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The perceived influence of some trainee characteristics and conditions for transfer on training outcomes

Jude E. Balm
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**THE PERCEIVED INFLUENCE OF SOME TRAINEE CHARACTERISTICS
AND CONDITIONS FOR TRANSFER ON TRAINING OUTCOMES**

DISSERTATION

Presented in partial fulfilment of the requirements for the degree of Doctor of
Education in the Faculty of Community Services, Education and Social Sciences at
Edith Cowan University of Western Australia

2005

By

Jude Edward Balm

B Com

Grad Dip of Ed (Training and Development)

M Ed

Supervisor: Dr John Woods

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ABSTRACT

While training is an important organisational development strategy, training transfer is increasingly being recognised as a key issue in ensuring the effectiveness of training and obtaining a return on investment. This study examines the transfer of training following on from a specific experiential learning program that was aimed at increasing the skills of a group of staff within a unique public sector organisation in Western Australia. The aim of this course was that staff would then be able to achieve a key performance indicator for the organisation at the identified target of 99.99% performance. The study is based on the perceived influence of two trainee characteristics (motivation to work, and organisational commitment), and two conditions for transfer (supervisor support, and opportunity to use) on training transfer as an outcome. The study first examined the issue of training evaluation and proceeded to conduct a more thorough examination of the literature on training transfer. Three popular and dominant models were examined for their strengths and weaknesses, which formed the basis for the conceptual framework proposed in this study. The four research questions focus on each of the four independent variables. The data collection for this study was based on previously used scales in each of the 4 variables and data gathered through a questionnaire from the staff of the Information Services Directorate of Lotterywest who formed the sample for the study. Early reliability analysis required some items from the survey instrument to be deleted from future analyses. Factor analysis suggested the existence of sub scales within each of the variables. Subsequent regression analyses suggested that motivation to work (2%) did not impact on training transfer in this study, but the other three predictor variables; organisational commitment, supervisor support, and opportunity to use each had significant influence on training transfer and ranged

from over 20% to almost 50% of the variance in the model. Collectively, the results suggest that approximately 50% of the variance in the model is attributed to the influence these variables have on training transfer. There are some limitations to this study which are discussed in detail and must be considered due to the unique nature of the sample who took part in the study and the public sector agency in which this study was conducted. In addition, implications for human resource practitioners and organisational development practitioners are discussed in detail. There are several opportunities for further research to be conducted within this particular industry (to which this public sector agency belongs) as it appears that no such research has previously been conducted of this nature within this industry, either in Australia or in the rest of the world.

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CHAPTER 1 – INTRODUCTION

Background to the Study

Organisations spend billions of dollars each year on training their staff in an effort to increase productivity so they can stay competitive in the face of fierce global competition and a rapidly changing environment. Managers and supervisors have begun to realise the need to ensure that they have a steady supply of skilled staff to maintain their competitive edge. The introduction of information and communications technologies, along with new materials and new processes has been a major driver of organisational change, thus prompting further and continuous training to keep employees' skills and knowledge current (Perryer, 2004; Quinones & Ehrenstein, 1997). Changes to legislation governing damage to the environment, workplace safety, and equal opportunity for disadvantaged groups necessitate changes to work practices, which most often require further training. At the same time, the workforce is itself undergoing significant change, thus bringing new challenges for managers and trainers (Drucker, 1997; Goldstein, 1989; Perryer, 2004; Thayer, 1997; Wexley, 1989). The consequences of these changes in legislation and at the workplace result in the introduction of new training methods, techniques and practices in order to achieve the desired results in trainee behaviour and subsequent improvement in work performance.

Organisations and employers spend large sums of money and devote considerable time to training their workforce in order to improve their performance on the job. In 1996, for example, expenditure on training alone in Australia amounted to approximately \$4.7 billion, or 2.5% of payroll expenditure (Australian Bureau of Statistics, 1997; Perryer, 2004). Has this money been well spent, and what return on

investment have the organisations or the employers been able to achieve by spending huge amounts of money on training their staff? There is evidence to suggest that much of this expenditure is wasted, with some estimates claiming that as little as 10% of training results in changes in behaviour in the workplace (Georgensen, 1982). If these estimates are accurate, then studies which investigate relationships between training and post training workplace behaviour could potentially help managers and employers save billions of dollars in Australia alone.

Training is sometimes referred to as a systematic, purposeful activity, intended to improve the knowledge, skills and attitudes of employers or others, enabling them to perform work tasks in the post training environment (Goldstein, 1993; Pershing, 2000; Perryer, 2004). Given the amount of money that organisations spend on training their employees, it is reasonable for them to expect a return of such an investment in the form of improved behaviour and subsequent improvement in job performance (Birati & Tziner, 1999; Goldstein & Gilliam, 1990; Muhlemeyer & Clarke, 1997). Quinones and Ehrenstein (1997) suggest that training can have cognitive, behavioural or affective change as one of its goals. For managers, training is often only considered effective and worthy if it causes a change in behaviour on the job, and subsequent improvement in productivity.

Training is focused to change behaviour or teach new behaviours in individuals (Muhlemeyer & Clarke, 1997; Birati & Tziner, 1999). Not much is known about the factors that impact on a trainee's decision to use training. Several previous studies have discussed and attempted to measure factors which might influence the impact of training on the trainee, such as, motivation to train, trainability, self-

efficacy, organisational commitment, course design, course content, validity of training, training environment, on the job support, supervisor support, peer support, etc (Awoniyi, Griego & Morgan, 2002; Cheng, 2000; Cheng & Ho, 1998; Clarke, 2000; Fecteau, Dobbins, Russell, Ladd & Kudisch, 1995; Greogire, Propp & Poertner, 1998; Gumuseli & Ergin, 2002; Hanover & Cellar, 1998; Holton, Bates, Seyler & Carvalho, 1997; Machin, 2000; Machin & Fogarty, 1997, 1998; Olsen, 1998; Seyler, Holton, Bates, Burnett & Carvalho, 1998; Smith-Jentsch, Salas & Brannick, 2001; Warr, Allan & Birdi, 1999). This study investigates two of the factors - trainee characteristics (motivation, and organisational commitment) and conditions for transfer (supervisor support, and opportunity to use) - which might influence the impact of training on the trainee's ability to transfer those skills, abilities and behaviours to the job and how these might influence performance on the job.

Job performance after training is referred to as 'behaviour' by Kirkpatrick (1959, 1987) and 'transfer' by Alliger, Tannenbaum, Burnett, Traver and Shotland (1997). The focus is upon performance at work after a program, and there is a need to record both prior and subsequent performance. That is most often undertaken in terms of supervisors' ratings of key behaviours before and after training (Warr & Bunce, 1995), but sometimes self-reports are obtained if information is unlikely to be available to a boss (Wexley & Baldwin, 1986). However, previous studies have shown that job performance after training can be affected by the conditions for transfer prevalent at the workplace. This study examines two conditions for transfer, factors which are perceived to positively influence training transfer.

Rouiller & Goldstein (1993) and Tracey, Tannenbaum & Kavanagh (1995) have shown that the conditions for transfer in an organisation are significantly associated with the extent to which learning is actually applied. When supervisors and colleagues encourage and reward the application of course material, training is more likely to yield positive outcomes at work. In assessing training transfer (job 'behaviour' in Kirkpatrick's terms), it is thus important to examine the factors at the local transfer climate that might affect the performance of the trainee, such as supervisory support and opportunity to use.

Training Transfer

As a form of organisational change, training enables employees to demonstrate new concepts, build skills, solve difficult problems and interpersonal relationships, or gain insights into behaviours accepted as the way things are. A key assumption of training is that by giving employees skills and insights for identifying and defining organisational problems, individuals will have greater capacity to change unproductive and unsatisfying organisational structures and processes. Training is a catalytic process that depends largely on the abilities of informed and skilled members to develop their own tools for change (Rusaw, 2000).

Yet, training employees does not guarantee they will, or can, make changes once they return to the workplace. A common weakness of training programs is their inability to transfer the skills to the workplace. Several things can happen. Trained employees may have the skills, but lack the power and opportunity to use those skills at the workplace. In addition, managers may fail to give employees opportunities and resources to make the necessary changes and use their newfound skills and

knowledge. So how can a trained employee apply the skills and knowledge at the workplace and thereby ensure transfer has occurred? Before we seek answers to such questions, it might be pertinent to take a few steps back and identify what we mean by training transfer and what has been achieved to date in relation to research in this field.

Definition of Terms

Transfer of training is defined as the degree to which trainees effectively apply the knowledge, skills and attitudes gained in a training context to the job (Newstrom, 1984; Wexley & Latham, 1981). Training transfer, therefore, is more than a function of original learning in a training program. For transfer to have occurred, learned behaviour must be generalised to the job context and maintained over a period of time on the job.

Another definition of transfer according to Perkins & Solomon, (1988) is the instruction that is designed to teach students how to apply the knowledge and skills they have learnt in one context to other situations. A third definition of training transfer according to Kraiger, Ford & Salas (1993), is that, training transfer includes the knowledge, skills and affect acquired as a function of training and the retention of the training content.

Motivation to transfer is defined *as the intended effort towards utilising the knowledge and skills learned in a training atmosphere to the real world work situations* (Holton et al., 1998, p.2).

Organisational commitment is the relative strength of an individual's identification with and involvement in a particular organisation (Tannenbaum et al., 1991).

Conceptually it can be characterised by at least three factors; *1) a strong belief in and acceptance of the organisation's goals and values; 2) a willingness to exert considerable effort on behalf of the organisation; and 3) a strong desire to maintain membership in the organisation* (Mowday, Porter, & Steers, 1982, p.27).

Supervisor support refers to the '*extent to which supervisors reinforce and support use of learning on the job*' (Holton et al., 1997, p.110).

Holton et al (1997, p.110), defined opportunity to use the newly acquired knowledge and skills as the, '*extent to which trainees are provided with or obtain resources and tasks that enable them to use their new skills on the job*'.

The Problem

In the 21st century, the turbulent global economy and quickly changing business landscape primarily are driven by information technology, and knowledge has become a primary organisational asset (Alley, 1999). This intellectual capital takes two forms: structural capital and human capital. *Structural intellectual capital* includes all the information assets owned by an enterprise, such as databases, patents, and proprietary technologies and processes. *Human intellectual capital*, on the other hand, consists of competencies of an enterprise's management and staff, and is used to design, produce, and deliver ever more innovative and sophisticated products and services (Brainmarket, 2002). Employers want to ensure that all of their investments in human capital provide maximum returns. Unfortunately, the rate of transfer of

skills learned in training that should be practised back in the workplace has been disappointing for most organisations (Baldwin & Ford, 1988; Broad & Newstrom, 1992; Georgenson, 1982).

Although it is more than fifteen years since Baldwin and Ford (1988) identified the need for investigating transfer climate only limited progress has been made to date. An analysis of several studies undertaken by previous researchers (Awoniyi et al., 2002; Bates et al., 2000; Cheng, 2000; Cheng & Ho, 1998; Clarke, 2000; Facticeau, et al., 1995; Greogire et al., 1998; Gumuseli & Ergin, 2002; Hanover & Cellar, 1998; Holton et al., 2000; Holton et al., 1997; Machin, 2000; Machin & Fogarty, 1997, 1998; Olsen, 1998; Seyler et al., 1998; Smith-Jentsch et al., 2001; Warr et al., 1999;) suggest that there is still a critical need for further research to be conducted in this area, specifically into factors which might impede training transfer.

Factors Inhibiting Transfer

Some managers and trainers may be reluctant to estimate transfer failure rates, but also are equally unable to estimate with any degree of certainty what percentage of training actually transfers. Many believe it is extremely low and that much of it is extinguished over time (Broad & Newstrom, 1992; Georges, 1988; Grabowski, 1983; Kelly, 1982). Based on his research Marx (1986) concluded that transfer failure may be as high as 90% for some training courses. From surveys of American, British and Indian managers who had attended management education programs, Baumgartel, Reynolds and Pathan (1984) reported that no more than 50% reported any significant attempt to transfer the training to the job environment. In a study by Huczynski and Lewis (1980) only 35% of the trainees attempted to apply the learning on the job. It

was thought that the number who actually integrated the learning into their every day work behaviour was a much smaller percentage. In other words, the degree of transfer maintenance was considerably lower than that of transfer initiation which itself was discouragingly low.

Practitioners have sought to explain this low level of transfer in terms of inhibiting factors. These factors can significantly inhibit transfer intention and transfer initiation, as well as impact the degree of transfer that eventually occurs. There are many current articles in the training literature (Minchin, 2000; Perryer, 2005) based on the experience and insights of practitioners, citing factors believed to inhibit transfer. Foxon (1993) conducted a content analysis of the more than 30 such articles and identified 128 inhibiting factors which were be grouped into four major categories - individual trainee characteristics, organisational climate factors, training design factors, and training delivery factors. Since this study includes two individual trainee characteristics – motivation, and organisational commitment, and two organisational climate factors – supervisor support and opportunity to practice, the following section briefly describes these two categories and their relationship to the this study. The other two categorise comprising training design, and training delivery are not included in this study.

Aim of the Study

The aim of the study was to investigate the extent to which four variables are perceived to positively influence training transfer. The variables were divided into two groups; 1) trainee characteristics consisting of motivation to work, and organisational commitment; and 2) conditions for transfer consisting of supervisor

support, and opportunity to use. These variables have been included in numerous studies in the past either discretely or part of a larger group of variables as described in tables 3.1, 3.2, 3.3, and 3.4, and figures 2.1, 2.2, 2.3, and 2.4. However, none of the studies conducted in the past has included these specific four variables in the same group as in this study within a public sector agency. In addition to this, previous studies conducted by (Awoniyi et al., 2002; Bates et al., 2000; Cheng, 2000; Cheng & Ho, 1998; Clarke, 2000; Facticeau, et al., 1995; Greogire et al., 1998; Gumuseli & Ergin, 2002; Hanover & Cellar, 1998; Holton et al., 2000; Holton et al., 1997; Machin, 2000; Machin & Fogarty, 1997, 1998; Olsen, 1998; Seyler et al., 1998; Smith-Jentsch et al., 2001; Warr et al., 1999;) where these variables have been included either discretely or in a larger group of variables, have suggested that further investigation is needed in relation to how much influence these variables might have on training transfer.

The Sample – Lotterywest Information Services Staff

The participants of this study were the Information Services staff at Lotterywest, a public sector agency of the Western Australian Government in Perth, Western Australia. This study only includes the staff who recently undertook a training program ‘Gaming Analyst Training’ which was conducted in December 2004 by GTeC Corporation, USA. The training was delivered to 40 staff in Perth, by GTeC Consultants at a considerable cost to Lotterywest. In addition to this, the study focused on two trainee characteristics; motivation, and organisational commitment, and two transfer climate factors, supervisor support, and opportunity to use. The study does not attempt to include any aspect of training design or training delivery.

Role of the Researcher

The researcher is employed as the Manager Planning and Organisation Development within the organisation in which this study was conducted. The sample population of this study were the staff of the Information Services Directorate, and as such the researcher had no operational or line responsibilities with the staff surveyed. In addition to this, the researcher was not involved in any day to day or operational activities of the staff surveyed. This eliminated any possible bias or conflict of interest on the part of the researcher or any possible influence over the staff surveyed and as such ensured the integrity of the data collected and the subsequent results obtained in this study.

Research Questions

Individual trainee characteristics: Learner characteristics account for 21% of the inhibiting factors (Foxon, 1993). The major inhibitor is the low level of learner motivation to apply the training (13% of the inhibiting factors). Other factors identified refer to the learner's difficulty with skill or knowledge mastery, and an inability to see the relevance of the training to the job requirements. Several studies conducted in the past (see tables 3.1, and 3.2, 3.3) have included different trainee characteristics either discretely or as part of a larger group of variables and have attempted to identify the relationship between these trainee characteristics and training transfer as an outcome. Included in these studies are the trainee characteristics – motivation, and organisational commitment, either as individual, discrete variables or as part of a larger group of variables. In addition to the recommendations and conclusions in these research studies, the authors have also

suggested (in most cases) additional research in these areas. This brings us to the first two research questions:

- ***Research Question 1:*** *To what extent does Motivation to Work as a trainee characteristic influence training transfer at the workplace?*
- ***Research Question 2:*** *To what extent does Organisational Commitment as a trainee characteristic influence training transfer at the workplace?*

Organisational climate factors: The negative effect of an unsupportive organisational climate on the transfer process accounts for 42% of the identified inhibiting factors. Foxon (1993) suggests the failure of supervisors (and, to a lesser degree, the co-workers) to encourage and reinforce application of the training on-the-job is the most commonly cited factor inhibiting transfer. Other factors repeatedly mentioned include the organisational demands and pressures that inhibit application, the lack of opportunity to apply the learning, and the failure to provide the resources or technology necessary for application. Transfer research has consistently documented that the work environment can influence worker ability and opportunity to perform learned behaviour on the job (Baldwin & Ford, 1988; Rouiller & Goldstein, 1993; Tracey, Tannenbaum, & Kavanaugh, 1995). Certain organisational factors in the work environment have been identified as facilitating or impeding transfer. Commonly reported are management and collegial support, resources and technology to support transfer, timeliness of training to enable workers to try out new learning, relevance of training, and the application of training on the job (Ford & Weissbein, 1997; Foxon, 1993). Trainees returning to a supportive work environment appear to use their training skills more often (Baumgartel, Reynolds, & Pathan, 1984; Broad & Newstrom, 1992; Richey, 1990, 1992). Indeed, research

indicates that organisational climate may be at least as important as learning in facilitating transfer skills (Richey, 1992; Rouiller, 1989). Organisational climate refers to the collective atmosphere of a workplace created by the attitudes, perceptions, and dynamics that influence how workers and the organization perform on a daily basis (Childre & Cryer, 1998). In addition to this, several studies conducted in the past (see tables 3.3 and 3.4) have included organisational climate factors (supervisor support, and opportunity to use) either discretely, or as part of a larger group of variables in the research model to identify the relationship between these variables (supervisor support, and opportunity to use) and training transfer as an outcome. While most of these studies have attempted to provide some insights into the perceived influence of these variables on training transfer, most have recommended that additional research is required in these areas. Kupritz (2003) advises that workplace design which includes support at the workplace and the opportunity to put the skills learned to practice, play a vital role in training transfer. This brings us to our next two research questions:

- ***Research Question 3: To what extent does Supervisor Support as a Condition for Transfer influence training transfer at the workplace?***
- ***Research Question 4: To what extent does Opportunity to Use as a Condition for Transfer influence training transfer at the workplace?***

In analysing the content of these groupings it is clear that practitioners regard the low level or lack of motivation on the part of the individual learner and a non-supportive organisational climate, as expressed in a lack of supervisor encouragement and reinforcement to apply the training, as the principal inhibiting factors in the transfer

process. By understanding how these two inhibitors operate in relation to the transfer process and the counter strategies that can be employed, practitioners can increase the likelihood that a majority of learners will reach the stage of transfer maintenance.

The thesis develops a model to explain the relationships between participation in a training intervention program, individual trainee characteristics (motivation and organisational commitment) and the training transfer climate (supervisor support and opportunity to use). In addition, the model attempts to explain how these variables (trainee characteristics, and transfer climate) contribute to training transfer. However, the model does not attempt to account for the influence of training design, or training delivery on positive training transfer.

Research Methodology

Data for the study were collected via a quantitative survey conducted by the author within a medium sized public sector agency. The survey instrument contained 90 items grouped into 5 categories to reflect the research questions; trainee characteristics of motivation and organisational commitment, and transfer climate of supervisor support, and opportunity to use. The statistical techniques used to analyse the data included multivariate data analysis, comprising of factor analysis and multiple regression. This is consistent with previous similar research (Perryer, 2004; Machin, 1999; Machin & Fogarty, 2003; Machin, 2000) including the study of similar dependent and independent variables being proposed in this study. Hair et al., (1998) suggest the use of factor analysis as a statistical approach to identify the interrelationships among a large number of variables and to explain these variables in

terms of their underlying dimensions (factors). This study contains eighty-six different items within four independent variables and one dependent variable, and again is consistent with previous similar research. The use of multiple regression analysis is supported by Perryer (2004), and Machin and Fogarty (2003), who conducted similar research with similar independent and dependent variables. The scales used in the survey instrument for this study are those adapted from Perryer (2004), and Machin (1999) and hence the use of the proposed multivariate data analysis is consistent with previous research.

