these are the ‘employee of the month scheme’, responsibility of training new members, appreciative supervisors and colleagues, opining channels of acknowledgment from customers to employees. All of these would be helpful in creating a sense of seniority and being a valued member of the organisation.

Table 7.1 provides some guidelines and recommendations for effective redesign intervention. However, it should be noted that all of the implications are a developing ones and further research is needed to investigate employees’ response to each of these recommendation especially with those relating to the contextual factors.

However, although all of the 10 characteristics addressed in the present research are central, they should be implemented with some flexibility. For instance some aspects of the job characteristics may be difficult to be fully enriched in the practical world, such as designing optimal air temperature for construction workers or high levels of control for telephone operators working at a call centre. In reality, it might
be difficult to apply the full concept but part of the concepts is usually possible. Perhaps controlling air temperatures is difficult for construction workers but providing appropriate protection clothes or enhancing safety procedures is achievable. Both sides are reflecting the ‘physical environment’ concept but differ in the instrumental definition. Besides, we believe all the characteristics are working in harmony in producing work impacts; therefore, if one of the aspects is having low enrichment for practical reasons, enriching the other aspects properly should cover up the less enriched characteristic. For instance, for some types of teleworkers, such as telephone operators, their work is tightly controlled and monitored and therefore, the redesign intervention has limits regarding the level of control enrichment. However, such jobs could benefit from enriching other characteristics such as social contact, recognition, more training to enhance their skills, supportive supervisor, higher payment, and so on. Enriching these aspects properly would reduce the negative effects of having low control (Parker et al, 2001).

Table 7.1: practical recommendations for job redesign intervention

<table>
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<tr>
<th>Work characteristics</th>
<th>Recommendations for job redesign</th>
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| Intellectually challenging tasks      | - Ensure that work encompasses complete actions, using all the steps in the action process and all level of regulations.  
- Ensure that the job has a variety of duties, tasks, and activities.  
- Increase task interdependence to a certain level that do not cause role conflict.  
- Increase technical uncertainty to create opportunity to tackle problems and finding solutions but be aware of role ambiguity. |
| Control                               | - Allow employee to choose their own work strategy (there is no ‘one best way’).  
- Give people control in form of decision authority; it helps them to act more effectively.  
- Allow employees to participate in planning and implementing work strategies to deal with the situation. |
| Feedback                              | - Ensure that work itself provides feedback, this should be easy with advance technology.  
- Open communication channels between employees, and between employees and supervisors, this should facilitate the external feedback.  
- Establish client relationships to increase customer feedback. |
| Training adequacy                     | - Ensure employees have enough knowledge about how to deliver their work tasks.  
- Ensure employees receive follow up training from time to time.  
- Ensure that employees have good qualifications and that the work allows them to be used. |
**Supportive supervision**
- Train supervisors to be supportive and non-aggressive.
- Open channels between employees and supervisors to reduce the formality.
- Ensure that supervisors have enough knowledge about the work processes and they are available to give advice when necessary.

**Supportive co-workers climate**
- Design the work layout to facilitate the social contact between workers (e.g., communal room).
- Promote a cooperative environment between workers rather than competitive one.
- Promote the equal opportunities regarding promotion and work benefits as this increases trust between colleagues.
- Facilitate social contact during breaks, after work social events, societies, etc.
- Acknowledge people who backup their colleagues when necessary.

**Financial rewards**
- Ensure that employees have a positive perception between their efforts and their compensations.
- If it is possible, allow job to provide extra money for extra responsibilities.
- Provide a compensation system that increases allowance according to experience.
- Provide financial services for your staff (e.g., loans with low or no interest).

**Recognition**
- Introduce schemes that promote feelings of seniority and valued member such as employees of the month but ensure to accompany them with tangible rewards.
- Give people responsibility of training new members as this promotes a feeling of seniority.
- Open channels of acknowledgment between customers and employees (you can initiate this by asking customers directly to do that).

**Work-life balance**
This need a thorough diagnosis as each individual is unique. In general, ensure the following:
- Provide nursery facilities at the worksite.
- Provide means of transportation to collect employees to and from work to a general meeting point.
- If the work involves different shifts, ensure to involve employees in scheduling work shifts.

**Physical environment**
- Ensure that the jobs provide employees with safe working conditions.
- Ensure that the workplace has easy access doors, stairs, offices, etc.
- Ensure that the work is mentally healthy (e.g., low noise, good lighting, and acceptable air temperature).
- Minimize obstacles in work environment that affect employee performance (e.g., poor tools).

Another related issue is concerned with the tools of diagnosing jobs to prepare them for job redesign. As indicated in Chapter 4, because of the complexity of these characteristics, we are not adopting any particular diagnosing measure, as using the right measure should be decided separately for each job and based on the organisational climate and available job resources. This is one of the basic concepts within Action Theory in which they promote some particular aspects to be enriched but a diagnosing step is a compulsory antecedent for job redesign to decide the right tools and the right intervention procedures (Frese and Zapf, 1994).

The final practical implication in this section is that job design should be implemented in stages gradually rather than at once. Perhaps that most effective
recommendation in this respect comes from the Action Theory (Hacker, 1986). The theory provided guidelines of how job design should be managed as well as the steps of implementing the intervention. Frese and Zapf (1994) summarised this and indicated that designers should take into account that the redesign intervention should be executed in hierarchical systematic stages. The theory also indicated that the job redesign process should be a continuous process to allow job designs to continuously expand. Four stages were identified in the redesign process:

1. **Work feasibility**: this means that work can be physically done. In this stage the designers should ensure that work has clear tasks and specific requirements which could be easy to be perceived by employees. Designers should ensure that work encompasses complete actions, control and the opportunity to choose the work strategy as well as feedback. Cognitive complexity can be increased at this stage but designers should ensure that the amount of information to be kept in the memory is minimised. Finally, job designers should ensure that employees have good qualifications and that the work allows them to be used.

2. **Safety**: in this stage, designers should ensure that all job tasks are safe without risks or hazards, and if there is any they should be removed. Obstacles to actions should be minimised such as poor tools or poor workplace layout (difficult to access doors, stairs etc.).