Structure of the Thesis

The structure of the thesis consists of six chapters.

Chapter 1 introduces the research, and attempts to explain the background of the study, the research questions, the problem, and the research design.

Chapter 2 contains the literature review. The literature review begins with an overview of training, the need for training in relation to people and organisational development. It follows onto the need for evaluating training with a comprehensive review of the Kirkpatrick four-level model for evaluating training. Following on from evaluating training, the literature review includes a detailed analysis of the three dominant models of training transfer; the Ford and Baldwin model (1988), the Holton and Bates Learning Transfer Inventory System model (1999), and the Tannenbaum et al., model (1991). The strengths and weaknesses of each model are described followed by a proposed conceptual model for examining training transfer. The model proposed by the researcher incorporates the strengths of each of the

previously reviewed three models and includes new constructs not found in any of them. The literature review includes a detailed analysis of the four constructs which are being investigated in this study including evidence where such research has been proposed in the past. The two trainee characteristics being investigated in this study, motivation to learn, and organisational commitment are discussed and offered as possible variables that may positively impact on training transfer. Similarly, the two conditions for transfer, supervisor support and opportunity to use, are discussed and offered as possible variables which may positively impact on training transfer.

Chapter 3 presents the Conceptual Framework. This chapter details the structure of the conceptual framework and its relationship to the research design and the research methodology that forms the basis for this thesis. The chapter begins with a description and summary of research on the broader issue of training transfer. This section also includes the key components of a proposed conceptual framework for investigating training transfer and framework which are categorised into trainee characteristics, conditions for transfer and finally training transfer as the outcome. Each of the key components of the proposed framework is described in detail. It is acknowledged that while this study focuses on two variables (motivation, and organisational commitment) within the category of trainee characteristics, and two variables (supervisor support, and opportunity to use) within the category of conditions for transfer, the rationale for describing the other categories which consist of pre-training, and training design is primarily to put the focus of this study into the broader context of training transfer. This supports the latter part of this chapter which includes a detailed description of each of the variables which are being

investigated. The chapter ends with a pictorial description of the research model used for this study.

Chapter 4 presents the research design and methodology used in this thesis. The research environment (the organisation) is discussed in detail including the climate and need for such a study to be conducted within this organisation. This includes the survey population, the rationale for choosing this particular sample and the program which is being investigated and which forms the subject of training transfer. The development and testing of the instrument and the data collection techniques are discussed in detail. Included in this chapter is the proposed research model being used in this study and four hypotheses are offered for investigation. Finally in this chapter the proposed data analysis techniques are discussed briefly.

Chapter 5 presents the data and results of the study including the analysis of the data and interpretation of the results. Here the researcher presents a discussion, and evaluation of the findings and compares them to the findings of similar other studies conducted. Included in this chapter are the limitations of the study, a discussion of the theoretical implications of the findings, and possible implications for future research, managers and organisations is offered.

Chapter 6 includes a detailed discussion and recommendations of the research. In this final chapter, the results of the study are used to make recommendations in relation to future research for practitioners and researchers. A discussion of the results and recommendations in relation to the research questions and a comparison of previous research are included.

Conclusion

Training is an expensive but necessary strategy for organisations to implement in order to assist their employees perform better and for the organisation to achieve its goals and objectives. While organisations would like to maximise the benefits and advantages they might get from training, insufficient attention is paid to the environment within which the training is conducted, such as the characteristics which trainees bring to the training, and the conditions at the workplace within which the trainee is expected to perform or use the new found knowledge, skills and competencies. A possible result from this lack of attention could mean a waste of resources on the training program with little or no benefit to the organisation. The training transfer climate is a critical environment factor which impacts on the transfer process. More research is needed to establish the impact of certain trainee characteristics and conditions within which they are expected to use the new knowledge and skills on the transfer process as a positive outcome. This study attempted to address those gaps in the literature, adding to the body of knowledge about transfer and identifying useful tools which could aid human resource practitioners and organisational development experts to maximise people development opportunities.

CHAPTER 2 – LITERATURE REVIEW

Introduction

This chapter presents a brief overview of the training literature, and identifies key themes, gaps and shortcomings in the literature reviewed. Following on from this review, the narrower subject of training transfer is discussed by crucially examining some of the key theoretical frameworks over the last 25 years or so. In particular the work of Baldwin and Ford (1998) is discussed in detail as the starting point for the subject of training transfer. Following on from the discussion and examination of the Baldwin and Ford (1998) model, the second model discussed and examined in this section of the literature review, is the work of Tannenbaum et al., (1991). In addition to the work of Baldwin and Ford (1998), and Tannenbaum et al., (1991), the third model which is examined in this part of the literature review is the work of Holton (1996) and his Learning Transfer System Inventory (LTSI) model. The examination and review of these models form the basis for a proposed conceptual framework used in this research. The proposed conceptual framework is discussed in detail in the following chapter.

The chapter then examines an additional body of literature which relates to the four constructs which are being investigated in this study. The individual trainee characteristics of *motivation to work*, and *organisational commitment* have been the subject of various studies in recent years. The literature reviews these two constructs focusing on more recent studies over the last 10 to 12 years and their relationship to the proposed conceptual framework used in this study. Secondly, attention is paid to the literature which focuses on the other two constructs in this study, *supervisor support*, and *opportunity to use*. These four variables are discussed by reviewing 39

studies over the last 10 years and the justification of selecting these four constructs in this study.

Finally the chapter identifies a number of research questions arising from the review of this literature, the hypotheses for the study, and the relationship between the constructs are discussed and proposed.

Training

As a form of organisational change, training enables employees to demonstrate new concepts, build skills, solve difficult interpersonal relationship and technical problems, or gain insight into behaviors accepted as the way things are. A key assumption of training is that by giving employees skills and insights for identifying and defining organisational problems, individuals will have greater capacity to change unproductive and unsatisfying organisational structures and processes. Training is a catalytic process that depends largely on the abilities of informed and skilled members to develop their own tools for change.

Yet, training employees does not guarantee they will or can make changes once they return to their workplaces. A common weakness of training programs is their inability to facilitate the transfer of skills to the workplace. Several things can happen. Trained employees may have the skills, but lack the power to change poor work conditions. In addition, managers may fail to give employees opportunities and resources for making changes; not having the extra time to spend with employees is a frequent reason. Sometimes managers see change as risky and may fear possible failure and short-term productivity losses. Other times, managers may resent employees who they think have more technical skills than they. Better equipped

employees increase promotion potential, and some managers may believe such employees threaten job security.

The process of putting new learning from adult training into practice is influenced by multiple factors. These include characteristics of the learner, the context of application, as well as characteristics of the training program. Programs that address these multiple influences and prepare learners to cope effectively with obstacles are more likely to produce results than programs that treat application as a simple process of transferring knowledge, skills, and attitudes from the training to the targeted workplace and/or community (Broad & Newstrom, 1992). Whatever the training model or training program design used, the training is considered effective if it produces the desired result, in most cases, a change in behavior on the job (Cascio 1987; Donaldson & Scannell 1978). These authors suggest that the change in behavior then leads to positive organisational outcomes. In order to measure the effectiveness of training, it is suggested that training evaluation needs to take place.

Training Evaluation

Evaluating training is a complex and expensive process. Training evaluation has mostly taken the form of identifying the reactions of trainees rather than identifying its effectiveness at the workplace. For many training departments once the training is over and the financial details taken care of, then the training activity is considered completed and appropriate. There is very little evidence to suggest that a scientific, structured and systematic approach to evaluating training is considered by many organisations.

Goldstein (1993) suggests that attitudes towards training evaluation fall generally into three categories. Those in the first category whom he refers to as negativists, believe that evaluation is either impossible or unnecessary as they see little need for evaluating the success of an activity conducted off the job, using on the job performance criteria. The second group which he refers to as positivists, believe evaluation is necessary, but only if it is rigorous, scientific and can be measured quantitatively. The third group whom he calls activists, believe that there is no point in debating whether or not training should be evaluated. This group believes that training will always be evaluated, either formally or informally. Further, this group believes that training evaluation will not be perfect due to the constraints at the workplace and the work environment. They are of the belief that the most appropriate methodology should be used, and the reporting of the evaluation should take into account the limitations of the methodology used.

Training Transfer – The pioneering work by Baldwin and Ford (1988)

Whatever evaluation technique is used, the outcome of training evaluation must be to provide an accurate assessment of the effectiveness of the training intervention.

Training interventions can only be considered effective when they result in the transfer to knowledge and skills to the workplace (Pershing 2000). Despite the urgent need for a better understanding of the training transfer process, Baldwin and Ford (1988) realised that the literature on training transfer at that time had very little value to practitioners to maximise positive transfer. Among early works on transfer of training, Noe (1986), and Baldwin and Ford (1988) are probably the most influential. Especially, the conceptual framework of Baldwin and Ford (1988) has attracted a lot of empirical studies to investigate how individual characteristics, job

attitudes and work environment affect the transfer of training process (Baldwin et al., 1991; Clarke, et al., 1993; Facticeau et al., 1995; Ford et al., 1992; 1998; Gist et al., 1991; Martocchio, 1992; Mathieu et al., 1992; Saks, 1995; Tannenbaum et al., 1991; Tesluk et al., 1995; Tracey et al., 1995; Tznier et al., 1991). It is widely accepted by most researchers that the pioneering work by Baldwin and Ford (1998) and their subsequent model was the catalyst for the abundant research and studies which followed.

Baldwin and Ford (1988) have suggested that early empirical research studying the effects of individual factors and work environment on transfer of training are very few. Robertson and Downs (1979), after reviewing studies regarding trainability testing, suggested that trainees' ability might explain about 16 percent of the variance in training effectiveness while Noe and Schmitt (1986) further stated that trainees' motivation and work environment might help explain another 15-20 percent of the variance. Recently, more research has been done to explain individual, attitudinal and environmental impacts on the transfer process and outcomes where some of them have shown high value relatively. However, more research can be done in this area.

Baldwin and Ford (1988) reviewed the major empirical studies of training transfer that were done on or before 1987. Their framework (in Figure 2.1) highlights the importance of such training inputs as trainee characteristics (ability, personality, motivation), training design (principles of learning, sequencing, training content) and work environment (support, opportunity to use) on training outputs (learning, retention) and conditions of transfer (generalisation, maintenance). They further

concluded that the samples, tasks, designs and criteria used in the current literature have limited the understanding of the transfer process (Noe & Ford, 1992). In summary there are four limitations (Ford & Weissbein, 1997), which are:

1. The criterion problem of how training transfer is defined and operationalised, and when it has to be measured.
2. The low complexity of the trained tasks used to examine generalisability of results from training design studies.
3. The lack of conceptual models to drive the choice of which trainee characteristics should be examined for their impacts on transfer.
4. The lack of attempts made to conceptualise and operationalise work-environment factors that can influence transfer.

Some researchers have written update reviews (e.g. Ford & Weissbein, 1997; Noe & Ford, 1992; Tannenbaum & Yaki, 1992) intending to expand the work of Baldwin and Ford (1988). Among these outputs, the review by Ford and Weissbein (1997) was a more updated one. In their view, they found that progress had been made to advance the understanding of the influence of work-environment variables on transfer outcomes. They further suggested that for deriving practical applications, more efforts have to be devoted to examining the relationships between work-environment factors with learning and transfer as to develop intervening strategies.

However, other researchers may adopt alternative views on the transfer process (eg. Holton, 1988; Kirkpatrick, 1987; Noe, 1986; Tannenbaum et al., 1991). In dealing with training effectiveness, the taxonomy of Kirkpatrick would be particularly useful

(Noe, 1986). Until a few years ago, some researchers still used the Kirkpatrick's four-level taxonomy to evaluate the transfer of training (Olsen, 1998). The conceptual framework of this paper is based on the issue of training evaluation generally, together with the recommendations of training effectiveness of Tannenbaum et al., (1991), but more specifically on the Baldwin & Ford (1988) framework, and Holton & Bates (1999) model for training transfer. Trainee reactions, learning, behaviour and organisational results are four major indicators/measures to undergo training evaluation (Kirkpatrick, 1987). To provide a detailed explanation of training effectiveness, it is crucial to identify and measure the impacts of individual and organisational constructs on training outcomes including learning and transfer (Mathieu et al., 1993; Tannenbaum et al., 1991). Although the two models address different research questions (Kraiger et al., 1993), the combination of them constitutes the four critical stages of the transfer process - pretraining motivation, learning, training performance and transfer outcomes. These four components generally represent what would happen in a transfer process as is evident by the literature and studies conducted thus far in the field. It is expected to offer practitioners a frame of reference to easily conceive the process of transfer of training. The four stages are described below:

1. Pretraining motivation refers to the intended effort towards mastering the content of a training program.
2. Learning is the process of mastering the content of a training program.
3. Training performance is the measurement of the extent of what a trainee has achieved in a training context.

4. Transfer outcomes are those attainments made by the trainees when they apply what they have acquired in a training context back to the job, which can benefit both the trainees and the organisation.

Baldwin and Ford Model for Training Transfer (1988)

In 1988, Baldwin and Ford reviewed and critically analysed the literature devoted to training transfer. In order to understand the issue of transfer, a thorough investigation of the issues and factors surrounding transfer needs to be undertaken in order to enhance one’s understanding of the subject. In addition to this a clear understanding of what is meant by transfer and the extent to which knowledge and skills are transferred to the work environment are required. Baldwin and Ford organised their review of training transfer around the model in Figure 2.1.

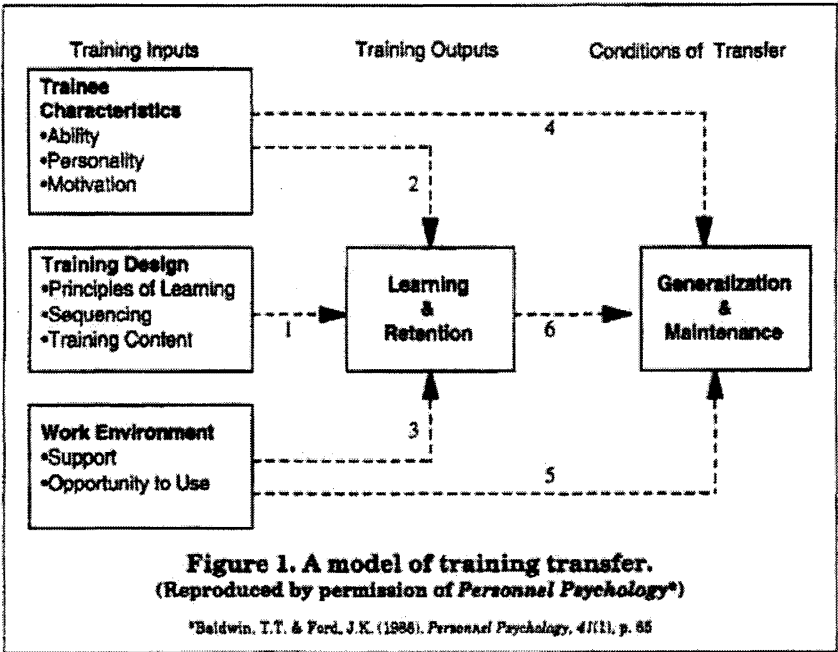


Figure 2. 1: A model for training transfer

Source: Baldwin and Ford (1988). *Personnel Psychology* 4(1)

As the model indicates, training outcomes and training input factors have both direct and indirect effects on conditions of transfer. These effects are specified in terms of six linkages, which are critical to understanding the transfer process. Working backwards in the model, training outcomes of learning and retention are seen as having direct effects on conditions of transfer (Linkage 6). That is, for trained skills to transfer, training material must be learned and retained (Kirkpatrick, 1967).

Trainee characteristics and work-environment characteristics are also hypothesised to have direct effect on transfer regardless of initial learning during the training program or retention of the training material (Linkages 4 and 5). For example, well-learned skills may not be maintained on the job due to lack of motivation or lack of supervisory support. Finally, training outcomes (learning and retention) are viewed as directly affected by the three training inputs of training design, trainee characteristics, and the work-environment (Linkages 1, 2 and 3 respectively). These three training inputs, therefore, have an indirect effect on transfer through their impact on training outcomes.

One of the issues identified by Baldwin and Ford (1988) in need of further research is the lack of attention to clearly conceptualise and operationalise key work environments such as climate, support and opportunity to use. What Baldwin and Ford (1988) were effectively saying is that there is a need to understand work environment factors better, to identify appropriate trainee characteristics to study, and to examine these issues in a complex work environment. They also noted that most of the previous studies had focused exclusively on one input factor, and suggested that future research should take a more interactive perspective. They specifically mentioned the need for research that tested complex interactions between

training inputs in this regard. They felt that much of the training research had overlooked the importance of key trainee characteristics (among others) of motivation, and organisational commitment and its relationship to training transfer outcomes.

The Learning Transfer System Approach (Holton, 1996)

The inadequacies of traditional approaches to evaluating the benefits of training programs are discussed in-depth in Hannigan et al., (2000). Economic approaches tend to focus on productivity and the return on investment. The models have proven inadequate in assessing the effectiveness of training mainly because they ignore the individual firm context (Donavan, Hannigan & Crowe, 2001). Traditional human resource development evaluation models which focus on the individual training program, are also limited and have been dominated by the Kirkpatrick four-level model for the past 40 plus years (Kirkpatrick, 1996).

Holton (1996) proposed an alternative and more comprehensive model which might be labelled the 'influences approach'. The model is based on weaving together various factors of existing work in the area. This model, although complex, suggests that an alternative might be possible to enable the development of practical evaluation tools what were grounded in theory (Figure 2.2). Major intervening variables that affect learning such as trainee readiness, motivation, training design and reinforcement of training on the job are not specified in, for example the Kirkpatrick (1996) four-level model. In addition, individual differences which may also affect training outcomes are not accounted for. This has the potential to lead to

faulty decisions about human resource development intervention effectiveness (Holton, 1996; Swanson and Holton, 1999).

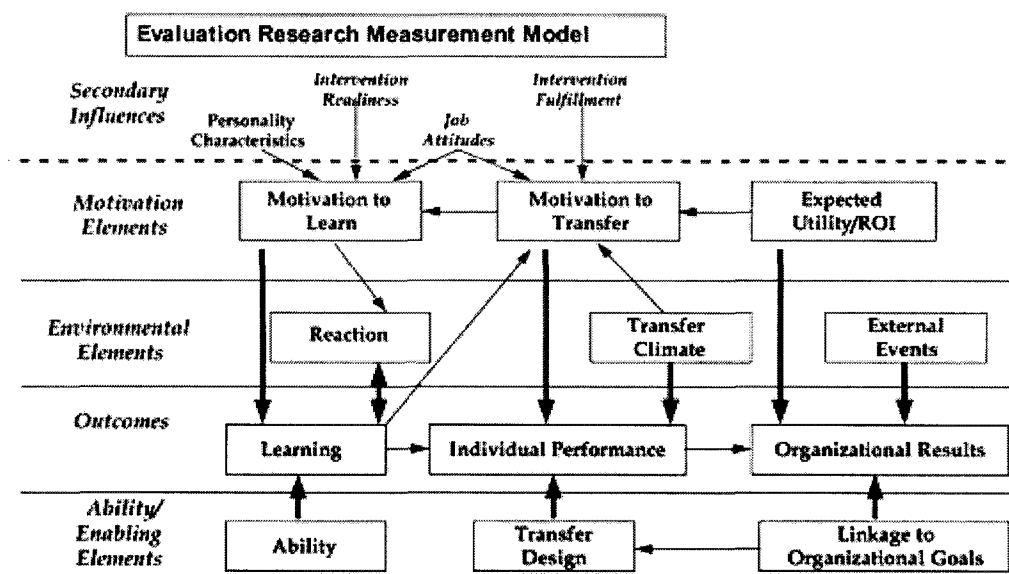
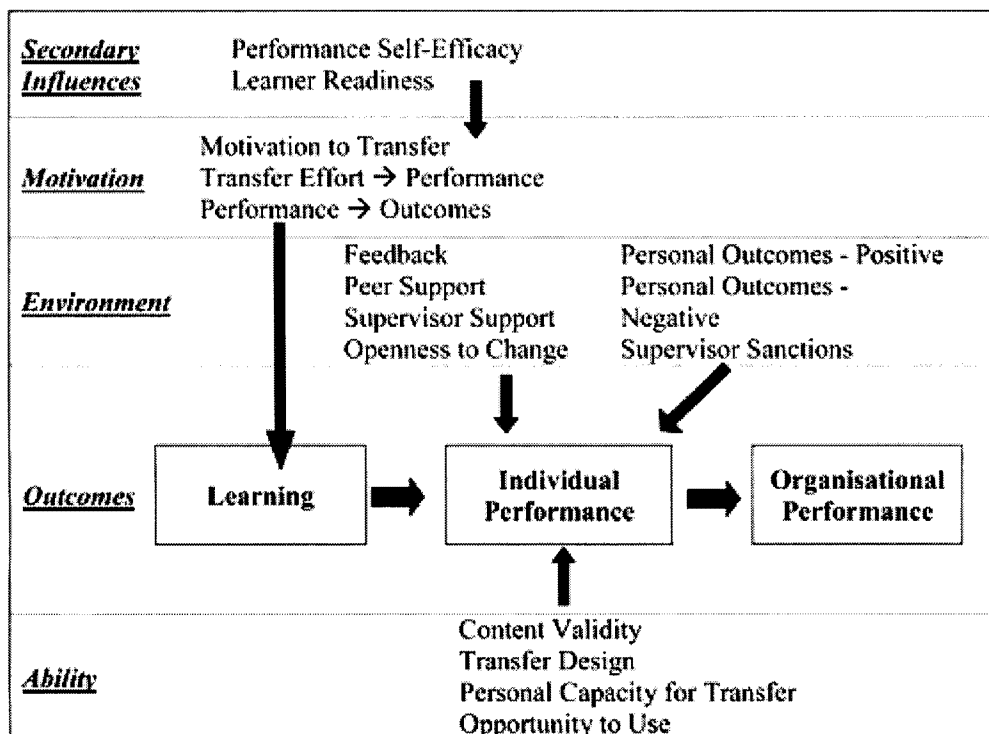


Figure 2.2 : Holton’s Evaluation Model

Holton's model is holistic in its approach and moves away from a concentration on outcomes to a discussion about how training works and how the factors that make it work can be enhanced in the organisation. By doing so it avoids the weaknesses that were identified in the case of outcomes-based models that assumed simple relationships and causal linkages were in place.

Much work has been done on the transfer of learning into the workplace from training interventions. Several influences on the motivation to transfer have been identified including intervention fulfilment, learning outcomes, job attitudes, and expected utility of results (Broad and Newstrom, 1992; Baldwin and Ford, 1998). Holton et al., (1999) encapsulate these approaches most successfully in their conceptual model of learning transfer systems Figure 2.3.



Source: Holton *et al.* (1999). Figure is copyright Holton and Bates.

Figure 2.3: The Learning Transfer System Inventory

The learning transfer system is described as those organisational supports and constraints that influence whether participants take what they learn in the training environment and transfer it to the work environment. It describes one critical portion of the overarching Holton (1996) model, the transfer of learning into individual performance. Based on this model, the learning transfer system inventory (LTSI) was developed to assess practically these factors in the workplace (Holton *et al.*, 1999). Sixteen factors that influence transfer were identified and validated using common factor analysis on a large and diverse sample.

Some of the 16 factors refer to the transfer of learning in the organisation in general and some to the specific training intervention. Attitudes, preparation and the transfer

climate may differ between different types of training such as management versus technical or between different departments and teams. The LTSI enables an organisation to identify the factors which make some training programmes more successful than others and, over time, a comprehensive profile of the organisation can be developed. The 16 factors are grouped into four scales in Figure 2.3:

- 1 - ability to use knowledge and expertise;
- 2 - motivation to use knowledge and expertise;
- 3 - work environment supporting use of knowledge and expertise;
- 4 - trainee characteristics (secondary elements).

In practice, the LTSI is a questionnaire presented to participants at the end of their training course/program. Respondents indicate, on a Likert scale, the extent to which they agree or not with a series of statements and answers are scored from 1 (strongly disagree) to 5 (strongly agree). These answers are compiled to give factor scores, again in a range of 1 to 5. In effect, scores below 2.5 are deemed to be negative, 2.5 to 3.5 are neutral and 3.5 to 5 positive

Learning systems have the potential to help close the gap between theory and program-level human resource development evaluation. The influences approach, as discussed here in Holton's model, links economic theory with practical human resource development by describing the system variables which might intervene between program outcomes and firm level outcomes. Hence, the LTSI is not so much about evaluating training but rather about assessing how well the organisation

uses training to achieve its outcomes and improve work effectiveness and productivity.

Tannenbaum, Mathieu, & Cannon-Bowers Model (1991)

Employees, managers, and organisations are increasingly turning to training as a means of addressing work issues (Goldstein, 1989). For example, training is used to improve current job skills, to prepare for career advancement, and to re-skill for new or changing job requirements. It is also a common point of entry into organisations. Yet, little is known about the impact of training programs on the individuals who enter work through the programs (Goldstein, 1980b). Kirkpatrick (1976) suggested that, when examining the impact of training programs, one should consider trainees' reactions, learning, and behaviour change, along with the subsequent organisational results. However, Fieldman (1989) noted that research should also examine how attitudes and values change in training settings. The study by Tannenbaum et.al., (1991) addressed the research needs raised by Goldstein (1980b) and Fieldman (1989) by examining how training can influence the development of trainees' attitudes and beliefs. In particular, the study investigated how trainees' expectations and desires before training, and their subsequent perceptions of what occurred during training can influence the development of post training commitment, self-efficacy, and motivation.

The study design and the hypothesised relationships among the variables are described graphically in Figure 2.4. Each trainee enters training with certain expectations and desires, demographic characteristics, and different levels of commitment, self-efficacy and motivation. There is evidence to suggest that pre-

training commitment, self-efficacy, and motivation, as well as trainee demographics can be directly related to post training commitment, self-efficacy, and motivation. During training, the trainees experience the content and method of training as well as the social aspects of the training. Trainee perceptions reflect the individual trainees' observations of what transpired during training, trainee performance reflects how well trainees performed, and trainee reactions reflect satisfaction with the training. Training fulfilment is depicted as a function of pretraining expectations and desires and of post training perceptions. Training fulfilment, trainee reactions, and trainee performance are hypothesised to be positively related to post training commitment, self-efficacy, and motivation.

The results suggest that training can influence trainees' feelings of commitment, self-efficacy, and motivation and that fulfilling trainees' expectations and desires can play an important role in the development of post-training attitudes. Trainees who completed the training demonstrated significant improvements in their level of organisational commitment and self-efficacy. This is consistent with previous research that showed improved commitment and self-efficacy in training contexts (Louis et al., 1983; Gist et al., 1989).

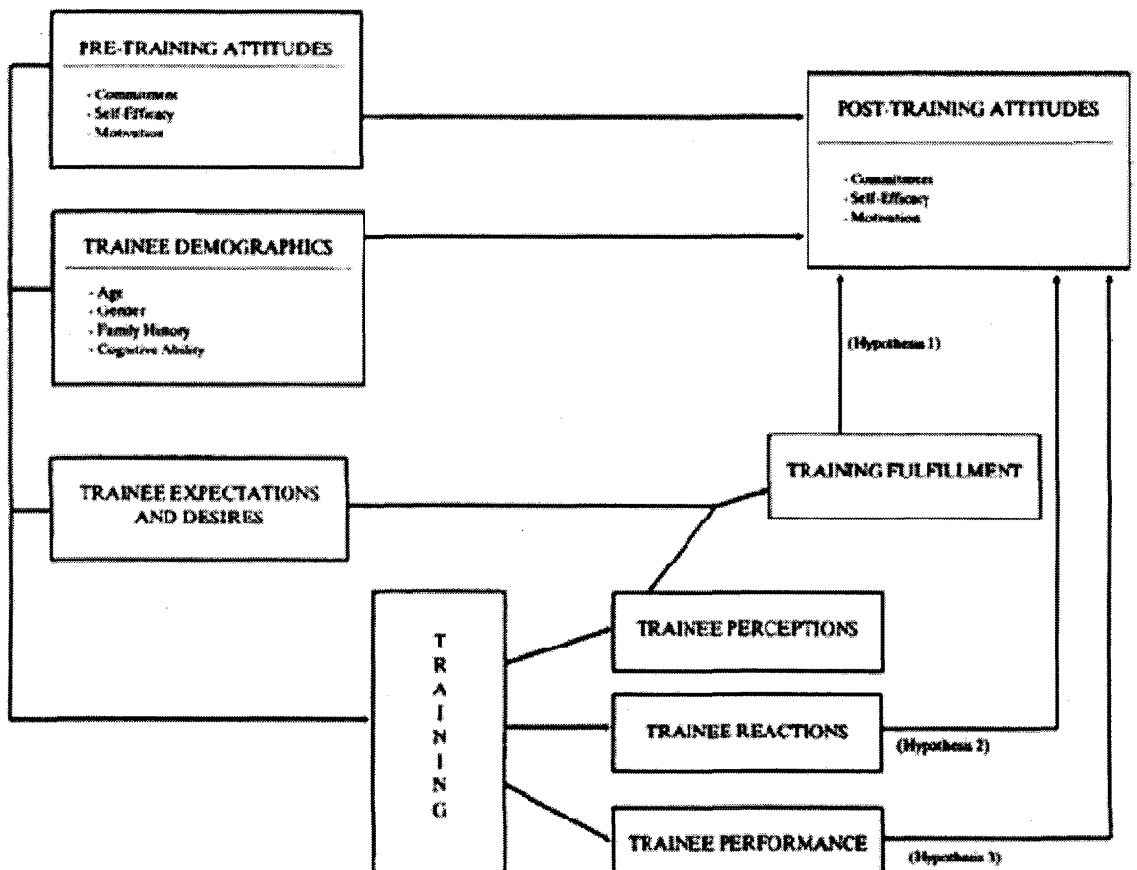


Figure 2.4: Study Design and summary of hypotheses – Tannenbaum, Mathieu, and Cannon-Bowers (1991)

Source: Meeting Trainees' Expectations: The Influence of Training Fulfilment on the Development of Commitment, Self-Efficacy, and Motivation (Tannenbaum, Mathieu, & Cannon-Bowers 1991)

As is evident by the discussion so far, while all three models discussed, contribute significantly to the issue of training transfer within their specific areas of interest, it is fair to state that none of them approach the subject of training transfer from a holistic aspect. The Baldwin and Ford (1988) model focuses on trainee characteristics, training design, and work environment and maintenance of transfer skills. However, it does not provide evidence of detail with respect to pre-training planning such as training needs analysis, learner readiness, aligning training with

organisational goals and objectives and trainee demographics. The Holton (1996) model is more holistic in that it focuses on the influencers rather than on the outcomes. This model provides some evidence of its attention to the pre-training phase by including among its influencers, trainee characteristics such as self-efficacy, learner readiness, and learner fulfilment, but little reference to the important factor of training design. The third model, Tannenbaum et.al., (1991), provided in-depth detail regarding trainee characteristics such as organisational commitment, self-efficacy and motivation. While there is sufficient detail regarding trainee characteristics, there is insufficient detail regarding training design, transfer climate, organisational culture and the work environment, all of which appear to have a significant impact on positive training transfer.

Conclusion

Training in an organisational setting is a purposeful activity, intended to improve the knowledge and skills of employees to perform work tasks. In 1996 Australian organisations spent \$4.7 billion on structured training alone. Since organisations spend such significant sums on training activities, it is important for training programs to result in identifiable improvements in job performance. Training is only effective if it causes a change in behaviour on the job, and that change leads to positive organisational outcomes. Training effectiveness can be evaluated on four levels, trainee reaction (level 1), trainee learning (level 2), trainee behaviour (level 3), and organisational results (level 4). While all four levels of evaluation are important to training, level 3 and level 4 outcomes are far more critical to managers. Unfortunately, most training evaluating only occurs at level 1.

Training transfer is the degree to which trainees apply their new found knowledge and skills including any change in behaviours and attitudes gained in the training to the job. It is important to identify factors which may hinder the transfer of training from the training environment to the workplace. While some researchers in the past point to the importance of the work environment to facilitate effective transfer, others have conceded that still more work is needed to determine precisely which aspects of work environment are critical to transfer, and to understand whether the relationship is one of cause and effect or something more complex.

Baldwin and Ford (1988) proposed a three stage model for training transfer consisting of inputs, outputs and conditions for transfer. Training inputs include trainee characteristics, training design, and the work environment. They were critical of early transfer studies for their propensity to study only one training input, rather than attempting to examine the complex interactions of several inputs. They also felt that more work was needed to conceptualise and operationalise other factors such as, trainee characteristics, and the work environment.

Holton (1996) proposed an alternative and more comprehensive model which is based on factors which might influence training transfer. Major intervening variables that affect learning such as trainee readiness, motivation, training design and reinforcement of training on the job are put forth in the Holton (1996) model. Holton's model is more holistic in its approach and moves away from a concentration on outcomes to a discussion about how training works and how the factors that make it work can be enhanced in the organisation. By doing so it avoids the weaknesses

that were identified in the case of outcomes-based models that assumed simple relationships and causal linkages were in place.

A third model by Tannenbaum, Mathieu, and Cannon-Bowers (1991) addressed the research needs raised by Goldstein (1980b) and Fieldman (1989) by examining how training can influence the development of trainees' attitudes and beliefs. In particular, the study investigated how trainees' expectations and desires before training, and their subsequent perceptions of what occurred during training can influence the development of post training commitment, self-efficacy, and motivation.

A comparison of the three models suggest that each have contributed significantly to the issue of training transfer but limited to their specific areas as described in the respective models. A summary of recent literature suggests that there is a need for research to be conducted which includes a collection of variables which might influence transfer (Perryer, 2004). In early studies trainee ability was often examined. Motivation has attracted, and continues to attract the interest of researchers (Perryer, 2004). A number of studies have also looked into the impact of organisational commitment on transfer, with mixed results. More work needs to be done to establish how or if organisational commitment affects transfer of training. Similarly, while research has been conducted in the past into work conditions which might affect training transfer (Machin, 1999, 2000, 2003), it appears there is still room for improvement, specifically the influence of supervisor support and the opportunity to use new found knowledge and skills.

CHAPTER 3 – CONCEPTUAL FRAMEWORK

Introduction

This chapter presents the conceptual framework proposed in this study. Firstly, a framework for training transfer is examined which includes, trainee characteristics, training design, and conditions for transfer. Each of these is then examined in detail and its relationship to this study is established. However, it must be noted that this study does not include training design. Secondly, each of the constructs proposed in this study, motivation to learn, organisational commitment, opportunity to use, and supervisor support, are thoroughly examined and a group of studies relating to each of these constructs is provided in support of the need for this research. Finally, the model used in this research is proposed together with the research questions.

A Framework for Examining Training Transfer

Examination of training transfer requires a clear understanding of what is meant by transfer as well as the identification of factors that affect transfer. Figure 3.1 presents a framework for understanding how the transfer process might work. It is based on a combination of other models such as Baldwin and Ford (1988) and Holton et al., (1999).

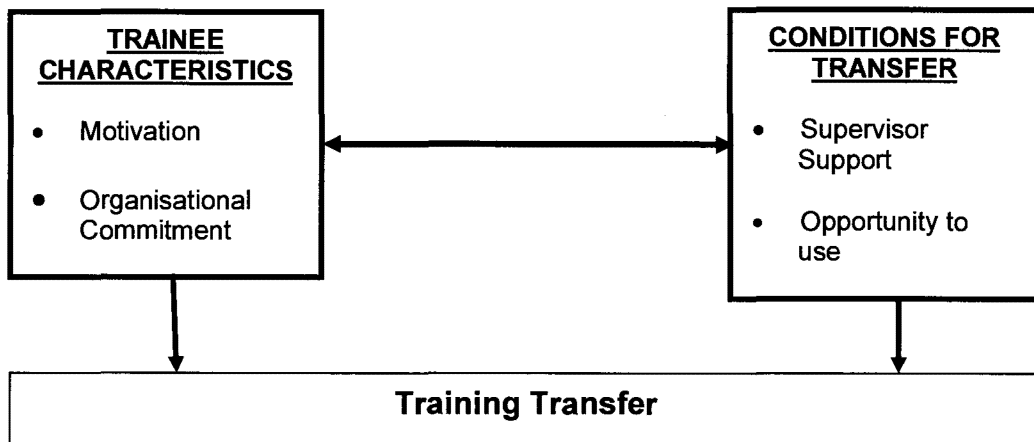


Figure 3.1 The Research Model Used in the Study

In Figure 3.1, the transfer process is described in terms of trainee characteristics, conditions for transfer, and training output (training transfer). The trainee characteristics include, the ability of the trainee to undertake the training, motivation to undertake the training, the capacity of the training, emotional needs, and the value of the training to the trainee, and the level of organisational commitment the trainee has . The conditions for transfer include, the workplace application and support available to the trainee, and the culture of the organisation in being able to provide the trainee with the opportunity to apply, practise and maintain the skills acquired. The work environment factors include climatic factors such as supervisory support, peer support, technological support, rewards as well as constraints and opportunities.

Trainee Characteristics

The process of putting new learning from adult training into practice is influenced by a range of factors which include the characteristics of the learner, the context of the application, as well as characteristics of the training program. Programs that address these multiple influences and prepare learners to cope effectively with obstacles are

more likely to succeed and produce results than those programs that treat training as a simple process of providing knowledge, skills and attitudes (Broad & Newstrom, 1992). A wide variety of trainee characteristics thought to affect transfer has been suggested in the literature to date (Axtell, Maitlis & Yearta, 1997; Baldwin & Ford, 1988; Donovan, Hannigan & Crowe, 2001; Robinson, 1984; Santos & Stuart, 2003; Tannenbaum, Mathieu & Cannon-Bowers, 1991; Trost, 1982), including cognitive ability, motivation, self-efficacy, perceived value and relevance of training, emotional intelligence, and learner readiness.

While there is ample evidence based on empirical investigations relating to transfer issues surrounding training design, work environment, and trainee skills, there is insufficient empirical investigations of ability, motivation, self-efficacy, learner readiness, and personality of the trainee (Baldwin & Ford, 1988; Tannenbaum et.al., 1991; Holton et.al. 1999; Donovan et.al. 2001). Another trainee characteristic which has not appeared in the literature is that of emotional intelligence. Goleman (1996) defines emotional intelligence as, “*the capacity for recognising our own feelings and those of others, for motivating ourselves, and for managing emotions well, in ourselves and in our relationships*”. According to Bagshaw (2000) people with emotional intelligence cope well with their own emotions, and notice, and respond appropriately to, the emotions of other people. This makes it easier to harness their potential, and thereby the potential of the organisation. Therefore the trainee attributes of learner readiness, motivation to succeed, self-efficacy, cognitive ability, emotional intelligence, commitment, and perceived value of training are important factors to consider when designing any framework to investigate training transfer.