3. **Mental health and wellbeing stage**: after ensuring that the physical requirements of the job are improved (feasibility and safety), then the next level is to improve employees’ mental health and wellbeing. In this stage, the job designers should address the job context characteristics. Therefore, designer should ensure that
the job facilitates social contact, has supportive supervision, adequate financial rewards, and an effective recognition system. Finally, designers should ensure to provide facilities that reduce work-home conflict such as adding nursery facilities and means of transportation to and from the workplace.

4. *Continuous personal development*: in this stage the job designers should ensure that the job has the potential and the facilities to provide continuous personal development. Thus, jobs should provide workers with frequent opportunities to learn and develop their abilities and talents that can reflect later in their personality and enhance their sense of personal growth and self-achievement.

In conclusion, the present model appears to have some implications for effective job redesign. However, these implications will be more effective if we carried over further research to investigate people reactions to them using samples from various job types and occupational sectors.

7.3.2 The optimal level of enrichment

The above discussion about using the characteristics for redesign intervention leads to another important implication that should be taken into account. Specifically, what is the optimal level of enrichment for each of the job characteristics addressed in the current study. As an example, the results attained in the present research indicated that increasing task control is an effective means of improving work performance and reducing job related burnout. Does control have a linear effect, in which more control leads to higher work impact or, at certain levels, there is no further improvement or even a negative effect? Therefore, these characteristics need to be distinguished based
on their effect on the mediators and the proposed outcomes. In particular, a distinction has to be made whether these characteristics are having a constant effect (i.e. the higher level of enrichment is the higher of work impact) or a curvilinear effect (i.e. after the enrichment beyond a certain level there is no further improvement or even decrement).

Based on the current data it is difficult to decide the status of each characteristic. However, applying some ideas borrowed from existing job design theories would be helpful in giving an initial distinction. In particular, the Vitamin Model developed by Warr (1987, 2002a) has some implications on the current results. Warr’s Vitamin Model challenges the popular belief of a linear relationship between job characteristics and indices of work outcome. Instead, the Vitamin Model stipulates non-linear relationships between some job characteristics and mental health. Warr (1987) draws a parallel with the physiological effect of some vitamin intake; at first vitamin consumption causes positive health effects, but beyond a certain level there is no further improvement, or even decrement.

In the latest version of the Vitamin Model, Warr (2002a) indicated 10 job characteristics important for enhancing work quality and producing gains in wellbeing. The author proposed that six out of the 10 job characteristics affect wellbeing in a curvilinear way. These variables have ‘Additional Decrement’ (AD) effect, similar to the way A and D vitamins may affect and beyond a certain level there is no further improvement or even decrement. These characteristics are: opportunity for personnel control, opportunity for skill use; externally generated goals; variety; opportunity for interpersonal contact, and environmental clarity. The rest of the job characteristics (i.e. four) are supposed to follow a linear effect or a
‘Constant Effect’ (CE) the way vitamin C and E affect health (‘too much of a good thing’). These characteristics are: availability of money, physical security, supportive supervision, and valued social position.

Applying the results attained in the current research with the Vitamin Model’s propositions indicates that the characteristics of control, feedback, intellectually challenging tasks, supportive co-workers climate, and work-life balance have a curvilinear effect in which after enrichment beyond certain level there is no further improvement or even decrement. This is because at too much control can mean too much responsibility and too much feedback can mean monitoring. The same is applying for social contact in which a lot of it may increase distraction. The same also applied for intellectually challenging tasks in which high responsibility, high interdependence and technical uncertainty may have a negative effect and cause faults, higher accidents rate, and higher level of exhaustion. On the other hand, the characteristics of supportive supervision, recognition, physical environment and financial rewards have a curvilinear effect, in which the higher the enrichment level, the higher level of work outcomes. The characteristic of training adequacy is difficult to determine, as it was a new job aspect and was not addressed by the Vitamin Model. However, from the nature of this characteristic we can assume that it can have a curvilinear effect because the more the fit between task and abilities, the higher work impact will be but at certain level too much training can cause exhaustion and negative effects.

However, this distinction is a primal one and needs further investigation to decide whether these variables are really having linear or curvilinear effects. Although Warr (2002a) reported some studies that support his assumption of curvilinear associations
(De Jonge, and Schaufeli, 1998; Warr, 2002a; Warr, 1990) other studies reported contradictory results. For instance, De Jonge et al (1998) find curvilinear relationships for demands and social support but did not find curvilinear effect for autonomy. Therefore, additional research to distinguish the type of relations (linear or curvilinear) would be beneficial in this respect.

7.4 THE PRESENT JOB DESIGN MODEL IN PERSPECTIVE

In the current section the present job model will be evaluated in depth for its strengths and limitations. Identifying the limitations would help in spotting the weakness and how this model might be extended or enhanced. In the following section the strengths and limitations are presented and after this, an extensive view for the current model is provided. The latter section would be beneficial for further research and future directions.

7.4.1 Strengths and limitations

The main strengths of this investigation are the size and diversity of the sample and the methods used for identifying the critical job characteristics. As indicated earlier, identifying the critical characteristics from the employee's perspective using quantitative and qualitative techniques is a pioneer methodology in the job design paradigm. Previous job design theories developers identified the critical characteristics based on literature review and personal judgment using either qualitative or quantitative methodologies. The identification process adopted in the present research (qualitative, quantitative methodologies and from the employee’s
perspective) provided a rich picture of what current employees expect from their jobs. Besides, the content of the extracted characteristics seems to be a unique one as no single job design model has addressed all these characteristics in one attempt. Specifically, in this thesis we expanded the narrow focus of existing job design research in which they were focussing on ‘task’ enrichment and neglected the ‘job context’ factors. The present study hopes to be a catalyst for job design theoreticians to address job context characteristics more seriously in job design research.