The process of putting new learning from adult training into practice is influenced by multiple factors. These include characteristics of the learner, the context of the application, as well as characteristics of the learning program. Programs that address these multiple influences and prepare learners to cope effectively with obstacles are more likely to produce results than programs that treat application as a simple process of transferring knowledge, skills and attitudes from training to the workplace (Broad & Newstrom, 1992). There is extensive literature on the many factors involved in the way learners learn and many studies have suggested ways by which training programs, trainers, learners, their supervisors, and the workplace can facilitate this process (Broad & Newstrom, 1992; Baldwin & Ford, 1988; Crandall, 1990; Ford, 1994; Fox, Mazmanian, & Putnam, 1989; Kemerer, 1991; Ottoson & Green, 1987; Ottoson, 1994, 1995). Despite this growing literature, more definite understanding is needed of the relationship between learners' perceptions of the programs they attend and the likely effects of these perceptions on what they do when they return to their jobs and communities. "Perhaps the key to the application of learning resides in the learner's perception of how important the new learning is to his or her ability to work effectively in the setting where the application must take place" (Kemerer, 1991, p. 67). One such characteristic which might influence trainee's ability to learn effectively is their motivation to learn and thereby assist the process to transfer learning to the workplace.

Motivation at Work

Noe (1986) defines motivation as the trainee's desire to learn the content of training and development activities. Only a few studies have focussed primarily on

motivation to transfer. Tannenbaum, Mathieu, Salas, and Cannon-Bowers (1991) conducted a study using naval recruit training. They hypothesised that training fulfilment, trainee reactions, and training performance would be related to the development of post-training attitudes.

Huczynski and Lewis (1980) concluded from their study that issues important to whether or not trainees use their training included among other factors, whether or not they attended the training on their own initiative, how helpful they believed the training would be to them on their jobs and the motivational climate of the organisation, in particular the support they receive from their supervisor. Locke (1980) stated that behavioural choices are regulated by behavioural intentions and considerable evidence supports the hypothesis that intentions are highly correlated with behaviour. Perceived usefulness or performance-utility has been viewed as influencing motivation to transfer and had been used to gauge trainees' motivation to transfer.

Motivation to learn and motivation to engage in learning are constructs that are both closely related to each other and closely related to work motivation. With regard to training, motivation acts as the force that energises or creates enthusiasm for the program, is a stimulus that guides and directs learning and content mastery, and influences and promotes application of newly acquired skills and knowledge (Noe, 1986). Noe and Wilks (1993) asserted that motivation to learn, motivation to transfer, and evaluation of previous development experiences have a direct effect on the trainees' participation in development activities. They developed and tested a conceptual model of development activity that was based on work conducted by

Dubin (1990), Farr and Middlebrooks (1990), and Kozlowski and Farr (1988) and found that motivation to learn, perception of benefits to work environment perceptions had significant, unique effects on employee development activity. Baldwin et al., (1991), Mathieu et al., (1992) and Tannenbaum et al., (1991) also indicated that there is a relationship between motivation to learn, learning and completion of training programs. According to Smith-Jentsch et al., (1996), trainees who are motivated to do well in training are more likely to learn the content or the principle of a training program than those trainees who are less motivated to learn.

Many studies conducted in the past on motivation (see table 3.1) have included motivation either as a discrete independent variable or among a group of variables for the purpose of investigating its relationship with the dependent variable, transfer outcome. This study proposes the use of motivation as an independent variable as a trainee characteristic with the aim of identifying its relationship and ability to influence training transfer as the dependent variable. Consistent with previous research (as outlined in table 3.1) the use of motivation at work as a factor perceived to influence training transfer was measured by a survey instrument as described in the following chapters of this thesis.

One critical determinant of training effectiveness is the trainees' level of training motivation (Mathieu et al., 1993; Mathieu and Martineau, 1997; Tannenbaum and Yukl, 1992). Noe (1986) suggested that characteristics such as motivation and attitudes are malleable individual difference factors that play a critical role in achieving training effectiveness. Even if trainees possess the ability to learn the content of a course, they may fail to benefit from training because of low motivation.

Researchers have also suggested that the characteristics of trainees such as motivation and attitudes are more important to training success than are course-content variables (Fleishman and Mumford, 1989; Quinones, 1997). Therefore, the motivation of trainees plays an important role in the effectiveness of the training program.

In a training program, motivation influences the willingness of an employee to attend training in the first place (Maurer & Tarulli, 1994; Noe & Wilk, 1993). It can also affect a trainee's decision to exert energy toward the training program (Ryman & Biersner, 1975). Cheng and Ho (2001) reviewed studies conducted in the past decade and concluded that training motivation influences trainees' training performance and transfer outcomes. The important role of training motivation in training effectiveness has also been confirmed by several empirical studies (Axtell, Maitlis & Yearta, 1997; Carlson et al., 2000; Cheng, 2000; Guerrero & Sire, 2001; Tracey et al., 2001). Tracey et al., (2001) for example, developed a basic managerial knowledge and skills training program with managers from 40 hotels owned by a private organisation. They found that trainees' motivation to learn positively influenced trainees' reactions to the training program and their amount of learning. In a field study aimed at improving technical staff's interpersonal skills at work, Axtell et al., (1997) found that trainees' motivation was positively associated with immediate and long-term transfer of training after returning to their work sites. Other studies have also linked training motivation to training effectiveness, including learning and satisfaction (Guerrero & Sire, 2001), and the perceived knowledge and skill transfer (Cheng, 2000).

As trainees' motivation to learn is an important determinant of training effectiveness, a number of scholars have called for research to examine antecedent factors of training motivation (Mathieu & Martineau, 1997; Mathieu et al., 1993; Noe & Wilk, 1993; Tannenbaum & Yukl, 1992). Specific suggestions include contextual variables like training assignment, organisational climate and framing of training (Quinones, 1997).

Past research has suggested that environmental factors, such as materials and supplies, tools and equipment, financial and budgetary support influence employees' training motivation (Guerrero & Sire, 2001; Mathieu et al., 1993; Mathieu & Martineau, 1997; Tracey et al., 2001). In addition to the environmental factors, training contextual factors such as participation, framing and organisational climate have also been shown to correlate with training motivation. Past research found that training assignment influenced trainees' motivation for training. Some researchers indicated that if employees had no choice of participation, their training motivation would decrease (Guerrero & Sire, 2001; Quinones, 1997; Hicks & Klimoski, 1987; Baldwin & Magjuka, 1991). For example Hicks and Klimoski (1987) found that when trainees who attended training under explicit pressure from their superiors, their motivations were lower than those trainees who attended training of their choice and who were not forced to attend the training by their superiors. Ryman and Biersner (1975) found a similar result. Specifically, they found that trainees who expressed the most concern over their involvement in the experiment (i.e. being

forced to attend training) were more likely to drop out of the course soon after the beginning or halfway through, whereas volunteers were likely to remain.

In contrast, Mathieu et al., (1993) obtained a different finding. They studied a proof-reading training program prepared for the staff of a state college administration and hypothesized that trainees who attended the training program voluntarily would have higher motivation. Unexpectedly, the result did not show that there was any association between the two variables. Mathieu et al., (1993) attributed the finding to the fact that, because the essence of a proof-reading program was designed to improve trainees' skills on their current jobs, trainees with strong career goals may not have considered the program. This explanation implies that the perceived importance of trainees' training programs may play an important role in the effect of training assignment on training motivation.

Baldwin and Magjuka (1991) argued that the benefits of voluntarily attending the training program have often been exaggerated. Baldwin et al., (1991) further showed that trainees who were mandated to attend particular training programs were more motivated than those who volunteered. This is because when supervisors feel a particular program to be central to the achievement of organisational objectives, they usually assign employees to attend that program. Mathieu and Martineau (1997) concluded that voluntary participation is like a double-edged sword: if people want to estimate the influence of voluntary participation on training motivation correctly, they should analyse what trainees think about the training programs. In other words,

if organisations demand certain individuals or all the staff to attend a given training program, it will deliver a clear message that training is important.

In addition to traditional training design factors such as appropriate training content (e.g. Ford & Wroten, 1984), clear instructional objectives and sufficient conditions of practice (e.g. Gagne et al., 1992), trainees' perceived importance of a training program has been found to influence trainees' motivation for training. If trainees believe that the training programs are beneficial and important, their training motivation will increase. Noe and Wilk (1993) showed that the more benefits that employees feel they can obtain from participating in training activities, the higher their rates of participation in such activities.

Cohen (1990) found that trainees' training motivation will be enhanced if they feel that the training programs are beneficial or necessary. Clark et al., (1993) found that job utility and career utility have significant influences on employees' training motivation. Thus, training programs that are job or career-related and provide the transfer climate conditions such as supervisory support and opportunity to practice will influence employees' training motivation (Mathieu & Martineau, 1997).

Table 3.1: Studies in which Motivation has been identified as an influence on training transfer at the workplace

The following table provides details of the various studies which examined motivation and its influence on the training transfer environment at the workplace.

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
1	Axtell & Maitlis (1997)	75 non-managerial staff	Interpersonal skills	New skill levels, relevance of training, self-efficacy, motivation, managerial support, autonomy	Self report (immediate, 1 month and 1 year post-training)	Transfer	Environmental variables and motivation predict transfer
2	Bates, Holton, & Seyler (2000)	73 production workers	Computer based occupational safety and health modules	Learning, motivation, supervisor support, supervisor sanctions, peer support, change resistance, opportunity to use, content validity	Observation by supervisors	Performance	Content validity, supervisor sanctions, peer support and change resistance related to performance
3	Cheng & Ho (1998)	155 MBA students	MBA degree	Training value, training reward, training motivation, opportunity to transfer	Self reports	Transfer	Training value significantly related to transfer outcomes

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
4	Clark, Dobbins & Ladd (1993)	245 trainees from different organisations	A range of different training activities	Training decision involvement, job utility, transfer climate, supervisor training transfer climate	Self report	Training motivation	Decision-maker credibility related to perceived job and career utility, supervisor training transfer climate related to perceived job utility, job utility predicted transfer motivation
5	Facteau, Dobbins, Russell, Ladd & Kudisch (1995)	967 managers and supervisors	Management training	Motivation, compliance incentives career planning, commitment, support	Self reports	Transfer	Pre-training motivation, subordinate, peer and supervisor support predicted transfer
6	Holton, Bates & Ruona (2000)	1616 employees in various organisations	Various training activities	Learner readiness, motivation, personal capacity to transfer, supervisor support, transfer design, opportunity to use, and a range of other variables	Self report	Factor structure of transfer climate	All sixteen factors in the study make up transfer climate construct

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
7	Komacki, Heinzman & Lawson (1980)	55 vehicle maintenance staff	1 hour safety training program	Motivation	Trained observers (weekly upto 40 weeks)	Safety behaviour visible	Significant increase in safety performance when training combined with feedback
8	Machin & Fogarty (1997)	40 staff from Queensland police service	3 day office training program	Self efficacy, motivation to learn and transfer, commitment and other related variables	3 surveys, self reports	Motivation to transfer,	Transfer intentions mediates relationship between self – efficacy/motivation and transfer outcomes
9	Mathieu, Martineau & Tannenbaum (1993)	215 university students	Bowling course	Self efficacy, achievement, motivation situational constraints	Self report	Training reactions, performance	Achievement motivation related to self-efficacy, training environment constraints not related to self-efficacy.
10	Mathieu, Tannenbaum & Salas (1993)	106 university students	Human Resources training	Situational constraints	Self report	Training motivation	Situational constraints negatively related to trainee motivation

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
11	Noe & Schmitt (1986)	60 educators	Administrative and interpersonal skills	Career & job attitudes, motivation, environmental favourability	Survey	Learning and performance	Job involvement related to learning and behaviour change
12	Quinones, Ford, Sego & Smith (1995)	118 Air force graduates and their supervisors	Equipment used to support aircraft	Learning, career motivation, supervisor attitudes and work group support	Self report	Opportunity to perform (4 months after training)	Learning and career motivation related to supervisor attitude which in turn predicted opportunity to perform
13	Seyler, Holton, Bates, Burnett & Carvalho (1998)	74 employees in a petrochemical plant	Occupational health and safety program	Individual attitudes, reactions, learning, work environment	Survey	Motivation to transfer	Individual attitudes and work environment related to motivation to transfer
14	Tracey, Hinkin, Tannenbaum & Mathieu (1995)	115 hotel manager trainees, 305 supervisors and co-workers	Basic managerial knowledge and skills	Self-efficacy, motivation, job involvement, commitment, perceptions of work environment	Survey	Training reactions and knowledge acquisition	Work environment related to pre-training self-efficacy and motivation

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
15	Tracey & Tews (1995)	21 training and HR professionals from 10 service sector organisations	No specific program was identified	Factors that influence effectiveness of training	Interviews	Training Effectiveness	Individual factors such as ability, attitudes, motivation; work environment factors of job characteristics, social networks and organisational systems influence training effectiveness
16	Tziner, Haccoun & Kadish (1991)	81 Israeli Defence Force Trainees	Advanced training methods	Post-training relapse prevention, environmental support, motivation to transfer, mastery	Random assignment of trainees	Self report and supervisor rating of training & transfer strategy use – 10 weeks post-training	Relapse Prevention led to mastery and increased use, supervisors rated more skills use. Support and internal locus led to transfer
17	Warr, Allan & Birdi (1999)	163 motor vehicle technicians	Operation and interpretation of output from an electronic tool	Learning, motivation, confidence, use of learning strategies, learning confidence, transfer climate	Survey	Transfer	Learning related to motivation, confidence and use of learning strategies, transfer climate and learning confidence related to changes in job behaviour

Organisational Commitment

Organisational commitment is the relative strength of an individual's identification with and involvement in a particular organisation (Tannenbaum et al., 1991).

Conceptually it can be characterised by at least three factors; 1) a strong belief in and acceptance of the organisation's goals and values; 2) a willingness to exert considerable effort on behalf of the organisation; and 3) a strong desire to maintain membership in the organisation (Mowday, Porter, & Steers, 1982, p.27). Employees' organisational commitment levels are like to predispose them to view training as more or less useful, both to themselves and to the organisation. When viewed this way, organisational commitment can be considered as an influence on training effectiveness.

The suggestion that organisational commitment plays a key role in training motivation is not new (Fecteau, Dobbins, Russell, Ladd, & Kudisch, 1995; Noe, 1986; Tannenbaum, Mathieu, Sala, & Cannon-Bowers, 1991). Morrow (1983) surmised that work commitment is a function of personal characteristics, including dispositional qualities, and presents a facet design of work commitment that includes work ethic, career and organisational commitment and job involvement (Morrow, 1993). Later research efforts focus on three types of commitment: affective, continuance, and normative commitment (Allen & Meyer, 1990; Meyer & Allen, 1984). Allen and Meyer defined affective commitment as an "emotional attachment to the organisation such that the strongly committed individual identifies with, is involved in, and enjoys membership in, the organisation" (1990, p.2). Continuance commitment is based on the "individual's recognition of the costs (or losses) associated with discontinuing the activity" (Allen and Meyer, 1990, p.33).

Mowday et al., (1982) proposed that initial work experiences should influence the development of commitment. Often, an employee's first experience with an organisation occurs in a training setting in the form of orientation or induction training. In a study examining socialisation practices, Louis, Posner, and Powell (1983), found that when formal offsite residential training was viewed as helpful, new employees reported greater levels of organisational commitment. Enhanced organisational commitment can be a desirable outcome of early training experiences. Employees may view an effective training experience as an indication that the company is willing to invest in them and cares about them; thus, training may enhance their commitment to the organisation. This should be particularly true if the training met participants' expectations and desires.

Motivation and commitment are related but distinct concepts (Scholl, 1981). Recent research has shown that trainees who enter training with higher levels of motivation learn more, perform better, are more likely to complete training than their less motivated colleagues, and hence are more likely to be committed to the organisation than their counterparts in the organisation. However, a motivated and committed employee does not guarantee training transfer. Other influencing factors such as the conditions for transfer including the support provided by supervisors and the opportunity to use the training need to be considered (Baldwin & Ford, 1988; Holton et al., 1999).

Consistent with previous research (see table 3.2) where organisational commitment was investigated as a discrete independent variable or as part of a larger group of

variables and its relationship with training transfer as the dependent variable, this study proposes the investigation of organisational commitment as an independent variable within the context of a trainee characteristic and its relationship with training transfer as the dependent variable.

Table 3.2: Studies in which Organisational Commitment has been identified as an influence on training transfer at the workplace

The following table provides details of the various studies which examined organisational commitment and its influence on the training transfer environment at the workplace:

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
1	Baumgartel & Jean-pierre (1972)	240 Indian managers	Management development program	Perceptions of transfer climate	Self reports made immediately	Effort to apply	Effort to apply positively related to positive training transfer climate
2	Baumgartel, Reynolds & Pathan (1984) study 1	260 American managers	Human relations	Perceptions of climate	Self reports (immediate)	Effort to apply	Effort to apply positively related to transfer climate
3	Cheng (2000)	268 MBA students	MBA degree	Work locus of control, type A personality, self efficacy, organisational commitment, transfer reward, job involvement	Self report	Motivation to learn, perceived knowledge and skill transfer	Self efficacy, type A personality, transfer climate, transfer rewards, related to motivation to learn and transfer

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
4	Facteau, Dobbins, Russell, Ladd & Kudisch (1995)	967 managers and supervisors	Management training	Motivation, compliance incentives career planning, commitment, support	Self reports	Transfer	Pre-training motivation, subordinate, peer and supervisor support predicted transfer
5	Holton, Bates & Ruona (2000)	1616 employees in various organisations	Various training activities	Learner readiness, motivation, personal capacity to transfer, supervisor support, transfer design, opportunity to use, and a range of other variables	Self report	Factor structure of transfer climate	All sixteen factors in the study make up transfer climate construct
6	Machin & Fogarty (1997)	40 staff from Queensland police service	3 day office training program	Self efficacy, motivation to learn and transfer, commitment and other related variables	3 surveys, self reports	Motivation to transfer, organisational commitment	Transfer intentions mediates relationship between self – efficacy/motivation and transfer outcomes

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
7	Orpen (1999)	105 managers	No specific program identified	Organisational commitment, job involvement, support from work training incentives, training resources	Survey and self reports	Training motivation and organisation commitment	Commitment, social support, resources and needs related to motivation: commitment and support resources related to transfer
8	Seyler, Holton, Bates, Burnett & Carvalho (1998)	74 employees in a petrochemical plant	Occupational health and safety program	Individual attitudes, reactions, learning, work environment	Survey	Motivation to transfer	Individual attitudes and work environment related to motivation to transfer
9	Tesluk, Farr, Mathieu * & Vince (1995)	252 employees and supervisors	Employee Involvement (EI) training	Managers attitudes to EI, participative climate, commitment	Self reports	Training reactions and knowledge acquisition	EI activity, commitment related to transfer.
10	Tracey, Hinkin, Tannenbaum & Mathieu (1995)	115 hotel manger trainees, 305 supervisors and co-workers	Basic managerial knowledge and skills	Self-efficacy, motivation, job involvement, commitment, perceptions of work environment	Survey	Training reactions and knowledge acquisition	Work environment related to pre-training self-efficacy and motivation

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
11	Weiss, Huczyski & Lewis (1980)	48 students	3 day training course on the and use of critical path analysis	Attempts to transfer learning, actors inhibiting or facilitating transfer	Comparisons of two groups- participant interviews. Self report questionnaire (4 months post-training)	Transfer	Workload, change resistance and rates of change inhibit transfer, supervisor support, responsibility for own work and freedom to exchange information facilitate transfer

Conditions for Training Transfer

There is a growing recognition of the transfer problem in organisational training as concerns are raised that much of what is taught is not applied in the work setting.

This concern has become even stronger given today's changing job requirements, the view of people of learning as the key to competitive advantage, and the move towards learning as a key mechanism for fulling utilising human resources. The maintenance of knowledge and skills learned in a training situation are dependent on a number of factors (otherwise referred to as conditions for transfer) including the changes that are taking place in a work setting (Baldwin and Ford, 1988).

Rouiller and Goldstein (1993) and Tracey, Tannenbaum and Kavanagh (1995) have shown that the transfer climate in an organisation is significantly associated with the extent to which learning is actually applied. When supervisors and colleagues encourage and reward the application of course material, training is more likely to yield positive outcomes at work. In assessing level three (job 'behaviour' in Kirkpatrick's terms), it is thus important to examine differences between trainees in the nature of their local transfer climate. Baldwin and Ford (1988) in their early research more than 15 years ago suggested that the key multidimensional work environment constructs such as support, climate and opportunity to use play a significant role in how transfer may or may not take place. In addition they identified the need for further research into which person and situational factors may interact to affect learning and transfer.

Although practitioners have stressed the importance of ensuring that the conditions (such as work environment, organisational culture, and opportunity for practice) for

transfer are available and conducive to creating positive transfer, empirical evidence focusing on this dimension is limited (Baldwin & Ford, 1988). However, since the 1988 study, there have been some studies conducted based on work-environment variables, supervisory support, opportunities for practice, continuous learning culture, and task constraints (Faction et al., 1995; Tracey et al., 1995).

The supports-in-organisation variables such as supervisory support, peer support, opportunities for practice in the job setting, promoting a learning culture in the workplace are all said to be influential in achieving positive training transfer (Noe, 1986; Ford et al., 1992). However, Tznie et al., (1992) found that a supportive environment alone could not influence trainees' use of trained skills, and that they also need a continuous learning culture where their motivation to learn, practise and apply could be enhanced. Tracey et al.,(1995, p. 241) define continuous learning culture as, "*a pattern of shared meaning or perceptions and expectations by all organisational members that constitute an organisational value and belief*". Such shared meanings involve individual, task and organisational characteristics.

Another aspect of organisational support which has the potential to contribute to transfer of skills at the workplace is one of management style whereby pre-course discussion with one's boss and subsequent boss sponsorship was seen as aiding training transfer (Huczynski & Lewis, 1980). Hence in designing a conceptual framework to test training transfer, the conditions of transfer variables such as work environment, (opportunities for practice and application, supervisory and peer support), and organisational culture (management style, learning culture, reward and recognition) must be considered.

Supervisor Support

Supervisor support refers to the '*extent to which supervisors reinforce and support use of learning on the job*' (Holton et al., 1997, p.110). Mosel (1957) was the first to articulate the link between an unsupportive organisational climate and transfer failure. He concluded that training will only transfer to the extent that supervisors support and practise the same behaviours the staff are taught in the training environment. In other words, irrespective of the training, most learners will adopt the behaviour of the organisational role models in their immediate work environment. If training is not congruent with what management is informally teaching and reinforcing day by day, it will not 'stick'. Mosel's insights were largely ignored for twenty years, but during the last decade practitioners and researchers have begun to recognise that learners returning to a favourable work environment will demonstrate greater utilisation of the training (see, for example, Baumgartel et al., 1984; Broad & Newstrom, 1992; Richey, 1992).

Previous research suggests organisational climate is at least as important as learning in facilitating transfer (Russell et al., 1985; Rouiller, 1989; Richey, 1992), and exerts a greater influence on transfer than trainee personality differences, in some cases regardless of the quality of the training (Baumgartel et al., 1984). The learner's perception of organisational support from supervisors and co-workers, and the likely availability of resources and technologies necessary to support transfer create a culture of transfer (Pea, 1987), which positively influences motivation to learn as well as intention to transfer (Laker, 1990; Noe, 1986). Some researchers have suggested that it is the perception of support, rather than the reality, which is the critical factor (Richey, 1992; Rouiller, 1989).

Although organisational climate tends to be perceived through the attitudes and actions of the learners' supervisor and co-workers (Broad & Newstrom, 1992), supervisors exert more influence than co-workers on the learner's decision to implement the training. Supervisors are the single most important influence on the transfer process and where they encourage and model the desired behaviours, trainees are more likely to apply the new skills; where they do not, their attitude becomes an inhibiting factor (Huczynski & Lewis, 1980; Richey, 1992). However, the presence of model behaviour will not of itself lead to transfer - the 'missing link' is an environment in which supervisor and co-workers value the use of the training and the new work behaviours (Richey, 1990; Yelon, 1992). Thus transfer is supported when the learning experience and the work environment work together to achieve the same objectives, and when trainees experience encouragement and reward for mastering and using the new skills.

A careful analysis of the organisational environment will identify potential transfer facilitators and inhibitors. On the basis of this analysis, trainees can be provided with ways to deal with the inhibitors if the organisational environment cannot be modified to promote transfer (Tannenbaum & Yukl 1992). Beaudin (1986) and Yelon (1992) provide useful sets of questions to assess the organisation in terms of its value system, formal and informal rules, degree of support, and other factors which are likely to inhibit or support transfer. These questions should first be addressed at the course design phase in order to align course content with the organisational climate. If training content is not congruent with organisational goals and values, only partial transfer or even transfer failure may be the result (Georgenson, 1982; Gordon, 1989;

Gradous, 1991). For example, a course on consultative decision-making in an organisation which values and practises individualism, is not likely to result in a high level of transfer.

Despite some insightful research on the relationship between organisational climate and transfer by Richey (1992), demonstrating how a positive perception of supervisor support facilitates transfer, there is still a perceived lack of understanding about the specific elements in the training environment, the work place, and the learner which inhibit or support transfer; these include supervisor support and the opportunity to use the skills and knowledge gained during training. Several studies have been conducted (table 3.3) where supervisor support formed part of the research model, either discretely as an independent variable or was part of a larger group of variables and the interrelationships were investigated and analysed by the use of a survey instrument and or self-reports. This study proposes the use of supervisor support as an independent variable and its relationship investigated with training transfer as the dependent variable.

Table 3.3: Studies in which Supervisor Support has been identified as an influence on training transfer at the workplace

The following table provides details of the various studies which examined supervisor support and its influence on the training transfer environment at the workplace:

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
1	Awoniyi, Griego & Morgan (2002)	293 staff from community organisations	Professional Development	Supervisor encouragement, resource sufficiency, control over work, workload, support for creativity, person-environment fit	Survey-self reports	Transfer	Person-environment fit, autonomy and workload related to transfer, supervisory support not related to transfer.
2	Axtell & Maitlis (1997)	75 non-managerial staff	Interpersonal skills	New skill levels, relevance of training, self-efficacy, motivation, managerial support, autonomy	Self report (immediate, 1 month and 1 year post-training)	Transfer	Environmental variables and motivation predict transfer
3	Bates, Holton, & Seyler (2000)	73 production workers	Computer based occupational safety and health modules	Learning, motivation, supervisor support, supervisor sanctions, peer support, change resistance, opportunity to use, content validity	Observation by supervisors	Performance	Content validity, supervisor sanctions, peer support and change resistance related to performance

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
4	Baumgartel & Jean-pierre (1972)	240 Indian managers	Management development program	Perceptions of transfer climate	Self reports made immediately	Effort to apply	Effort to apply positively related to positive training transfer climate
5	Baumgartel, Reynolds & Pathan (1984) study 1	260 American managers	Human relations	Perceptions of climate	Self reports (immediate)	Effort to apply	Effort to apply positively related to transfer climate
6	Baumgartel, Reynolds & Pathan (1984) study 2	246 Indian managers	Management development program	Perceptions of climate	Self reports (immediate)	Effort to apply	Effort to apply positively related to transfer climate
7	Brinkerhoff & Montesino (1995)	70 trainee (Fortune 200 company)	Meeting, negotiation, team & communication skills	Management support before and after training	Random assignment of attendees	Degree of transfer	Discussions with supervisor increased transfer

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
8	Clark, Dobbins & Ladd (1993)	245 trainees from different organisations	A range of different training activities	Training decision involvement, job utility, transfer climate, supervisor training transfer climate	Self report	Training motivation	Decision-maker credibility related to perceived job and career utility, supervisor training transfer climate related to perceived job utility, job utility predicted transfer motivation
9	Facteau, Dobbins, Russell, Ladd & Kudisch (1995)	967 managers and supervisors	Management training	Motivation, compliance incentives career planning, commitment, support	Self reports	Transfer	Pre-training motivation, subordinate, peer and supervisor support predicted transfer
10	Ford, Quinones, Sego & Sorra (1992)	180 Air force trainees and their supervisors	Equipment used to support aircraft	Type of base, supervisor attitudes, support, work flow, self-efficacy	Self reports	Opportunity to perform	Supervisor attitudes, workgroup support, self-efficacy and ability related to opportunity to perform
11	Gregoire, Propp & Poertner (1998)	210 child welfare employees	Alcohol and drug problems	Supervisor support	Self reports	Employee perception of training benefit	Supervisor support related to perceived impact of training transfer

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
12	Gumuseli & Ergin (2002)	39 (including sales representatives and their supervisors)	Sales training programs	Manager reinforcement, job attitude, productivity, effectiveness and satisfaction	Pre-test and post-test survey	Transfer of knowledge, skill and attitudes	Manager support and leadership positively related to changes in trainee behaviour.
13	Hand, Richards & Slocum (1973)	21 middle managers (steel plant)	Human relations	Perceptions of transfer climate	Self report (3 & 18 months post-training)	Transfer of attitudes and behaviour	No change after 3 months, innovative behaviour and organisations attitude to participation moderated transfer behaviour
14	Hanover & Cellar (1998)	99 middle managers (research & engineering)	Diversity issues	Work environment, social environment	Self report	Transfer, training effectiveness	Work environment not related to transfer
15	Holton, Bates & Ruona (2000)	1616 employees in various organisations	Various training activities	Learner readiness, motivation, personal capacity to transfer, supervisor support, transfer design, opportunity to use, and a range of other variables	Self report	Factor structure of transfer climate	All sixteen factors in the study make up transfer climate construct

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
16	Holton, Bates, Seyler & Carvalho (1997)	189 plant operator staff	Operator safety program	Supervisor support, transfer design, other related variables	Self report	Factor structure of transfer climate	Transfer climate consists of supervisor support, opportunity to use, peer support, supervisor sanctions, resistance, positive-negative personal outcomes
17	Huczynski & Lewis (1980)	48 Electronic managers	3-day network analysis program	Supervisor support & perceptions of transfer climate	Self report (4 months after training)	Attempt to transfer	Pre-training supervisor support and sponsorship of training positively related to attempt to transfer
18	Machin (2000)	16 Australian Defence force staff	Team training program	Learning, training effectiveness, transfer climate	Self report	Transfer	Action planning related to relapse prevention and goal setting. Transfer related to supervisor support
19	Machin & Fogarty (1998)	Police officers in Queensland (89 pre-training, 104 post-training; 49 follow-up)	Computerised information system	Transfer climate transfer intentions, transfer fulfilment, effect on job performance	Self report	Transfer	Transfer intentions related to post training activities. Positive transfer climate related to training transfer.

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
20	Olsen (1998)	105 managers and supervisors in the private and public sectors	Various	Best strategies for assisting transfer as identified by respondents	Mail survey	Transfer	Training culture, reinforcement, skills practice, training design, motivation, facilitate transfer
21	Quinones, Ford, Sego & Smith (1995)	118 Air force graduates and their supervisors	Equipment used to support aircraft	Learning, career motivation, supervisor attitudes and work group support	Self report	Opportunity to perform (4 months after training)	Learning and career motivation related to supervisor attitude which in turn predicted opportunity to perform
22	Rouiller & Goldstein (1993)	102 manager trainees and 919 of their supervisors and subordinates	Management of a fast food restaurant	Unit climate, learning, unit performance	Self report	Transfer ratings, performance 8-12 weeks after training	Learning and climate related to transfer. Transfer behaviour related to performance

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
23	Smith-Jentsch, Salas & Brannick (2001)	80 pilots from aeronautical university	Flight simulator	Team leader support, team climate perceptions, disposition toward training, locus of control	Survey and assessment by instructor	Post-training performance	Team leader support moderated performance, team climate mediated impact of support on performance, disposition toward training related to perception of climate
24	Tannenbaum & Dupree-Bruno (1994)	42 Human Resource Managers	Human Resources regulations	Organisation size, climate structure, external conditions, workforce characteristics	Survey	HR innovation	Climate related to HR innovation
25	Taylor (2000)	90 trainees, instructors and supervisors from various workplaces	Workplace literacy program	Transfer of learning	Interviews and content analysis	Transfer	Role-time partnership model helps to explain transfer. Organisational issues, program issues, support ad learner attitude affect transfer

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
26	Tracey, Tannenbaum & Kavanagh (1995)	505 managers of 55 supermarkets	Management skills	Learning, supervisor rating of pre and post training behaviour, transfer climate, continuous learning climate	Interviews	training effectiveness	Individual factors of abilities, attitudes and motivation, and work environment factors of job characteristics, social networks and organisational systems influence training effectiveness
27	Tziner, Haccoun & Kadish (1991)	81 Israeli Defence Force Trainees	Advanced training methods	Post-training relapse prevention, environmental support, motivation to transfer, mastery	Random assignment of trainees	Self report and supervisor rating of training & transfer strategy use – 10 weeks post-training	Relapse Prevention led to mastery and increased use, supervisors rated more skills use. Support and internal locus led to transfer
28	Warr, Allan & Birdi (1999)	163 motor vehicle technicians	Operation and interpretation of output from an electronic tool	Learning, motivation, confidence, use of learning strategies, learning confidence, transfer climate	Survey	Transfer	Learning related to motivation, confidence and use of learning strategies, transfer climate and learning confidence related to changes in job behaviour

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
29	Weiss, Huczyski & Lewis (1980)	48 students	3 day training course on the and use of critical path analysis	Attempts to transfer learning, actors inhibiting or facilitating transfer	Comparisons of two groups- participant interviews. Self report questionnaire (4 months post-training)	Transfer	Workload, change resistance and rates of change inhibit transfer, supervisor support, responsibility for own work and freedom to exchange information facilitate transfer

Opportunity to Use

Although most research has evaluated training success by measuring the amount of learning that has occurred by the end of a training program, Baldwin and Ford (1988) suggested the study of opportunity to apply trained skills on the job. Fendrich et al., (1988), in their review regarding skill maintenance, realized that the lack of opportunity to perform tasks results in low performance. Ford et al., (1992) argued that research on training transfer assumes that trainees have similar opportunities to transfer. They suggested that trainees receive different opportunities to transfer. Also, the various transfer opportunities may affect transfer outcomes. If organisations provide more practical experience for trainees to apply their newly acquired skills and knowledge, work performance is likely to be improved. Opportunity to transfer is then proposed to be related to transfer outcomes. Holton et al., (p 110, 1997), defined opportunity to use the newly acquired knowledge and skills as the, '*extent to which trainees are provided with or obtain resources and tasks that enable them to sue their new skills on the job*'.

Well-designed work processes can streamline the transfer of behaviours learned in training, especially behaviours that define roles and responsibilities, empower employees, and link with organisational values and culture. Well-designed work processes provide road maps for trainees to follow in transferring to their jobs the behaviours learned in training.

Having the proper equipment, tools, and materials in the work environment is crucial to the transfer of new skills and knowledge. Otherwise, it's unproductive for trainees to try to transfer behaviours learned in training to their jobs. In fact, it might even be

unproductive for them to attend the training in the first place. Removing such obstacles will in fact provide the environment to facilitate training transfer.

When learning doesn't transfer to the job, the two most likely reasons are: that the work environment doesn't support the learned behaviour and that trainees think the training was irrelevant. Organisations with environments that nurture training effectiveness circumvent the possibilities by providing safety nets for their employees. They provide their staff with and an environment in which they have plenty of opportunity to use the newly acquired skills and knowledge.

Table 3.4 on the next page highlights various studies which included opportunity to use either as a discrete, independent variable or as a group of variables with the research framework. Most of these studies investigated the relationship between opportunity to use and training transfer as the dependent variable. This study investigated the relationship between opportunity to use as the independent variable and training transfer as the dependent variable.

Table 3.4: Studies in which Opportunity to Use has been identified as an influence on training transfer at the workplace

The following table provides details of the various studies which examined Opportunity to Use and its influence on the training transfer environment at the workplace:

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
1	Bates, Holton, & Seyler (2000)	73 production workers	Computer based occupational safety and health modules	Learning, motivation, supervisor support, supervisor sanctions, peer support, change resistance, opportunity to use, content validity	Observation by supervisors	Performance	Content validity, supervisor sanctions, peer support and change resistance related to performance
2	Baumgartel & Jean-pierre (1972)	240 Indian managers	Management development program	Perceptions of transfer climate	Self reports made immediately	Effort to apply	Effort to apply positively related to positive training transfer climate
3	Baumgartel, Reynolds & Pathan (1984) study 1	260 American managers	Human relations	Perceptions of climate	Self reports (immediate)	Effort to apply	Effort to apply positively related to transfer climate

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
4	Baumgartel, Reynolds & Pathan (1984) study 2	246 Indian managers	Management development program	Perceptions of climate	Self reports (immediate)	Effort to apply	Effort to apply positively related to transfer climate
5	Cheng & Ho (1998)	155 MBA students	MBA degree	Training value, training reward, training motivation, opportunity to transfer	Self reports	Transfer	Training value significantly related to transfer outcomes
6	Clarke (2000)	14 social workers	Risk assessment training	Qualitative study	Semi-structured interviews	Factors affecting transfer	Factors affecting transfer include workload, time pressure, reinforcement and feedback
7	Hand, Richards & Slocum (1973)	21 middle managers (steel plant)	Human relations	Perceptions of transfer climate	Self report (3 & 18 months post-training)	Transfer of attitudes and behaviour	No change after 3 months, innovative behaviour and organisations attitude to participation moderated transfer behaviour

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
8	Hanover & Cellar (1998)	99 middle managers (research & engineering)	Diversity issues	Work environment, social environment	Self report	Transfer, training effectiveness	Work environment not related to transfer
9	Holton, Bates & Ruona (2000)	1616 employees in various organisations	Various training activities	Learner readiness, motivation, personal capacity to transfer, supervisor support, transfer design, opportunity to use, and a range of other variables	Self report	Factor structure of transfer climate	All sixteen factors in the study make up transfer climate construct
10	Huczynski & Lewis (1980)	48 Electronic managers	3-day network analysis program	Supervisor support & perceptions of transfer climate	Self report (4 months after training)	Attempt to transfer	Pre-training supervisor support and sponsorship of training positively related to attempt to transfer
11	Machin (2000)	16 Australian Defence force staff	Team training program	Learning, training effectiveness, transfer climate	Self report	Transfer	Action planning related to relapse prevention and goal setting. Transfer related to supervisor support

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
12	Machin & Fogarty (1998)	Police officers in Queensland (89 pre-training, 104 post-training; 49 follow-up)	Computerised information system	Transfer climate transfer intentions, transfer fulfilment, effect on job performance	Self report	Transfer	Transfer intentions related to post training activities. Positive transfer climate related to training transfer.
13	Olsen (1998)	105 managers and supervisors in the private and public sectors	Various	Best strategies for assisting transfer as identified by respondents	Mail survey	Transfer	Training culture, reinforcement, skills practice, training design, motivation, facilitate transfer
14	Rouiller & Goldstein (1993)	102 manager trainees and 919 of their supervisors and subordinates	Management of a fast food restaurant	Unit climate, learning, unit performance	Self report	Transfer ratings, performance 8-12 weeks after training	Learning and climate related to transfer. Transfer behaviour related to performance

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
15	Tannenbaum & Dupree-Bruno (1994)	42 Human Resource Managers	Human Resources regulations	Organisation size, climate structure, external conditions, workforce characteristics	Survey	HR innovation	Climate related to HR innovation
16	Taylor (2000)	90 trainees, instructors and supervisors from various workplaces	Workplace literacy program	Transfer of learning	Interviews and content analysis	Transfer	Role-time partnership model helps to explain transfer. Organisational issues, program issues, support ad learner attitude affect transfer
17	Tracey, Tannenbaum & Kavanagh (1995)	505 managers of 55 supermarkets	Management skills	Learning, supervisor rating of pre and post training behaviour, transfer climate, continuous learning climate	Interviews	training effectiveness	Individual factors of abilities, attitudes and motivation, and work environment factors of job characteristics, social networks and organisational systems influence training effectiveness

	Author(s)	Sample	Training Content	Variables	Research Design	Criteria	Results
18	Warr, Allan & Birdi (1999)	163 motor vehicle technicians	Operation and interpretation of output from an electronic tool	Learning, motivation, confidence, use of learning strategies, learning confidence, transfer climate	Survey	Transfer	Learning related to motivation, confidence and use of learning strategies, transfer climate and learning confidence related to changes in job behaviour
19	Weiss, Huczyski & Lewis (1980)	48 students	3 day training course on the and use of critical path analysis	Attempts to transfer learning, actors inhibiting or facilitating transfer	Comparisons of two groups-participant interviews. Self report questionnaire (4 months post-training)	Transfer	Workload, change resistance and rates of change inhibit transfer, supervisor support, responsibility for own work and freedom to exchange information facilitate transfer

Conclusion

While much research has been done in the area of training transfer, most of it has focussed on specific aspects of training transfer, and there is limited research in the area which incorporates a combination of factors which might influence training transfer. This study attempts to fill that 'gap' in the area of training transfer by including in the research model a combination of constructs which include, motivation to learn, and organisational commitment as trainee characteristics; and opportunity to practice, and supervisory support as conditions for transfer. The research model proposed at the end of this chapter and in the following chapter attempts to study the impact or influence of a combination of trainee characteristics and conditions for transfer on transfer outcomes.