Another strength is that we addressed the cognitive mechanisms of learning and their related concepts of skill use and self efficacy and managed to address them with the motivational mechanisms. Few empirical studies of the existing job design approaches have integrated both motivational and cognitive mechanisms in a single model. As we indicated earlier, the underlying mechanism of the many job design theories (e.g. The Job Characteristics Model- JCM) is based on motivational nature. That is, people who are working in enriched jobs are motivated to perform better and have more job satisfaction. In the model that we developed, we used both cognitive and motivational mechanisms to explain how job design influences work performance and employee wellbeing. That is, employees who work in an enriched job design develop motivational and cognitive strategies (knowledge and skills) which would enable delivering work duties effectively, and an enhancement in their personalities that will reflect on their wellbeing. In this respect, the JCM deals with people as ‘passive reactors’ to work systems while in this model we assume that people are ‘active recipients’ who change, develop, and adjust cognitively and behaviourally with the way work is structured and regulated.
Furthermore, the present research provided empirical evidence that the critical job characteristics and their associated mechanisms are sources of individual work performance (i.e. motivation, knowledge and opportunity), as well as sources for job related wellbeing. Finally, the measurement scales used to assess the individual work performance and job related burnout was a strength of the present research. In both variables we used solid and empirically tested frameworks (i.e. multi-faceted structure) that were recommended strongly in contemporary organisational behaviour research (Borman, and Motowidlo, 1993; Morrison & Phelps, 1999; Campbell et al, 1993; Motowidlo et al, 1997; Sonnetag & Frese, 2002; Parker & Turner, 2002; Demerouti et al, 2001). The results of the current research were compatible with these frameworks and provided further evidence for their validity in modern jobs.

Nevertheless, there are some limitations to the studies conducted here. Although each is summarised within their corresponding chapter, there are some general limitations. Perhaps the main limitation to the present research is the cross-sectional design, which does not allow for an assessment of causality. Thus, we do not know if the common assumption that the job characteristics increase work performance and reduced burnout is valid. Another explanation is that people who are performing well and are happy with their work (i.e. low burnout) may be more inclined to claim that they have higher control, feedback, support etc. Similarly, rather than learning and commitment influencing work performance and burnout, it is plausible that the individual develops a feeling of learning and commitment as a result of performing well and having less job related burnout. Longitudinal studies can be useful in examining the causality paths between job characteristics, mechanisms and the outcomes of individual work performance and job related burnout.
Another limitation is due to the self-report measure from which judgements and analyses were made. In the three studies there were a lack of objective measures of the job characteristics, mediators, and outcomes measures overall. The use of perceptual measures of work characteristics was a major criticism of the existing job design research (Parker et al, 2001). Other studies reported that perceptual measures are beneficial. Because employees are going to deliver job tasks eventually, their perception should be taken into account. For instance, if there is a common negative perception between employees for insufficient job resources, this is an indication that something is wrong in the system. However, objective measures of job design would have proven logistically problematic (especially to contextual factors). Further research should attempt to examine whether there is a disparity between self-report of the job design and objective measures.

The final limitation is that the model is designed to apply only to jobs that are carried out more-or-less independently by individuals. Therefore, the model does not offer any guidelines that would help in designing teams or the critical characteristics of an effective team. One of the reasons for this limitation is that team work was not part of the critical job characteristics. This issue needs further investigation as it contradicts what the Socio Technical System approach has promoted for more than 50 years in which they claim that work in teams brings motivation, satisfaction and productivity. However, it is premature and even inappropriate to indicate that team work is not applicable in the modern workplace, but it might suggest that people prefer teamwork because it contains technical interdependence or social contact with team members, but not for the teamwork per se (teamwork can mean sometimes incomplete actions; see Chapter 3 for details). Further research is necessary to investigate the degree of importance of teamwork as a job characteristic.
7.4.2 Extending the present job design model

The suggested job design model, in its present form, provided many avenues for understanding points in job design area. In particular, the critical job characteristics positively influence the mediating variables of learning and organisational commitment which in turn, have a true effect on individual work performance and job-related burnout. However, this model has some limitations that may be enhanced if an adjustment was made on some parts of the model. Some of these are discussed in turn.

The first suggestion is to adjust the path structure between the job characteristics sub groups and their associated mediators. As illustrated in Chapter 6, the correlations path between (job content characteristics → learning) and (job context characteristics → commitment) appears not to function in the way that we proposed it. Learning and organisational commitment were determined by almost all the critical job characteristics list. Therefore, it would be more effective to assume that both mediators are determined by task and situational characteristics rather than the paths structure presented in Figure 5.1. However, this should not affect the assumption in which task characteristics and learning have a greater influence on the individual work performance whereas situational characteristics and commitment have more influence on the job related burnout.

The other assumption that, if adjusted, would influence the applicability of the model for job redesign is the order of the outcome. The model assumes that the behavioural and psychological outcomes would be gained simultaneously and they are parallel to each other. Although this assumption may be true in diagnostic procedures in which variables are predetermined and no intervention is involved, this is not the
case if we are going to execute redesign intervention as performance and wellbeing do not occur at the same time. A leading study in this issue is the one conducted by Griffin (1991) which investigated the effects of work redesign on the attitudes, perceptions, and performance of 526 bank tellers over a two year-time period. Job satisfaction and organisational commitment improved in the first six months, but then declined to initial levels. In contrast, performance (assessed by supervisory ratings) did not increase in the first six months after the work redesign but significantly improved after 24 and 48 months. This study therefore, not only established a link between work design and performance, but it demonstrated the consecutive structure of work outcomes and that job satisfaction was attained before achieving the work performance.

As Griffin (1991) indicated, these findings emphasise the importance of looking at patterns of change over extended periods of time. This also establishes a guideline of what kind of outcomes should be expected over time. As an example, practitioners should acknowledge that the first changes that might occur after job redesign are on an attitudinal level such as motivation, satisfaction and wellbeing. They should not expect that job redesign has an immediate effect on performance or turnover as they have a long term effect and might be achieved when getting to and maintaining a satisfactory level of attitudinal outcomes.

The above findings have some implications on a theoretical level for the present model. They minimally suggest that attitudinal variables may be antecedents to behavioural outcomes such as work performance. Therefore, in the present model, the relationship between performance and job design variables is not a direct one and might be mediated by the psychological outcomes. Therefore, we suggest an
Chapter 7

extension of the current model presented in Figure 5.1. We suggest that the psychological outcomes (e.g. wellbeing) might be an antecedent to the behavioural outcomes (e.g. work performance). Therefore, achieving a satisfactory level of wellbeing (e.g. low burnout) might be a facilitator to work performance increases. Figure 7.1 displays the extended model. Unfortunately, based on the current data gathered in the research we can not provide any evidence to support this assumption (part of the theoretical relevance) as it is requires longitudinal data in which performance and wellbeing are assessed over time. The next section provides guidelines for some further directions.