CHAPTER 4 – RESEARCH METHODOLOGY

Introduction

This chapter presents the research methodology which was developed and used for this thesis. Firstly, the research environment is described and the rationale for conducting this study within this particular organisation is discussed. Secondly, the sample population being surveyed and who form the subjects of the data collection is described including their work settings, the technology they use, and the uniqueness of the environment within which they operate. Thirdly, the four research questions and their relationship to the variables and the study is discussed and detailed. Finally, the data collection approach is discussed, including the identification, validation and development of the survey instrument, and the analyses of the data are reported in this chapter.

Research Environment – Lotterywest

Lotterywest is the trading name for the Lotteries Commission of Western Australia, a wholly owned commercial business of the Western Australian Government. Being a public sector organisation, its operations are largely governed by the various Acts and Regulations of the Parliament of Western Australia. This being the case, the organisation at all times is required to demonstrate and prove compliance with these various Acts and Regulations of the Western Australian Government.

Lotterywest is the sole provider of gambling and gaming products in Western Australia with the exception of any sports betting such as horse-racing. The portfolio of products delivered by Lotterywest are grouped into four main categories; 1) Lotto products comprising, Saturday Lotto, Powerball Lotto and Oz Lotto – which are

games of chance; 2) Scratch and Win (SnW) products which are numbers games that provide instant gratification to the players, hence called Instants within the lottery industry; 3) Pools, which is a numbers prediction game based on the results of the soccer matches in the United Kingdom, and 4) Cash 3, a state-based game of numbers where the player picks 3 numbers and hopes to match them against a draw which is conducted daily. The revenue generated from these products amounts to more than half a billion dollars per year, of which in excess of thirty percent is returned to the community of Western Australia in the form of grants to non-profit organisations in Western Australia for the enhancing the quality of life in Western Australia.

In order to support its business and meet its legislative commitments of grant making (returning thirty percent of gross proceeds to the community) Lotterywest needs to continually review its operations and business processes to ensure it meets its compliance of legislative frameworks, the quality and integrity of service to its players, its role as a provider of community grants, and its participation as a reliable member of the Australian Lotto Bloc (which comprises all the states in the Federation of Australia). The organisation is able to meet its requirements by continually investing in adopting new technologies, providing state of the art training to its staff, and researching and developing new business process, products and services. One such input which is integral to its business operations is the use of technology and its dependence on technology to ensure a risk-free, trouble-free service delivery. Lotterywest delivers its lotto games and supports the players and distributor through what it calls its 'Gaming System'. The Gaming System in Lotterywest is a group of state-of-the-art technologies developed by an American

Corporation called Gtec. The Gtec System (as the Gaming System is usually referred to) is developed and supported by Gtec Corporation who annually come to Australia and train the staff of Lotterywest in the operations and support of the system in Australia. The costs to Lotterywest to provide this training to its staff who operate and support this system is hugely expensive. While this has been in place since 1979, Lotterywest has never in the past attempted to identify the value of the training Gtec provides to its staff, nor has it attempted to identify the relationship between the training and the risk-free operations of its Gaming System. In this context, the Senior Executives of Lotterywest, comprising the Chief Executive Officer and the Director of Information Systems approached the researcher to conduct some empirical study to identify the correlation between training, and the transfer of training to the workplace, specifically the operations of its gaming system.

The Sample –Lotterywest Information Services Staff

The population for this study comprised the staff of the Information Services Directorate of Lotterywest who are approximately 45 in total. Of these staff, 40 were identified as being the appropriate subjects for the study. This was based on two factors, their role within the Information Services Directorate – they had to be involved with the Gaming System, and secondly, they had to have undertaken the training delivered by Gtec in December 2004 which was aimed at the maintenance and upkeep of the Gaming System.

The Training Program

The training program which was delivered to the gaming staff of Lotterywest in December 2004 was titled the *PROSYS V7 System/Database Administration Training*.

This course describes the ProSys V7 Lottery System software down to the product executable level and critical system files. It provides students with an in-depth understanding of transaction flow and system processing in response to various types of input. Student will also be able to perform management and administration of the major subsystems including ProSys, VMS, UNIX, SYBASE and ProSys Databases. The knowledge and skills which the staff would acquire at the end of this training course included:

- Describe PRO:SYS Software Architecture
- Explain Data Flow & Synchronisation
- Apply ProSys Security
- Monitor & Control The ProSys Environment
- Monitor & Control VMS & UNIX OS
- Manage Servers
- Locate & Describe Significant Directories & Files
- Conduct Database Administration Tasks
- Evaluate System DayEnd & Nightly Processing
- Perform System & Database Operational Procedures

The duration of the course was five full days of instruction and several practical assignments which staff had to complete after-hours by working on a simulated gaming system.

Conceptual Framework

The research model used in this study has been presented as Figure 3.1. The model does attempt to investigate the independent variables suggested; trainee characteristics (motivation, and organisational commitment), conditions for transfer (supervisor support, and opportunity to use), and training transfer as the dependent variable. Within trainee characteristics, the model demonstrates the relationship between motivation as a trainee characteristic and training transfer as an outcome, and organisational commitment as a trainee characteristic and positive training transfer as an outcome. Similarly, the model identifies the relationship between supervisor support as a condition for transfer and positive training transfer as an outcome, and opportunity to use as condition for transfer and positive training transfer as an outcome.

Dependent and Independent Variables

Consistent with previous, similar studies (Perryer, 2004; Machin, 1999; Machin & Fogarty, 2003) this study proposes investigating the relationship between motivation to work and organisational commitment as independent variables within the context of trainee characteristics and training transfer as the dependent variable. It is purported that these independent variables will positively influence training transfer as the dependent variable as described in the research questions. In addition to the trainee characteristics this study proposed the investigation of a possible relationship

between supervisor support, and opportunity to use as independent variables within the context of conditions to transfer, and training transfer as the dependent variable. These relationships are described in the research model proposed in this study.

Dependent Variable

Training Transfer Climate. The transfer climate measure developed by Holton and Bates (1996) was used for this study. The 16- item scale is designed to assess each person's perception of the support for training transfer in his or her immediate work environment. It consists of 3 sub-scales relating to performance at the work place, supervisor recognition, and resources required at the workplace. Holton and Bates (1996) reported Cronbach's alpha reliability of .81 for this scale. In line with other measures of this survey, responses to items were based on a five-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree). Original scale items were reworded where necessary to reflect the specific training intervention relevant to this study. The original sense of items was retained in all cases which was substantiated in the pilot test by selected staff to test reliability of items (97%).

Independent Variables

Motivation to work. This is a thirteen item five-point Likert-type summated ratings scale measuring an employee's enjoyment of his/her work and motivation to engage in it rather than other activities. It is referred to by Duncan (1969) as Commitment to Work, but is called Achievement Motivation by Bagozzi (1980) and Hart et al., (1989). The items composing the scale were first used by Westoff et al., (1961). A further analysis made by Bagozzi (1980) was based upon 122 completed questionnaires from industrial sales people assigned to exclusive geographic

territories. Reliability scores ranging from .60 to .74 were reported for the scale by Bagozzi (1980) and Hart et al., (1989). A typical item in this scale is, 'I would much rather relax around the house all day than go to work' (reverse scored item).

Organisational Commitment. This variable was measured using a 15-item (alpha .91) scale developed by Mowday, Steers and Porter (1979). The item responses were measured on a Likert type scale wherein 1 represented strongly disagree to 5 which represented strongly agree. While there are a number of other alternative measures, this scale is the most frequently used instrument for the measurement of organisational commitment (Varona, 1996) and has been used in numerous recent studies as outlined in table 3.2. One of the items in this scale is, 'I am willing to put in a great deal of effort beyond that normally expected in order to help this organisation to be successful'.

Supervisor Support. Although organisational climate tends to be perceived through the attitudes and actions of the learner's supervisors and co-workers (Broad & Newstrom, 1992) supervisors exert more influence than co-workers on the learner's decision to implement the training. Supervisors are the single most important influence on the transfer process and where they encourage and model the desired behaviours, trainees are more likely to apply the new skills; where they do not, their attitude becomes an inhibiting factor (Huczynski & Lewis, 1980; Richey, 1992). Supervisor support may be defined as, 'The extent to which supervisors-managers, support and reinforce the use of training on the job' (Holton & Bates, p.13, 1996). This variable was measured using a 25-item Likert type measure where 1 represented strongly disagree, and 5 represented strongly agree, and which was previously

developed and used by Holton and Bates (1996) with a Cronbach's alpha of .91. A typical item in this scale included, 'Supervisors give employees the chance to try out their training on the job immediately'.

Opportunity to Use. Holton and Bates (1996, p.110) defined opportunity to use as, 'The extent to which trainees are provided with or obtain resources and tasks on the job enabling them to use training on the job'. This variable was measured using a 17-item Likert (alpha .70) scale measure ranging from 1 (strongly disagree) to 5 (strongly agree). One of the items in this scale included, 'There is never enough time to do the job the way we are taught in training'.

The Research Questions

The research questions proposed for this study are:

Trainee characteristic - Motivation

- ***Research Question 1: To what extent does Motivation to Work as a trainee characteristic influence training transfer at the workplace?***

Trainee characteristic – Organisational Commitment

- ***Research Question 2: To what extent does Organisational Commitment as a trainee characteristic influence training transfer at the workplace?***

Conditions for Transfer – Supervisor Support

- ***Research Question 3: To what extent does Supervisor Support as a Condition for Transfer influence training transfer at the workplace?***

Conditions for Transfer – Opportunity to Use

- **Research Question 4:** *To what extent does Opportunity to Use as a Condition for Transfer influence training transfer at the workplace?*

The Survey Instrument

The survey instrument comprised a 90-item questionnaire scored on a Likert Scale of 1-5 (Strongly Disagree to Strongly Agree) as suggested by Jaccard and Choi (1996) and can be found in Appendix I. The questions were grouped into four variables, motivation which had 13 items, organisational commitment which had 15 items, supervisor support which had 25 items, opportunity to use which had 17 items, and the dependent variable training transfer had 16 items with the remaining items relating to demographic information of the sample population. The questions within each item were chosen to closely match (as far as was possible) the research questions. The scales within the survey instruments were used by previous researchers in similar studies (Machin, 1999; Machin & Fogarty, 2003; Perryer, 2004) and included items developed and validated by researchers in previous studies including Bagozzi (1980), Duncan (1969), and Hart et al., (1989) for motivation; Mowday, Porter and Steers (1979) for organisational commitment; and Holton and Bates (1996) for supervisor support, and opportunity to use, and Holton and Bates (1996) for the dependent variable - training transfer which had 16 items. The final part of the questionnaire included the demographic details of the respondents. The questionnaire had a total of 90 items covering the four independent variables and training transfer as the one dependent variable.

Content Validity

To ensure understanding and clarity of the items, a structured focus group was conducted with selected staff and supervisors where they were asked to carefully identify any items or words which in their opinion were ambiguous or difficult to understand. Eight staff within the information services directorate of Lotterywest examined the content validity of the 90-item Training Transfer Climate Survey instrument. They were given the definition of each of the four variables and asked to match items with their corresponding definition. The results were as follows: (a) 85% of the motivational items were sorted as motivation, (b) 89% of the organisational commitment items were sorted as organisational commitment, (c) 92% of the supervisory support items were sorted as supervisor support, (d) 89% of the opportunity to use items were sorted as opportunity to use, and (e) 97% of the training transfer items were sorted as training transfer. These results provided preliminary evidence for the content validity of the Training Transfer Climate Survey instrument (Hinkin, 1998). The feedback received from this group resulted in some minor changes to the wording of the questions while ensuring the intent and meaning were not altered.

Data Collection

In order to facilitate and ensure understanding by all, prior to the administration of the instrument, a staff information session was facilitated by the researcher. During this time, the researcher explained the purpose of the survey, the benefits to the individuals and to the organisation, the permissions and authority granted to the researcher by the Chief Executive Officer of the organisation, the process by which the instrument could be completed, and when and how the completed instrument

could be delivered back to the researcher, and information about the confidentiality of their responses. The staff were asked to focus on the recently completed Gtec training program in December 2003 when responding to the questions in the questionnaire. Forty questionnaires were distributed to the selected staff and a total of thirty-two valid responses were returned and analysed.

Sample Size

One of the first decisions to be made by the researcher involves determining whether the sample size is adequate for factor analysis. There are numerous rules which are proposed in the literature, some of which suggest the required sample size is a function of the number of variables in a particular measure. Hair et al., (1998) provide a typical example, suggesting that between five and ten observations per variable are necessary. Cantell (1978) maintains that the required sample size should be calculated as a function of the number of expected factors, rather than the number of study variables. Other rules simply suggest a sample size of 100 to 200 (Hair et al., 1998).

Measures

Each measure used in this study is discussed in turn, including specific sample items and scale reliabilities. All scale reliabilities were in excess of .70 as recommended by Hinkin (1998). After reversing scores for negatively worded items, a single overall score was computed for each variable by taking the mean of all the items in the scale. A more detailed analysis of each scale can be found in the next chapter. All analyses were performed using the Statistical Package for the Social Sciences

(SPSS) software. The analysis of the data and data sets proceeded in several stages for each of the variables.

Data Screening

Initially, all variables were examined for accuracy of data entry and missing values. Descriptive statistics comprising of means, standard deviations, correlations, and scale reliabilities were calculated for all variables including the dependent variable – training transfer.

Factor Analysis

Factor Analysis has been extensively used in social science and business research for classifying data, mapping construct space, assessing the dimensionality of measurement scales, and examining patterns of interrelationships in data for more than eighty years (Conway & Huffcutt, 2001; Ford, MacCallum & Tait, 1986; Steenberg, 2000). Factor analysis can be used as an exploratory technique, where the objective is to identify structure among a set of variables. Alternatively, where the researcher has preconceived ideas about the structure of the data, based on theoretical support or previous research, factor analysis can be used as a confirmatory technique (Hair et al., 1998). There are a number of issues that need to be addressed before undertaking factor analysis, including sample size required to approximate the population pattern, the choice of factor model, the extraction procedure, and the factor rotation method. Subsequently, decisions need to be made regarding the number of factors to be retained, and the interpretation of those factors (Fabrigar et al., 1999; Ford, MacCallum & Tait, 1986).

A synthesis of the literature suggest that while there is no single preferred approach to sample size, there needs to be adequate measures taken to ensure that the sample size does produce the results using a factorial analysis procedure. Following on from Hair et al., (1998), who suggest a minimum of 5 cases per variable, the sample size for this study is 40 (with 32 completed cases) and the variables for this study are five. This meets the suggested requirements according to Hair et al., (1998). Consequently, the factor size of 32 completed cases is considered satisfactory.

Factor Model

The second decision to be made involves choosing the factor model to be used. This involves the choice between common factor analysis (CFA) and principal components analysis (CPA). Although CPA is not strictly a type of factor analysis, it has been widely used by researchers in the social sciences to determine the structure of a set of data, and is generally treated as a subset of factor analysis (Perryer, 2004). Despite the theoretical support for CFA in exploratory factor analysis, Gorsuch (1983) reports that there is widespread support and use of PCA among researchers. He suggests that one of the reasons is that PCA scores are easier to compute, although this should no longer be an issue, given the widespread use of computers and statistical packages. In addition to this Hair et al., (1998) suggest the use of PCA where the sample size is small and the variables limited to less than six. This fits in with the current study where the cases are 32 and the variables five. Consequently, for this study it was decided to use principal component analyses since the objective was to reduce the information in a set of variables to a smaller set, while maintaining the maximum amount of information.

Extraction Procedure

The next decision to be made involves the choice of extraction procedure for obtaining the initial factor solution. Probably the greatest influence on the researcher's choice of extraction procedure is the software package used. Fabrigar et al., (1999) suggests that the most widely used procedures are maximum likelihood (ML), principal factors, and iterative principal factors. Each technique has its advantages and disadvantages, although ML extraction has the significant advantage of allowing computation of assorted indices of goodness-of-fit, and testing of significance loading and correlations between factors (Perryer, 2004). For this reason and the similarities between this study and Perryer (2004), maximum likelihood (ML) extraction was used in this study.

Rotation

The last decision to be made relates to the choice of rotation methods. Rotation is used to improve the meaningfulness, reliability, interpretability and reproducibility of factors (Cooper & Schindler 2001; Fabrigar et al., 1999). While there are numerous rotation techniques available, they all fall into two categories; orthogonal and oblique.

Orthogonal rotation is most commonly used in research (Coakes & Steed, 2001).

Some researchers used orthogonal rotation even though they knew the factors to be correlated. Orthogonal rotation is a subset of oblique rotation, hence there appears to be no reason to use orthogonal rotation if oblique rotation is available in the statistical package being used.

There is no single oblique rotation method that is clearly dominant in psychological research (Fabrigar et al., 1999), although several are commonly used and generally produce satisfactory results. These include direct oblimin, promax, varimax, and Kaiser normalisation. While there is no preferred method of rotation required, this choice is usually based on the type of software package and the options it provides. The combination of maximum likelihood and varimax rotation with Kaiser normalisation has been used in previous studies, hence the decision to use varimax rotation with Kaiser normalisation method was preferred for this study.

Conclusion

The model proposed in this study is supported by the literature and recent studies conducted in the general area of training transfer. However, none of the previous research conducted included a combination of variables relating to motivation to learn, and organisational commitment (as trainee characteristics), and opportunity to use, and supervisory support (as conditions for transfer) in the work setting.

Furthermore, none of the previous research conducted related to the environment proposed in this study, which relates to a small public sector organisation in Western Australia, and operates commercially in the gaming and gambling industry.

This chapter concluded with a description of the instrument used, the data collection methods, and the types of analyses used. It discussed some of the issues and problems relating to the collection of data, sample size, a description on the type of factor analysis used, the method by which the data are rotated and the extraction methods used in analysing the data.

CHAPTER 5 – PRESENTATION AND ANALYSIS OF RESULTS

Introduction

This chapter presents the results of the study, including the data analyses.

Descriptive statistics for the sample are presented and discussed and compared to population parameters. Results of the data analyses including the responses to the research questions are included in this chapter.