Figure 7.1, an extended job design model
7.5 FURTHER DIRECTIONS

In this section some ideas for further research directions are suggested. These investigations, if conducted, would provide valuable information for developing the present model further, as well as providing guidelines for job redesign interventions. We will discuss three further directions in the following sections.

7.5.1 Linear or curvilinear effect

One of the job redesign implications discussed earlier regards the linearity of each of the critical characteristics lists identified in the current research. We indicated that based on the implications of the Vitamin Model (Warr, 1987; 2002a) some of these characteristics may have a linear effect (the higher the level of enrichment, the higher the work impact) while other characteristics may have a curvilinear effect (after enrichment beyond certain level there is no further improvement and may even be a decrement). However, these implications need investigation to decide empirically the status of each characteristic, especially when knowing that the Vitamin Model's results were inconsistent and few studies actually investigated the curvilinear assumptions (Kompier, 2003). We are calling for further research to be designed carefully to test this issue which would provide valuable guidelines for redesign interventions.
7.5.2 Longitudinal design

The present model was tested only in one sample and therefore, requires further investigations using different samples and different job types or occupational sectors. However, it is more important is to conduct a study that applies a longitudinal design. This is for two reasons. First, a longitudinal design is needed to assess issues of causality. Second, the extended model illustrated above, in which we reordered the outcomes, needs to be tested. The best way to test these assumptions is a longitudinal design. This can be achieved by conducting a diagnostic study in a specific occupational sector (e.g. sales assistants at the retailer industry). The diagnostic study should identify the job aspects that need to be redesigned as well as the performance and wellbeing status of the employees. After adjusting the work characteristics we should follow work performance and employee wellbeing over certain time periods (e.g. 6, 12, 24, 48 months). Such a design would provide rigorous implications for job redesign interventions in which we can identify the causality paths between job design and outcomes and whether wellbeing is antecedent to work performance or vice versa.

7.5.3 Investigating the excluded, less important job features

In the second study we indicated that 31 job features were excluded because they were less important, as indicated by the participants. Some of these characteristics were addressed by previous research as important job dimensions like team-based work, responsibility and less administrative work. It was very difficult to decide to exclude these either on the basis of the sampling limitations or because they are indeed unimportant nowadays. As we indicated earlier, some of the results contradict what the Socio Technical System approach promoted for more than 50 years, i.e. that
people prefer working in teams. We suggest reinvestigating the excluded features in depth using another sample and rewording some of the items, in order to be more explicit in reflecting the concept behind them.

7.7 CONCLUSION

The aim of this thesis was three-fold. The first phase was to critically examine the existing job design approaches and specific problems associated with job enrichment in the modern workplace. The second aim was identifying the critical job characteristics in the modern workplace from the employee’s perspective. The final aim was to investigate consequences of these expanded characteristics on employee’s wellbeing and productivity. The current research resulted in developing a job design model that has a wider perspective and expanded characteristics. Overall, the model attained significant results and provided some important implications for job redesign research.

A general conclusion that can be drawn from the present research is that identifying the critical job characteristics from the employee’s perspective has proven to provide a rich picture of the actual sources of the employee’s cognitive and perceptual mechanisms of work motivation. This methodology was indeed helpful in reflecting employees’ expectations and has proven to solve some of the criticisms or concerns of the narrow focus of existing job design approaches. These results had provided a pioneer implication, which is that employee’s needs are the core of job redesign.
Furthermore, the present thesis added new dimensions for job design research which is the ‘job context’ characteristics. Throughout the thesis we provided theoretical and empirical evidence for the importance of addressing the psychosocial aspects in job redesign. We indicated in several occasions that job design is no longer a matter of task enrichment; it is also a matter of contextual enrichment and work quality. As suggested by the present results, as well as by leading job design researchers such as Parker et al (2001) and Warr, (2002a), situational factors seem to have a significant role in employees’ learning, motivation, performance and wellbeing. Therefore, it seems that it is the right time to start seriously addressing these variables, both by organisations and governmental legislations. Additionally, the present research challenges the popular belief of the inapplicability of designing job contextual factors (e.g. the individual aspects) and provides a developing guidelines for redesigning job situational factors to contribute positively to work performance and employee’s wellbeing.

The present studies have shown that the mechanisms between work design and work performance and wellbeing are a combination of cognitive and motivational mechanisms. While previous job design research addressed either the motivational or cognitive mechanisms, in the present thesis we managed to provide evidence that both types are adding valuable information to our understanding of how job design leads to work outcomes. This research has provided a detailed insight into how the job characteristics enhance employees’ developmental outcome and enhance their personality. This would reflect, in turn, on employee’s performance, as well as enabling them to develop strategies to cope with average work daily pressure.
Overall, the reported findings join accumulating evidence of the role of job characteristics enrichment in producing gains in individual work performance and employee’s wellbeing. They also point to the promise of the present model in refining future research in the job design landscape.

THE GENERAL MESSAGE OF THE THESIS

While job design theory in the beginning of 20th century was concerned with splitting work into as many simple task as possible as a way of enhancing performance, reducing costs, and better control of production process, the subsequent job design theories focused on developing methods to overcome the negative effects of simplified jobs on people’s behaviour and fatigue. However by the beginning of the 21st century in which many western countries have imposed legislation to ban the simplified jobs, job design theory should be expanded from the narrow focus of job enrichment (the opposite of job simplification) to the wider perspective of job quality. That is, job design research should be more proactive and should be dictated to answer the wider question of ‘how to design quality jobs?’

The End


health, main effects and occupational differences. *NIOSH*, Washington, DC.


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Exploring the new job features in the modern workplace

‘Interview schedule’

General Instructions to be hand out to the interviewee

Thank you for taking the time to fill in this questionnaire.

This interview was developed as part of study investigating the psychosocial variables that affect workplace. The research helps to determine how jobs can be better designed, by obtaining information about how people react to their work daily tasks.

This study is a part of ongoing PhD project at University of Surrey - Department of Psychology – Work and Organisational Research Group WORG. This research has been reviewed by the University of Surrey Ethics Committee. You are not obliged to participate in this research. If you decide not to participate, this will have no effect on your position at your organisation.