Demographic Information

Demographic data relating to the gender, age, tenure, and educational levels of the sample population were collected as part of the study and compared to data available from the organisation in order to determine where possible, comparability of the sample to the population. Of the 32 respondents, 10 (31%) were female, and 22 (69%) were male. This is disproportionate to the remaining population in the organisation which is 60% female. However, this is not disproportionate to the Information Technology industry where males represent in excess of 75% of the population (Australian Bureau of Statistics, 2001). The age of the respondents ranged from the early twenties to the early fifties, with the largest mean for age in the '45-49' age group (7 respondents). The age groups of 25-29, 30-34, 35-39, and 40-44 comprised a total of 22 respondents, which accounts for almost 69% of the population. There were only 3 respondents (9.4%) of the sample population who were in the '50-54' age group. Ninety percent of the sample population are under 50 years of age. Fifteen respondents, almost half (46.9%) of the sample studied completed high school, Eight others (25%) indicated that had completed either a

diploma or certificate level course, another eight respondents (25%) indicated they had completed a degree level course and one respondent (3%) who had completed a post-graduate level degree course. Length of service in the public sector of Western Australia ranged from under 5 years to 25 years. Ten respondents (31%) indicated they were in the public sector service for under 5 years while eleven (34%) of the respondents indicated their length of service between 5-10 years, which together accounted for over 65% of the sample population. Eight respondents (25%) indicated their length of service ranged from 16-25 years. Based on discussions with the Human Resource Manager and a survey of organisational records, the overall demographics of the sample appear to be an accurate reflection of the overall population of this agency, the one exception relating to the gender of staff within this agency and this particular department, The other departments of the organisation have a female population in excess of 60% in each department, which contrasts with the female population of this department which accounted for approximately 31% of the department population. However, as noted previously, this is consistent with the overall Information Technology industry population where males account for almost 75% of the population (Australian Bureau of Statistics, 2001).

Descriptive Statistics and Reliabilities

The means, standard deviation and Cronbach’s Alpha reliability estimates were calculated for each independent variable as shown in table 5.1.

Table 5.1: Means, Standard Deviations and reliability estimates for independent variables

	Variables	Alpha	Mean	Std Dev
Motivation to Work	13	.7600	3.00	1.07
Organisation Commitment	15	.8433	4.00	0.80
Supervisor Support	25	.7639	4.00	0.81
Opportunity to Use	17	.7266	4.00	0.87

Mean scores for the independent variables ranged from 3.00 (Motivation to Work) to 4.00 for Organisation Commitment, Supervisor Support, and Opportunity to Use.

The mean score for Motivation to Work (3.00 out of a possible 5.00) indicates some negative views of the respondents in relation to their motivation to be working within the current environment. This coupled with a high standard deviation of 1.07 indicates some presence of strong negativity in relation to this variable and a greater dispersion of respondents views in relation to this variable. The reason for such a score (60% out of a possible 100%) needs to be explored. The mean response for organisational commitment was a high 4.00 out of a possible 5 with a low standard deviation of .80 indicating general agreement about the overall satisfaction of respondents being committed to the organisation within which they are currently employed. For the variable Supervisor Support the mean was 4.00 out of a possible 5 with a low standard deviation of 0.81. Again based on these scores it appears that the respondents are generally satisfied with the support they get from their

supervisors at work. The last independent variable Opportunity to Use had a mean score of 4.0 out of high of 5.00 with a standard deviation of 0.87. While the standard deviation was marginally higher than Organisation Commitment and Opportunity to Use it was lower than Motivation to Work. This appears to indicate that the respondents are generally satisfied with the opportunities that are made available to them to practice the new skills they might have acquired at the training program. The items in this variable relate to the availability of resources such as time, equipment, incentives, work value and performance measures. It appears that the respondents are generally satisfied with the resources provided to them by the organisation to practice and use the new skills. Based on these scores it appears that with the exception of Motivation to Work all the other independent variables have a positive relationship with the respondents and their application of training at the workplace.

Reliability Analysis – Independent Variables

Reliability scores were computed using SPSS for all individual items within the four independent variables; Motivation to Work, Organisational Commitment, Supervisor Support, and Opportunity to Use. These scores are found in Appendix II.

Cronbach's alpha of 0.8457 was recorded for all 70 items in these variables which satisfies Hinkin (1998), and Hair et al., (1998) who suggest a minimum alpha score of 0.70 to 0.80. The individual mean scores and standard deviations indicate the relative closeness or distance from the mid level score of 3.00. As is evident from some of the mean scores which are below the mid point of 3.00, there appears to be some negative sentiment in relation to those particular items within each of the

variables. These are extracted into relevant categories using factor analysis and are described later in this chapter.

Motivation to Work: Table 5.2 contains the reliability (Alpha) scores for the first independent variable – Motivation to Work. The presence of low mean scores with high standard deviations indicates a reasonable negative response from the respondents in relation to their motivation to work. What is not clear is whether this apparent reluctance to work is related only to this particular agency or whether this a general tendency of this group towards work in general? This is something which needs further explanation and possible further research and will be discussed in detail in the next chapter.

Table 5.2: Reliability Analysis (Alpha) for Motivation to Work

RELIABILITY ANALYSIS - SCALE (ALPHA)			
	Mean	Std Dev	Cases
1. MOTIV1	3.1875	1.0298	32.0
2. MOTIV2	2.9688	.8975	32.0
3. MOTIV3	2.7813	1.3133	32.0
4. MOTIV4	3.1250	.9755	32.0
5. MOTIV5	3.5625	1.1341	32.0
6. MOTIV6	3.3125	.9980	32.0
7. MOTIV7 *	2.5625	1.0453	32.0
8. MOTIV8 *	2.9375	1.2165	32.0
9. MOTIV9	3.6250	1.0080	32.0
10. MOTIV10 *	2.8438	.7666	32.0
11. MOTIV11	3.1875	.9651	32.0
12. MOTIV12 *	2.9375	1.1053	32.0
13. MOTIV13 *	2.6250	.9755	32.0
Reliability Coefficients 13 items			
Alpha = .7600			
* indicates items which were reverse scored.			

The table 5.2 contains the mean, standard deviation and alpha scores of all 13 items within the independent variable Motivation to Work. The overall average mean for this item is less than 3.00 (Neither Agree or Disagree) which seemed to indicate some degree to difficulty in concluding whether this group is motivated to work or not.

Organisational Commitment: The mean score for items within this variable, Organisational Commitment which can be found in table 5.3 below, ranged from 4.2 for item 6 ('I am proud to tell others that I am part of this organisation') to a mean score of 1.5 for item 15 ('Deciding to work for this organisation was a definite mistake on my part'). Item 15 was a reverse score item, hence when computing the scores it relates to a positive response, indicating that respondents were proud to be working for this organisation. The relatively low standard deviations in the items in this variable indicate the absence of any significant dispersion of agreement and a tendency toward a generally accepted positive position of organisational commitment from most of the respondents. The alpha score of 0.8433 indicates a good fit of these items within this variable as indicated in table 5.3.

Table 5.3: Reliability Analysis (Alpha) for Organisational Commitment

RELIABILITY ANALYSIS - SCALE (ALPHA)				
		Mean	Std Dev	Cases
1.	ORGC0M1	3.8750	.7071	32.0
2.	ORGC0M2	4.1875	.5923	32.0
3.	ORGC0M3 *	2.0313	1.1212	32.0
4.	ORGC0M4	2.8125	.9311	32.0
5.	ORGC0M5	3.7188	.4568	32.0
6.	ORGC0M6	4.2188	.6082	32.0
7.	ORGC0M7 *	2.7500	.8799	32.0
8.	ORGC0M8	3.4688	.7177	32.0
9.	ORGC0M9 *	2.2813	.9914	32.0
10.	ORGC0M10	4.1250	.6091	32.0
11.	ORGC0M11 *	2.0938	.8561	32.0
12.	ORGC0M12 *	2.4688	.8026	32.0
13.	ORGC0M13	4.1875	.7803	32.0
14.	ORGC0M14	3.5938	.8747	32.0
15.	ORGC0M15 *	1.5938	.6652	32.0
Reliability Coefficients 15 items				
Alpha = .8433				
* indicates items which were reverse scored				

Supervisor Support: Table 5.4 contains the mean, standard deviation and alpha scores for all 25 items in this variable. Similar to the variable for Organisational Commitment, the items within this variable also appears to have relative high means with low standard deviations and an alpha of 0.7639 indicating a good fit of items within this variable. Means for all items were 3.00 or above, with the exception of items 6, 16 and 17. Two of these items related to the manner in which employees were treated by their supervisors. The details for these scores can be found in table 5.4.

Table 5.4: Reliability Analysis (Alpha) for Supervisor Support

RELIABILITY ANALYSIS - SCALE (ALPHA)				
		Mean	Std Dev	Cases
1.	SVRSUP1	3.7188	.8126	32.0
2.	SVRSUP2 *	4.0625	.4353	32.0
3.	SVRSUP3 *	4.0625	.9483	32.0
4.	SVRSUP4	3.6563	.6016	32.0
5.	SVRSUP5	3.6250	.6599	32.0
6.	SVRSUP6	2.6563	.7874	32.0
7.	SVRSUP7 *	3.5000	1.1072	32.0
8.	SVRSUP8	3.7813	.4908	32.0
9.	SVRSUP9	3.0938	.8175	32.0
10.	SVRSUP10 *	3.1563	.8466	32.0
11.	SVRSUP11 *	3.4688	.7177	32.0
12.	SVRSUP12	3.4375	.7156	32.0
13.	SVRSUP13 *	4.1250	.4212	32.0
14.	SVRSUP14 *	3.8438	.4479	32.0
15.	SVRSUP15	3.6250	.8328	32.0
16.	SVRSUP16	2.8125	.6445	32.0
17.	SVRSUP17	2.8125	.6445	32.0
18.	SVRSUP18	3.4688	.5671	32.0
19.	SVRSUP19	3.4375	.7594	32.0
20.	SVRSUP20	3.2813	.6832	32.0
21.	SVRSUP21	3.0313	.7399	32.0
22.	SVRSUP22	3.7188	.6832	32.0
23.	SVRSUP23	3.5000	.7620	32.0
24.	SVRSUP24	3.1875	.6927	32.0
25.	SVRSUP25 *	3.8125	.7378	32.0
Reliability Coefficients 25 items				
Alpha = .7639				
* indicates items which were reverse scored				

Opportunity to Use: Judging from the scores for individual items within this variable as described in table 5.5, it appears that the respondents are satisfied with the support they get from the organisation in relation to the opportunities to use the skills gained during training. With the exception of items 7, 14 and 15 all other items within the variable had a mean score in excess of 3.00, indicating a response closer to scale 'Agree' in the questionnaire. Out of these three items, items 7 and 15 were reversed scored which indicates that their response is closer to 4.00 on the Likert Scale, which is to Agree to the statement of that particular item. In addition to this, an alpha score of 0.7266 indicates that there appears to be a reasonable fit of items within this variable.

Table 5.5: Reliability Analysis (Alpha) for Opportunity to Use

RELIABILITY ANALYSIS - SCALE (ALPHA)			
	Mean	Std Dev	Cases
1. OPPUSE1 *	3.4688	.7177	32.0
2. OPPUSE2 *	3.3125	.9311	32.0
3. OPPUSE3	3.4688	.9153	32.0
4. OPPUSE4	3.9375	.5644	32.0
5. OPPUSE5	3.7813	.7064	32.0
6. OPPUSE6	3.7188	.6832	32.0
7. OPPUSE7 *	2.5938	.8747	32.0
8. OPPUSE8	3.8438	.5149	32.0
9. OPPUSE9	4.1875	.3966	32.0
10. OPPUSE10	3.4375	.7594	32.0
11. OPPUSE11 *	3.5625	.7594	32.0
12. OPPUSE12 *	3.5313	.8418	32.0
13. OPPUSE13	3.4063	.7560	32.0
14. OPPUSE14	2.2188	.4908	32.0
15. OPPUSE15 *	2.8750	1.0395	32.0
16. OPPUSE16	3.8125	.4709	32.0
17. OPPUSE17	3.6250	.7513	32.0
Reliability Coefficients 17 items			
Alpha = .7266			
* indicates items which were reverse scored			

Factor Analysis – Independent Variables

Factor analysis was conducted for all four variables and consisted of computing scores for, descriptive statistics, correlation matrices, communalities (using Principal Component Analysis), total variances explained, scree plot, component matrices, reproduced correlations, rotated component matrices, and component transformation matrices.

Motivation to Work: Factor analysis extracted 5 factors in the independent variable Motivation to Work as outlined in table 5.6. Only Items that loaded above 0.50 (Perryer, 2004) were considered for grouping in categories. Items 11, 12, and 13 loaded together and were grouped together as ‘work pressure’. Items 1, 6, and 8 were grouped together as ‘work satisfaction’. Items 7, 9, and 10 were grouped together and labelled as ‘work stress’. Item 4 was on its own and labelled as ‘work pleasure’. Finally item 2 also on its own, was labelled as ‘work interest’. Further analyses suggested that all the five factors could be combined to form two distinct subscales to form two revised independent variables called Work Pressure, and Work Satisfaction, which are discussed later in this chapter.

Table 5.6 Rotated Component Matrix^a for Motivation to Work

Rotated Component Matrix					
	Component				
MOTIV1	-.035	.761	-.229	-.002	.186
MOTIV2	-.130	.015	.148	-.143	.894
MOTIV3	-.018	.549	.004	.529	.469
MOTIV4	.054	-.058	.057	.858	-.140
MOTIV5	.114	.586	.069	.481	.498
MOTIV6	-.180	.611	.498	.235	-.114
MOTIV7	.239	.085	.774	.291	.079
MOTIV8	.114	.845	.244	-.131	-.114
MOTIV9	.558	.166	.576	.375	.124
MOTIV10	-.036	-.047	.774	-.224	.101
MOTIV11	.845	.153	-.001	.320	.054
MOTIV12	.911	.088	.040	-.122	-.215
MOTIV13	.898	-.286	.123	-.066	-.018

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 a. Rotation converged in 10 iterations.

Examination of the scree plot in figure 5.1, suggests that there are 5 factors generated which is consistent with table 5.6 – Rotated Component Matrix for Motivation to Work. While factors one and two are distinct from the others and clearly identified on their own, factors three, four and five appear to be more closely related to each other with minimal differences. This appears to have accounted for the analysis suggesting the evidence of two distinct sub scales within this variable which are discussed in detail later in this chapter.

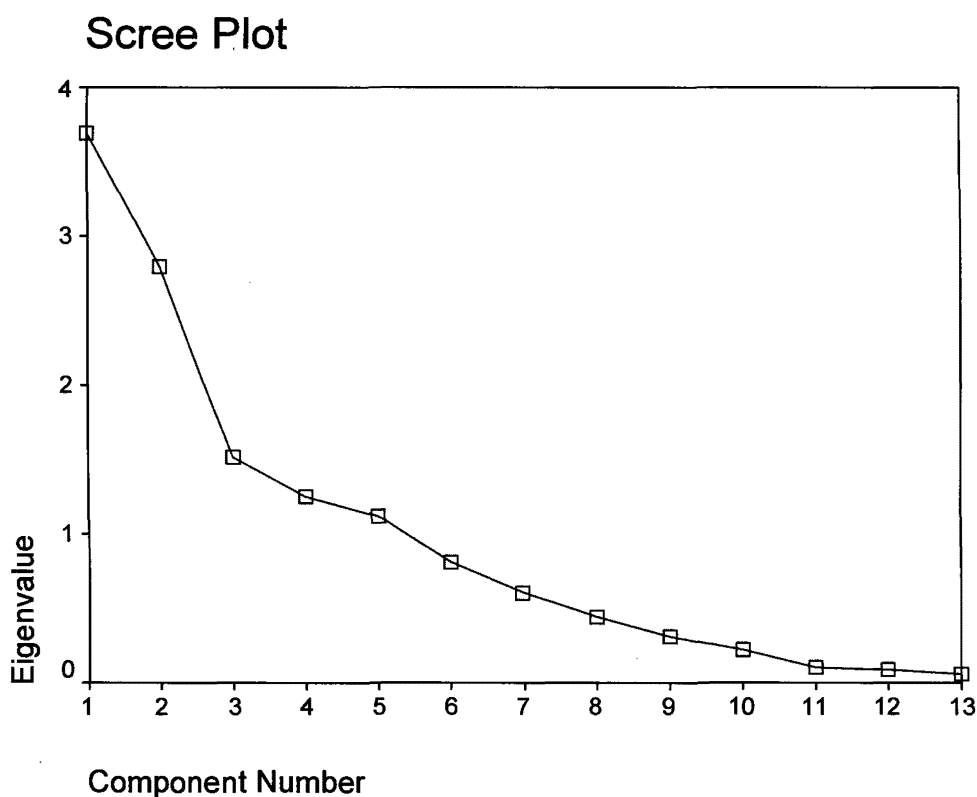


Figure 5.1 Scree plot for Motivation to Work

Organisational Commitment: Rotated Component Matrix^a computed for organisational commitment extracted 4 factors. Only items that loaded above 0.50 were considered for factor grouping and included the following; items 2, 6, 7, 11, 13, and 15 which were categorised and called ‘organisation loyalty’. Items 1, 4, 5, 8, 9 and 14 were grouped together and called ‘organisation values’. Items 3, 10 and 12 were on their own or did not fit into the 2 other groups and were hence discarded. Items which loaded below 0.50 were discarded and not included in the revised model. This is consistent with previous similar research (Perryer, 2004, Minchin & Fogarty, 2003) and as suggested by Hair et al., (1998). The analysis formed the basis for revising this variable to include two independent variables, which were subsequently renamed, Organisation Loyalty, and Organisation Value. This is discussed in detail later in this chapter.

Table 5.7 – Rotated Component Matrix for Organisational Commitment

Rotated Component Matrix ^a				
	Component			
	1	2	3	4
ORGCOM1	.150	.120	.685	.183
ORGCOM2	.744	.312	.244	.425
ORGCOM3	-.059	-.071	-.758	.515
ORGCOM4	.141	.752	-.094	.386
ORGCOM5	.545	.578	.099	-.201
ORGCOM6	.814	.271	.160	.173
ORGCOM7	-.604	-.487	.192	.303
ORGCOM8	.091	.862	.320	-.075
ORGCOM9	-.429	-.679	-.280	.352
ORGCOM10	.290	.288	.536	-.144
ORGCOM11	-.631	-.556	-.020	.369
ORGCOM12	-.016	-.162	-.082	.883
ORGCOM13	.866	.040	.285	-.091
ORGCOM14	.223	.752	.335	-.269
ORGCOM15	-.704	-.076	-.572	.134

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 11 iterations.

Figure 5.2 contains a scree plot for organizational commitment and details the 4 factors within the variable. According to the scree plot, the first factor was clearly distinguishable while the remaining factors were more closely related. Further analyses conducted on this factor which included discarding low-scoring items, and factors which consisted of only one item and combining the related factors, identified two distinct subscales within this variable. As described in the previous page, these two subscales were used to form a revised independent variable and were called, Organisation Loyalty, and Organisation Value. This is discussed later in this chapter.