Your individual answers will be kept completely confidential and data will be handled in accordance with the Data Protection Act 1998.

To ensure confidentiality, tape records will be destroyed immediately after transcription.

Thank you very much for your participation

For further information email m.al-zoubi@surrey.ac.uk or phone 01483 686939
Introductory questions

- Gender
- age
- Occupation
- Work experience
- Educational level
- Position level (e.g. employer, middle management, high management...)
- Economic category

- Warm-up periods by asking the above introductory questions and talking in different issues about the work.

- The questions

1) Would you like to tell me a little bit about your current job? What tasks and what duties you have? What responsibilities?

2) What aspects you dislike in your job? Why?

3) What aspects you like in your job? Why?

4) What do you think motivates you in doing your work?

5) What gives you the greatest satisfaction in your work?

6) As you think, what things that could be added to your work to feel more satisfied and motivated?

7) If you have a chance to change your job, will you do that? Why?

8) If you got a lot of money, would you like to stop working? Why?

9) Do you think your job have fun? Why?

10) Which of your duties do you consider the most fun in your job?

11) What do you consider as the most rewarding aspects of your job?

12) What was your previous job? Why did you leave that job, what things in that job you dislike?

13) During the last three months, how many days off did you take?
14) What were your reasons for these absent days?

15) In your current job, did you involve in teamwork?

16) If yes, could you tell me what aspects in team work you like and dislike? Why?

**Appendix 1**

**Things to be taken into account during the interview**

- Describe the confidentiality and ethical issues for the worker before you start the interview.
- If it is possible, tape the interview using tape recorder.
- If it is impossible, take small notice during the interview (don’t spend a lot of time writing, because this will affect the worker response) and immediately after the interview had finished describe the notes in detail without leaving any thing or trying to interprets what the interviewee want to say.
- Record the day and time of the interview and how long it takes.
- Make sure that you make the chat very friendly without a lot of formality.
- Use your interpersonal skills to keep the chat as long as possible and to encourage the worker to talk more.
Identifying the critical job characteristics in the modern workplace
Open questionnaire

General Instructions

Thank you for taking the time to fill in this questionnaire.

This questionnaire was developed as part of study investigating the psychosocial variables that affect workplace. The questionnaire helps to determine how jobs can be better designed, by obtaining information about how people react to their work daily tasks.

This research is a part of ongoing PhD project at University of Surrey - Department of Psychology – Work and Organisational Research Group WORG. This research has been reviewed by the University of Surrey Ethics Committee. You are not obliged to participate in this research. If you decide not to participate, this will have no effect on your position at your organisation.

On the following pages you will find several different kinds of questions about your job. Specific instructions are given at the start of each section. Please read them carefully. It should take no more than 10 minutes to complete the entire questionnaire. Please move through it quickly.

Your individual answers will be kept completely confidential and data will be handled in accordance with the Data Protection Act 1998. Please answer each item as honestly and frankly as possible.

To ensure confidentiality, please forward your completed survey in the attached self-addressed FREEPOST envelope directly to the researcher.

Thank you very much for your participation

For further information please email m.al-zoubi@surrey.ac.uk or phone 01483 686939
Demographics

This section asks you to give some information about your self to help me identify specific views and opinions you have. These questions are not supposed to identify you, but to help me understand the person who answers the questionnaire.

☆ Gender  □ Male  □ Female

☆ Age (in years):  {}

☆ Indicate your level of education (please tick one)
  □ No formal Education  □ GCSE  □ A level
  □ Technical college  □ university  □ Others

☆ Job Title:

☆ Indicate your Occupation Sector (please tick one)
  □ Sales / marketing  □ Services/ customer supports
  □ Professional (doctor, lawyer etc.)  □ Secretarial/ administrative
  □ Technical (engineer etc)  □ Computer / information technology
  □ Manufacturing  □ Academic / educator/ researcher
  □ Others

☆ Your current employment
  □ Full time  □ Part time

☆ The current occupation level (please tick one)
  □ Employee  □ Middle management
  □ High management  □ Self managing

☆ Economic category per year (Please tick one)
  □ Below 5K  □ 5-10K  □ 10-20K  □ 20-40K  □ + 40K

Please go to the next page and start the questions with the first thing that comes to your mind
1- How long have you been in this job?

2- What did you do before?

3- What are the most important tasks or duties in your current job that you have to do every day?

4- How often you engage with these activities?

☐ Every day  ☐ Once a week  ☐ Once a month

5- What other tasks may you be required to do?

6- What are the duties or tasks that you like to do most in your job?

7- Why do you like to do these tasks?

8- What are the parts of your job that you HAVE to do but you do NOT feel comfortable with?

9- Why do you feel not comfortable with these tasks?

😊 Great effort, just still 8 short questions overleaf
10- In your opinion, what are the aspects of your job that keep you motivated to come to your work every day?

- ...........................................................................................................................................................
- ...........................................................................................................................................................
- ...........................................................................................................................................................

11- What are the duties in your work that give you the greatest satisfaction?

- ...........................................................................................................................................................
- ...........................................................................................................................................................
- ...........................................................................................................................................................

12- In your opinion, what are the duties that could be added to your job to make you feel more satisfied and motivated?

- ...........................................................................................................................................................
- ...........................................................................................................................................................
- ...........................................................................................................................................................

13- What are the most rewarding aspects in your job?

- ...........................................................................................................................................................
- ...........................................................................................................................................................
- ...........................................................................................................................................................

14- Thinking back to a previous job, what duties that you used to do and you miss them in the current job?

- ...........................................................................................................................................................
- ...........................................................................................................................................................
- ...........................................................................................................................................................

15- If you had the chance to change your job what would you choose to do?

- ...........................................................................................................................................................

16- What are the reasons for this choice?

- ...........................................................................................................................................................
- ...........................................................................................................................................................
- ...........................................................................................................................................................

17- What are the aspects in your organisation as a whole you like most?

- ...........................................................................................................................................................
- ...........................................................................................................................................................

* Please feel free to add anything else you would like in an external paper.

Thank you for your efforts, please insert the questionnaire in the free post envelop provided and put it in the nearest post collection point.
Thank you for taking the time to fill in this questionnaire.

This questionnaire was developed as part of study investigating the psychosocial variables that affect workplace. The questionnaire helps to determine how jobs can be better designed, by obtaining information about how people react to their work daily tasks.

This research is a part of ongoing PhD project at University of Surrey - Department of Psychology - Work and Organisational Research Group WORG. This research has been reviewed by the University of Surrey Ethics Committee. You are not obliged to participate in this research. If you decide not to participate, this will have no effect on your position at your organisation.

On the following pages you will find several different kinds of questions about your job. Specific instructions are given at the start of each section. Please read them carefully. It should take no more than 12 minutes to complete the entire questionnaire. Please move through it quickly.

Your individual answers will be kept completely confidential and data will be handled in accordance with the Data Protection Act 1998. Please answer each item as honestly and frankly as possible.

To ensure confidentiality, please forward your completed survey in the attached self-addressed FREEPOST envelope directly to the researcher.

Thank you very much for your participation

For further information please email m.al-zoubi@surrey.ac.uk or phone 01483 686939
Appendix 3

Demographics

This section asks you to give some information about yourself to help me identify specific views and opinions you have. These questions are not supposed to identify you, but to help me understand the person who answered the checklist.

☆ Gender  ☐ Male  ☐ Female
☆ Age (in years):  
☆ Indicate your level of education (please tick one)
  ☐ No formal Education  ☐ GCSE  ☐ A level
  ☐ Technical college  ☐ University  ☐ Others
☆ How long have you been in your current Job:  
☆ Indicate your Occupation Sector (please tick one)
  ☐ Sales / marketing  ☐ Services/ customer supports
  ☐ Professional (doctor, lawyer etc.)  ☐ Secretarial/ administrative
  ☐ Technical (engineer etc)  ☐ Computer / information technology
  ☐ Manufacturing  ☐ Academic / educator/ researcher
  ☐ Others
☆ Your current employment
  ☐ Full time  ☐ Part time
☆ The current occupation level (please tick one)
  ☐ Employee  ☐ Middle management
  ☐ High management  ☐ Self employed
☆ Economic category per year (Please tick one)
  ☐ Below 5K  ☐ 5-10K  ☐ 10-20K  ☐ 20-40K  ☐ + 40K

Please go to the next page and read the instructions carefully before answering the checklist
Please circle below the number that is MOST appropriate to YOU keeping in mind that 1 is *Not important at all* and 5 is *Very important* on the following scale:

<table>
<thead>
<tr>
<th>Not Important at all</th>
<th>Not Important</th>
<th>Neutral</th>
<th>Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

NOW think about your current job and jobs that you have held or you wish to hold, and answer...

**HOW IMPORTANT IT IS FOR YOU TO HAVE...**

<p>| 1. A job without tight deadlines in your tasks | 1 2 3 4 5 |
| 2. A job that requires you to use a number of complex or high-level skills | 1 2 3 4 5 |
| 3. A job in which air quality is important | 1 2 3 4 5 |
| 4. A job that requires you to produce original ideas | 1 2 3 4 5 |
| 5. A job in which as a team you know your progress, e.g. achieving a target or not | 1 2 3 4 5 |
| 6. A job that is related to your qualifications | 1 2 3 4 5 |
| 7. A job that does not require carrying the work over to your home life | 1 2 3 4 5 |
| 8. A job in which the managers are good organisers and know how to run the business | 1 2 3 4 5 |
| 9. A job in which the managers care about you | 1 2 3 4 5 |
| 10. A job in which the managers encourage staff to make suggestions | 1 2 3 4 5 |
| 11. A job that does not have many disruptions during your workday | 1 2 3 4 5 |
| 12. A job in which the work itself provides clues about whether or not you are performing well | 1 2 3 4 5 |
| 13. A job in which the work you produce affects someone else | 1 2 3 4 5 |
| 14. A job in which the workplace temperature is appropriate | 1 2 3 4 5 |
| 15. A job in which you are familiar with all your tasks | 1 2 3 4 5 |
| 16. A job in which you are highly appreciated by the people you have served | 1 2 3 4 5 |
| 17. A job in which you are not watched all the time by managers | 1 2 3 4 5 |
| 18. A job in which you are the only person responsible for the work you produce | 1 2 3 4 5 |
| 19. A job in which you do not receive incompatible requests from two or more people | 1 2 3 4 5 |
| 20. A job in which you finish a piece of work that adds value to the business | 1 2 3 4 5 |
| 21. A job in which you give advice to others | 1 2 3 4 5 |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>22. A job in which you have good relationships with your colleagues</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23. A job in which you have general directions for your duties</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24. A job in which you have personal space that provides you with adequate privacy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25. A job in which you have the freedom to do your work in the way you want</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26. A job that requires thinking and stimulating your mind</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27. A job in which you learn new skills and develop abilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28. A job in which you make decisions and implement them without consulting others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29. A job in which you receive high recognition for the work you produce</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30. A job in which your tasks take a short time to do</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31. A job in which you receive training that helps you to your work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32. A job in which you start the product and carry it over to the end</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>33. A job in which you train and coach your team members</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>34. A job in which you work alone on your own initiative without direct supervision</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>35. A job in which your colleagues recognise your contribution to the organisation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36. A job that does not require documenting all your actions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>37. A job in which your managers give you information about your performance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>38. A job in which you receive professional respect</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>39. A job in which, as a team, you decide how the work should be done</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>40. A job that contains minimum paper and administrative work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>41. A job in which the tasks you do match your abilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>42. A job that does not have very hectic workdays</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>43. A job in which managers are NOT aggressive or inconsiderate</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>44. A job that does not require concentration all the time</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>45. A job in which your co-workers let you know how well you are doing that job</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>46. A job that does not require doing things that ought to be done in a different way</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>47. A job in which all the team have goals to achieve</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>48. A job that requires you to think quickly</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>49. A job that expects high level of planning and development of strategies</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>50. A job that gives extra money for additional responsibilities or overtime</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------------------------------------------------------------</td>
<td>-------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51.</td>
<td>A job where your co-workers are co-operative (not competitive)</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>52.</td>
<td>A job that gives you the opportunity to work outdoors</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>53.</td>
<td>A job that has a quiet workplace</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>54.</td>
<td>A job that has a stable future</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55.</td>
<td>A job that has benefits: paid sick leave, holidays, pension etc.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56.</td>
<td>A job that has convenient shift-times</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57.</td>
<td>A job that has good communication between team members</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>58.</td>
<td>A job that has high social status</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59.</td>
<td>A job that has little responsibility and no stress</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60.</td>
<td>A job that has many educational opportunities (e.g. workshops, conferences, journal subscriptions etc.)</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61.</td>
<td>A job that has some social events in the workplace (e.g. playing bowling, Snooker)</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62.</td>
<td>A job that has undefined work hours</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>63.</td>
<td>A job that is convenient to your family situation</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>64.</td>
<td>A job in which high safety procedures are important</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65.</td>
<td>A job that is simple and repetitive</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66.</td>
<td>A job that is team-based</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>67.</td>
<td>A job that is varied (requires doing different things)</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>68.</td>
<td>A job that keeps you updated in your field</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>69.</td>
<td>A job that makes full use of your skills</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70.</td>
<td>A job that offers you good payment (per hour/a good salary)</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>71.</td>
<td>A job that provides you with the opportunity to interact with different people</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>72.</td>
<td>A job that requires tackling problems and finding solutions</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73.</td>
<td>A job in which you have the opportunity to grow through your work</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>74.</td>
<td>A job that does not require much physical effort</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75.</td>
<td>A job that does not require working at speed</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>76.</td>
<td>A job where if a problem exists at work, you can discuss it with your colleagues</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>77.</td>
<td>A job that gives you fair pay for your contribution to the organisation</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thank you for your efforts, please insert the questionnaire in the free post envelope provided and put it in the nearest post box.
Job Quality Indicator

General Instructions

Thank you for taking the time to fill in this questionnaire.

This questionnaire was developed as part of study investigating the psychosocial variables that affect workplace. The questionnaire helps to determine how jobs can be better designed, by obtaining information about how people react to their work daily tasks.

This research is a part of ongoing PhD project at University of Surrey - Department of Psychology - Work and Organisational Research Group WORG. This research has been reviewed by the University of Surrey Ethics Committee. You are not obliged to participate in this research. If you decide not to participate, this will have no effect on your position at your organisation.

On the following pages you will find several different kinds of questions about your job. Specific instructions are given at the start of each section. Please read them carefully. It should take no more than 15 minutes to complete the entire questionnaire. Please move through it quickly.

Your individual answers will be kept completely confidential and data will be handled in accordance with the Data Protection Act 1998. Please answer each item as honestly and frankly as possible.

To ensure confidentiality, please forward your completed survey in the attached self-addressed FREEPOST envelope directly to the researcher.

Thank you very much for your participation

For further information please email m.al-zoubi@surrey.ac.uk or phone 01483 686939
First Section
Your tasks and your job working conditions

1.1: Your daily job tasks
Firstly read each statement carefully and circle the number which is the most accurate description of your job or your tasks. If the statement is not applicable to your tasks circle number 1 (very little).

<table>
<thead>
<tr>
<th></th>
<th>Very Little</th>
<th>Moderately</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the job require a variety of knowledge, skills, and abilities?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Do the problems you deal with require thorough knowledge of procedures?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Do you come across problems in your job you have not met before?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Does the job have a variety of duties, tasks, and activities?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Does the job require a high level of knowledge, skills and abilities?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Do you have to solve problems, which have no obvious correct answer?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Does your job sufficiently inform you about your work performance?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Does doing your work provide you sufficient opportunity to view and assess your own performance?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Does the job itself provide many clues about whether or not you are performing well?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. To what extent do your colleagues let you know how well you are doing on your job?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Do supervisors often let you know how well they think you are performing the job?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Do you receive enough training that helps you to do your job better?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Do you receive adequate training that improves your abilities?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. To what extent do you receive encouragement to use the skills you have learned</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. To what extent are the tasks you do equivalent to your qualifications (i.e. academic, experience etc.).</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. To what degree do the tasks you perform match your abilities</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. My current position adequately reflects my education and training.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.2: Your job working conditions
Below are statements with which you may agree or disagree. Using the scale provided, please indicate the degree of your agreement or disagreement by circling the number which is the most accurate description of your working conditions.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th></th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. My job allows me to make a lot of decisions on my own</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. In my job, I have very little freedom to decide how I work</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>---</td>
<td>------------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>20. I have a lot to say about what happens in my job.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21. Overall, my line manager is a good team manager.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22. My line manager is responsive to my requests for help or guidance.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23. My line manager displays wide-ranging knowledge and is keen to seek solutions to work problems.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24. In my work colleagues help each other.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25. In my work people tend to get along well with each other.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>26. In my work people take a personal interest in one another.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>27. There is a lot of 'team spirit' among colleagues in my work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>28. I feel like people in my work have a lot in common.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>29. I can count on my co-workers when I need help.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>30. The people here treat each other with respect.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>31. Considering all my efforts and achievements, my salary/income is adequate.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>32. My job promotion prospects are poor.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>33. My job security is poor.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>34. My line manager recognizes and appreciates high quality service.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>35. I receive the respect I deserve from my colleagues.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>36. My superior/s generally appreciate the way I do my job.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

1.3: For the next scale, use the “Poor” to “Excellent” scale to express your judgement.

<table>
<thead>
<tr>
<th></th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Very Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>37. How does the amount of pay that you currently receive compare to what you think it should be?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>38. How would you rate the recognition and rewards that team members receive for the delivery of quality service?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1.4: To what extent do your job responsibilities interfere with your family life?

<table>
<thead>
<tr>
<th></th>
<th>Not at all True</th>
<th>Barely True</th>
<th>Moderately True</th>
<th>Rather True</th>
<th>Exactly True</th>
</tr>
</thead>
<tbody>
<tr>
<td>39. Your job reduces the amount of time you can spend with your family.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. Problems at work make you irritable at home.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41. Your job takes so much energy you don’t feel up to doing things that need attention at home.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1.5: Does your family life and family responsibility interfere with your performance in your job in any of the following ways? Please tick how true the following statements are.

<table>
<thead>
<tr>
<th></th>
<th>Not at all True</th>
<th>Barely True</th>
<th>Moderately True</th>
<th>Rather True</th>
<th>Exactly True</th>
</tr>
</thead>
<tbody>
<tr>
<td>42. Family matters reduce the time you can devote to your job.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43. Family activities stop you getting the amount of sleep you need to do your job well.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I.6: Your physical working environment

Please circle a number on each line to indicate the extent to which your current work exposes you to the aspects of the physical environment listed, using the 0 - 4 scale shown at the top of the columns.

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Very little</th>
<th>Little</th>
<th>To some extent</th>
<th>To high extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>44. Bad design</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>45. Noise</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>46. Drafts, cold</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>47. Poor ventilation</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>48. Hot work climate</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>49. Safety hazardous (i.e. vapours, acids, flammable, or health-hazardous chemicals)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Second Section
The Job and Your Personal Feelings

1.1: your personal feelings

Each of the statements below is something that a person might say about his or her job. You are to indicate your own personal feelings about your job marking how much you agree with each statement.

<table>
<thead>
<tr>
<th></th>
<th>Very inaccurate</th>
<th>Inaccurate</th>
<th>Uncertain</th>
<th>Accurate</th>
<th>Very accurate</th>
</tr>
</thead>
<tbody>
<tr>
<td>50. I am proud to be able to tell people who I work for.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>51. I feel part of the organisation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>52. I would not recommend close friends to join the organisation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>53. I am not willing to put myself out just to help the organisation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>54. It would please me to know that my own work had made a contribution to the good of the organisation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>55. In my work I like to feel I am making some effort, not just for myself but for the organisation as well.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>56. The offer of a bit more money with another employer would not seriously make me think of changing my job.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>57. I sometimes feel like leaving this employment for good.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Number</td>
<td>Item Description</td>
<td>Very inaccurate</td>
<td>Inaccurate</td>
<td>Uncertain</td>
<td>Accurate</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-----------------</td>
<td>------------</td>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>58.</td>
<td>The work I do is very important to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>59.</td>
<td>My job activities are personally meaningful to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>60.</td>
<td>The work I do is meaningful to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>61.</td>
<td>I am confident about my ability to do my job.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>62.</td>
<td>I am self-assured about my capabilities to perform my work activities.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>63.</td>
<td>I have mastered the skills necessary for my job.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>64.</td>
<td>I have significant autonomy in determining how I do my job.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>65.</td>
<td>I can decide on my own how to go about doing my work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>66.</td>
<td>I have considerable opportunity for independence and freedom in how I do my job.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>67.</td>
<td>My impact on what happens in my department is large.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>68.</td>
<td>I have a great deal of control over what happens in my department.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>69.</td>
<td>I have significant influence over what happens in my department.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>70.</td>
<td>I feel confident that I have the necessary knowledge, skills and abilities to tackle any unusual problems that arise in my job.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>71.</td>
<td>I get the opportunity to develop new knowledge, skills and abilities.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>72.</td>
<td>I have many learning opportunities that keep me updated in my field.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>73.</td>
<td>I feel confident that my knowledge, skills and abilities are more than adequate for my job.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>74.</td>
<td>I feel confident that I have the necessary knowledge, skills and abilities to tackle any novel problem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>75.</td>
<td>I make full use of my knowledge, skills and abilities.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>76.</td>
<td>I feel a sense of personal satisfaction when I do this job well.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>77.</td>
<td>My opinion of myself goes down when I do this job badly.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>78.</td>
<td>I take pride in doing my job as well as I can.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>79.</td>
<td>I feel unhappy when my work is not up to my usual standard.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>80.</td>
<td>I like to look back on the day’s work with a sense of a job well done.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>81.</td>
<td>I try to think of ways of doing my job effectively.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
### Appendix 4

#### 1.2: Your daily work activities

In general, how do you estimate your performance level in delivering the following behaviours or tasks?

<table>
<thead>
<tr>
<th></th>
<th>Very poor</th>
<th>Poor</th>
<th>Marginal</th>
<th>Average</th>
<th>Above average</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>82. Your degree of proficiency in doing all your job tasks.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>83. Doing the required tasks on time as expected (i.e. meeting deadlines).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>84. Your degree of written and oral communication proficiency.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>85. Keeping on top of your administration.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>86. Your degree of punctuality (i.e. arrive work on time and leave on time).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>87. Keeping a positive relationship with colleagues (i.e. helpful, considerate, encouraging, sociable, fairly etc).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>88. Expressing 'customer oriented behaviour' to the people you are serving (i.e. helpful, kind, etc.).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>89. Protecting the organisation's property.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>90. Taking unnecessary time off work or during breaks.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>91. Complying with organisational rules and procedures (i.e. applying safe work behaviour).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>92. Putting in extra hours to get work done on time.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>93. Asking for a challenging work assignment.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>94. Taking the initiative to solve a work problem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>95. Expressing your loyalty for the organisation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>96. Working hard to develop your self (i.e. asking for training opportunities).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

#### 1.3: Your daily job mood

Below are statements with which you may agree or disagree. We would like you to indicate your level of agreement/disagreement. Please tick the box using the scale proposed

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>97. I always find new and interesting aspects in my work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>98. There are days when I feel tired before I arrive at work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>99. It happens more and more that I talk about my work in a negative way</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>100. After work, I tend to need more time than in the past in order to relax and feel better.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>101. I can tolerate the pressure of my work very well</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>102. Lately, I feel ‘mechanistic’ in the way I do my day to day work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>103. I find my work to be a positive challenge</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
## Appendix 4

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>104. During my work, I often feel emotionally drained</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>105. Over time, I feel disconnected from my work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>106. After working, I have enough energy for my leisure activities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>107. Sometimes I feel sickened by my work tasks</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>108. After my work, I usually feel worn out and weary</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>109. This is the only type of work that I can imagine myself doing.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>110. Usually, I can manage the amount of my work well</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>111. I feel more and more engaged in my work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>112. When I work, I usually feel energised</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

### Demographic information

- **Gender**
  - [ ] Male  
  - [ ] Female
- **Age (in years) _________**
- **How long have you been in current job?**
  - Years__________ or Months__________
- **Your current employment**
  - [ ] Full time  
  - [ ] Part time

Thank you for your efforts, please insert the questionnaire in the envelope provided and sends it back using the self-addressed FFREEPOST envelope.
Path coefficients presented in standardised form where the endogenous variable of ‘individual work performance’ is indicated only by the supervisory ratings.