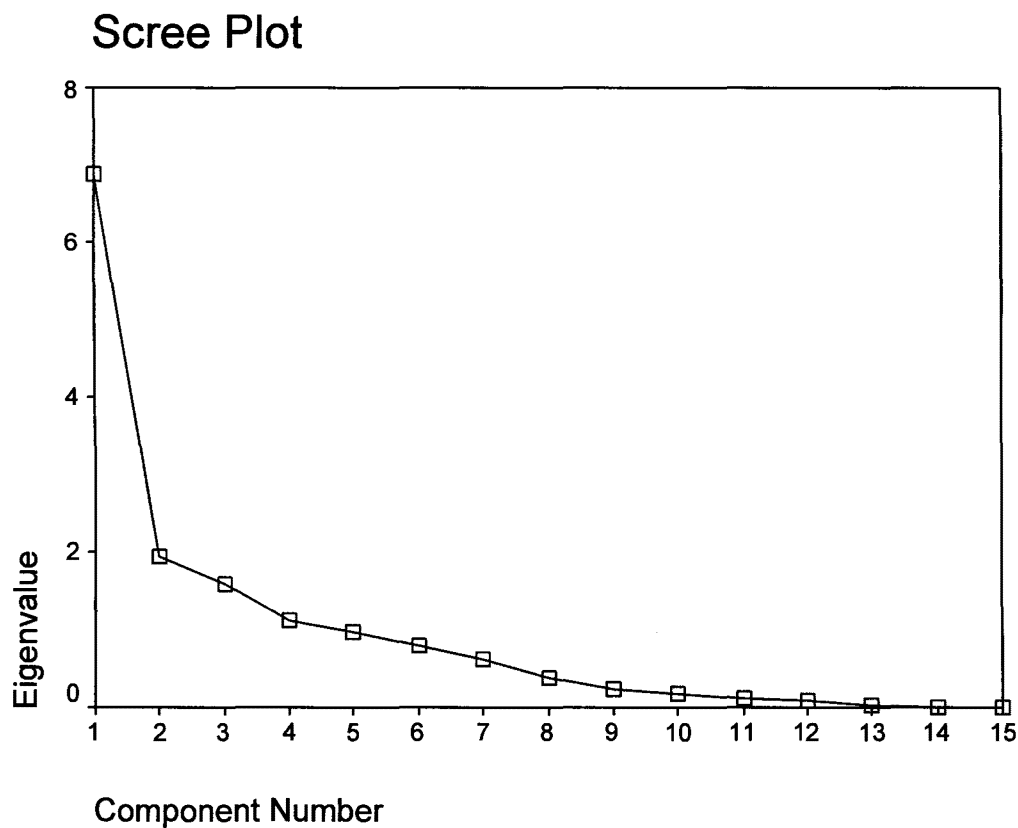


Figure 5.2: Scree Plot for Organisational Commitment

Supervisor Support: There were 9 factors originally extracted for this variable, which were revised and grouped into 4 factors. Firstly all items which loaded below 0.50 were deleted from further consideration. Secondly, some factor groupings had very low scores and were subsequently discarded in the revised model. The main groupings which were combined into subscales in this variable were, items 5, 9, 10, and 12 which were combined and labelled ‘goals’. Items 2, 4, 6, 8, and 19 were combined and categorised as ‘training support’. Items 17 and 21 were categorised as ‘supervisor knowledge’. Items 1 and 13 were combined and labelled as ‘attention to employees’. The rest of the scores were too low and hence were not considered in this factor grouping.

Table 5.8: Rotated Component Matrix for Supervisor Support

Rotated Component Matrix

	Component								
	1	2	3	4	5	6	7	8	9
SVRSUP1	.195	.238	-.022	-.031	.340	.585	.260	.226	.101
SVRSUP2	.292	.705	.102	-.116	-.473	-.021	-.101	.258	-.073
SVRSUP3	.565	.365	-.214	.188	-.428	.225	.090	-.383	.025
SVRSUP4	-.196	.703	.209	-.050	-.178	.366	-.004	.299	-.039
SVRSUP5	.766	.166	-.322	-.252	-.117	.098	-.130	-.271	-.057
SVRSUP6	.363	-.710	-.069	-.447	-.033	-.020	.038	.170	-.174
SVRSUP7	.388	-.568	-.060	.387	-.069	.184	-.373	.187	.083
SVRSUP8	.055	.187	.460	-.160	-.347	.093	.515	.241	.236
SVRSUP9	.191	.261	.105	.332	.570	.259	-.325	.058	.429
SVRSUP10	.708	.056	-.075	-.554	.096	-.135	-.269	.180	-.140
SVRSUP11	.299	-.091	-.130	.773	-.121	.252	.164	-.063	-.053
SVRSUP12	.418	.332	-.014	.185	.534	-.052	.218	.034	-.327
SVRSUP13	.360	.078	.302	.475	-.329	-.536	-.043	.004	-.096
SVRSUP14	.394	-.005	-.530	-.202	.033	-.380	.113	.262	.269
SVRSUP15	.474	.041	-.579	-.066	.390	.013	.097	-.236	-.014
SVRSUP16	-.055	.168	.367	.413	.493	-.397	.248	.024	-.020
SVRSUP17	.182	-.366	.694	.221	-.115	.080	-.275	-.100	.098
SVRSUP18	.564	.406	-.144	.084	-.164	-.323	.117	-.122	.403
SVRSUP19	.211	-.480	.349	-.009	-.035	.066	.553	-.148	-.258
SVRSUP20	.182	.237	.589	-.397	.094	.109	-.001	-.548	.122
SVRSUP21	.330	.199	.635	-.480	.276	.071	-.070	.005	-.087
SVRSUP22	.686	.048	.422	.097	.188	-.399	.052	.174	.053
SVRSUP23	.637	-.419	-.169	.045	-.066	.283	.414	.144	.142
SVRSUP24	.653	-.518	.414	.013	-.083	.187	-.199	.066	.119
SVRSUP25	.477	.388	-.017	.340	-.022	.170	-.206	.110	-.510

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

A scree plot for Supervisor Support can be found in figure 5.3 which details the scores of the various items in this variable. While the Rotated Component Matrix suggested 9 original factors within this variable, the scree plot did not identify any distinct factors with the exception of possibly one. Further analyses of the items within this variable suggested a combination of all the factors into one subscale (after the deletion of items which loaded below 0.50). This accounted for 13 items within this variable which were used to form a revised variable called Supervisor Knowledge and Support.

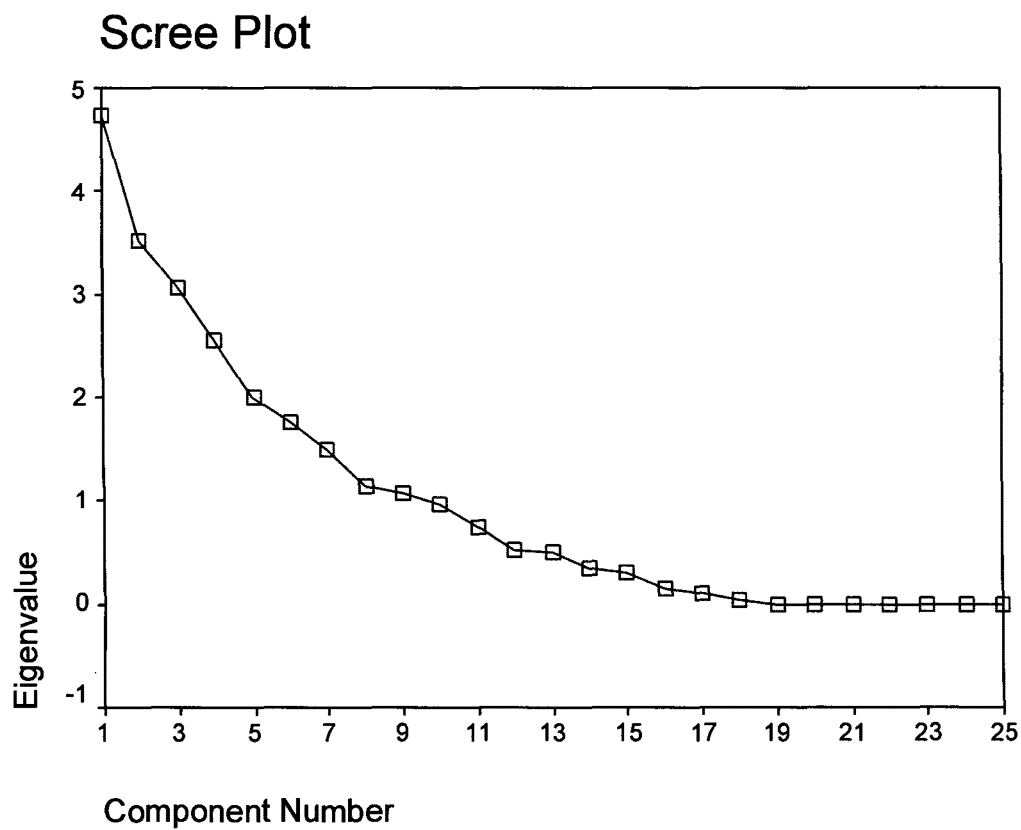


Figure 5.3: Scree Plot for Supervisor Support

Opportunity to Use: According to table 5.9, six factors were extracted in this variable all of which loaded above 0.50. Two groups were then combined as one which then reduced the factors to 5 groups. Items 1, 3, 4, 5, 6, 10, and 12 were combined to form one group called ‘resources and job aids’. Items 9, and 11, were called ‘skill use’; items 15, 16, and 17 were combined and called ‘work improvement’; items 2 and 8 were called ‘opportunity to use’ and items 7 and 14 were combined to represent ‘reprimand’.

Table 5.9: Rotated Component Matrix for Opportunity to Use

Rotated Component Matrix						
	Component					
	1	2	3	4	5	6
OPPUSE1	.257	.084	.043	.554	.428	-.139
OPPUSE2	.332	.477	.191	.106	.678	.237
OPPUSE3	.804	.212	-.041	.124	.187	.212
OPPUSE4	-.114	.321	.028	.725	-.051	.096
OPPUSE5	-.025	.339	-.429	.588	.130	.328
OPPUSE6	.842	-.159	.101	-.028	-.166	.041
OPPUSE7	.319	-.167	-.348	-.023	-.100	.757
OPPUSE8	-.115	-.166	.077	-.010	.888	-.129
OPPUSE9	-.224	.614	.327	.245	.347	.269
OPPUSE10	.719	-.087	-.072	.540	-.149	.216
OPPUSE11	.086	.814	.110	.237	-.015	.113
OPPUSE12	-.177	.896	-.137	.063	-.101	-.127
OPPUSE13	.774	-.140	.174	-.223	.163	.077
OPPUSE14	.177	.292	.347	.175	-.014	.810
OPPUSE15	.480	.013	-.542	-.456	-.034	.132
OPPUSE16	.331	-.029	.756	.126	.197	-.182
OPPUSE17	.006	.131	.868	-.215	.053	.210

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

The reduction and combination process accounted for two subscales being developed to represent Opportunity to Use. These subscales were called, Job Aids and Resources, and Use of Skills according to the items which were contained within them.

Examination of the scree plot for Opportunity to Use in figure 5.4 shows the evidence of 6 factors, although the first three are clearly distinguishable and apart from the rest. Only one item in this variable was discarded as it did not load above 0.50 which was the cut-off score for consideration into the revised model. Further analyses and revision which included combining some factors based on their relationship to one another (and nature of the items within them) resulted in the formation of two subscales within this factor. They were called, Job Aids and Resources, and Use of Skills, and collectively accounted for 16 items within this variable.

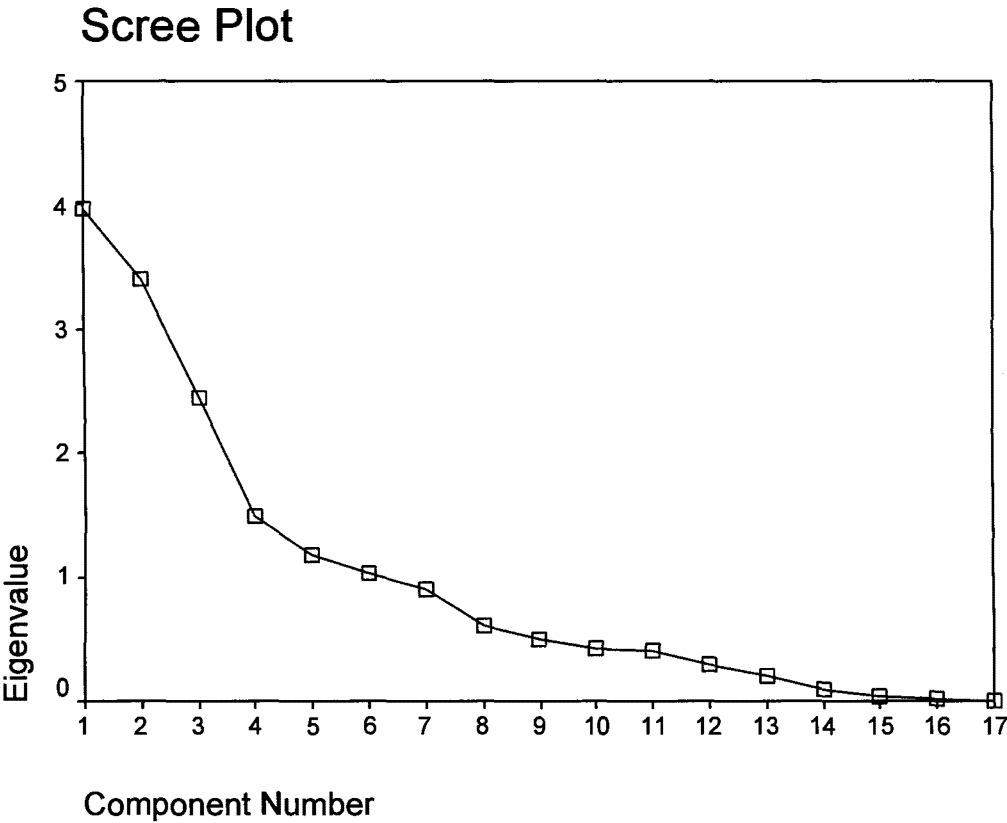


Figure 5.4: Scree Plot for Opportunity to Use

Reliability Analysis - Dependent Variable

Means, standard deviation and reliability estimates were computed for the dependent variable, training transfer as shown in table 5.10. A number of items in this variable scored low means and high standard deviations indicating a difference of opinion among the respondents. In addition to this the reliability alpha score of 0.7456 suggests that the items may have not loaded as well as they should load as described in the original instrument by Holton and Bates (1996).

Table 5.10: Reliability Analysis (Alpha) for Training Transfer

RELIABILITY ANALYSIS - SCALE (ALPHA)				
	Mean	Std Dev	Cases	
1. TT1	2.9375	.9817	32.0	
2. TT2	4.0625	.6189	32.0	
3. TT3	1.7500	.5680	32.0	
4. TT4	4.5625	.5644	32.0	
5. TT5	4.6250	.4919	32.0	
6. TT6	3.2188	.8701	32.0	
7. TT7	3.5000	.6720	32.0	
8. TT8	3.2188	.7064	32.0	
9. TT9	3.0000	.8424	32.0	
10. TT10	3.8125	.6445	32.0	
11. TT11	3.9063	.5880	32.0	
12. TT12	4.3438	.6530	32.0	
13. TT13	4.3438	.6016	32.0	
14. TT16	2.6875	.7803	32.0	
15. TT15	3.0313	.7822	32.0	
Alpha = .7456				

According to the table 5.10, with the exception of items 1, 3 and 14, the remaining items scored in excess of 3.00, with 5 items scoring above 4.00 indicating that most respondents had the tendency to agree with the statements within those items. On further examination item 14 was found to be not relevant to the nature of this study

as it related to being rewarded for work performance which is not within the guidelines or policies of a public sector agency in Western Australia. Subsequently this item was discarded from further consideration.

Factor Analysis for Dependent Variable

Factor Analysis conducted on training transfer suggested the presence of 9 possible factors within this variable. Only items that loaded above 0.50 were considered for further examination. Closer examination of the Rotated Component Matrix^a suggest items 1, 2, 10, 12, and 13 can be grouped together and called 'performance at work'; items 4, 5, 6, and 16 can be grouped together to represent 'problem solving at work'; items 3, 7, and 15 together represent 'social recognition; items 8, and 9 together represent 'supervisor acceptance'; and item 11 represent 'performance recognition'. Item 14 which related to rewarding performance at work was discarded from the analysis as it was not applicable to this group.

Table 5.11: Rotated Component Matrix for Dependent Variable

Rotated Component Matrix ^a

	Component				
	1	2	3	4	5
TT1	.601	-.098	-.147	.378	.052
TT2	.804	.305	.192	.344	.081
TT3	.145	.214	.839	-.221	-.090
TT4	.008	.830	.249	-.009	.283
TT5	-.146	.817	.012	.055	-.235
TT6	.049	.463	-.025	.283	.702
TT7	-.190	-.144	.672	.039	.524
TT8	-.004	-.212	-.214	.866	.001
TT9	.104	.185	.044	.911	-.030
TT10	.812	.116	-.033	-.229	-.027
TT11	.214	-.181	-.103	-.212	.882
TT12	.857	-.064	-.003	-.026	.105
TT13	.819	-.239	-.213	.034	.041
TT14	-.079	-.753	.297	.362	.161
TT15	-.215	-.164	.871	.030	-.123
TT16	-.028	-.636	.443	-.230	-.383

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

The scree plot for the dependent variable training transfer can be found in figure 5.5 which suggests five factors. Items one and two appear to be on their own and separate from the others, while items three and four are together, items five appears on its own, and the remaining items appear to be together. This appears to account for the five factors within this variable.

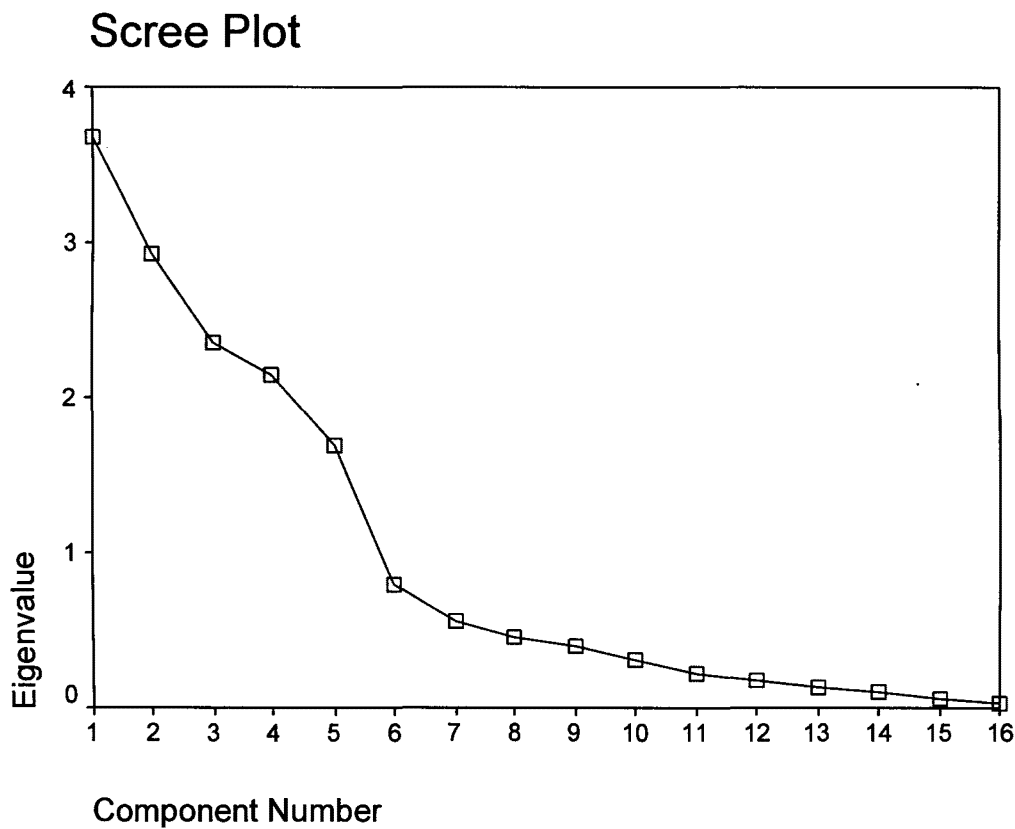


Figure 5.5: Scree Plot for Training Transfer

Revised Model of Independent and Dependent Variables

Further to the factor analyses of each of the independent variables, the items within each of the variables were combined to form subscales (as described earlier in this chapter). This reflected the co-linearity of the items within each of the variables (Perryer, 2004; Holton & Bates, 1996). The details of each of these subscales for the independent variables can be found in table 5.12, and details of the dependent variable, training transfer can be found in table 5.13. The analyses of each of these subscales in described later in this chapter. The revised model consisted of the following variables; Motivation to Work was revised into 2 subscales which were, Work Pressure, and Work Satisfaction; Organisational Support was revised into 2 subscales which were named as, Organisation Loyalty, and Organisation Value; Supervisor Support was renamed Supervisor Knowledge and Support, and Opportunity to Use was divided into 2 subscales which were name, Job Aids and Resources, and Use of Skills. Descriptive statistics for all the revised variables can be found in table 5.12.

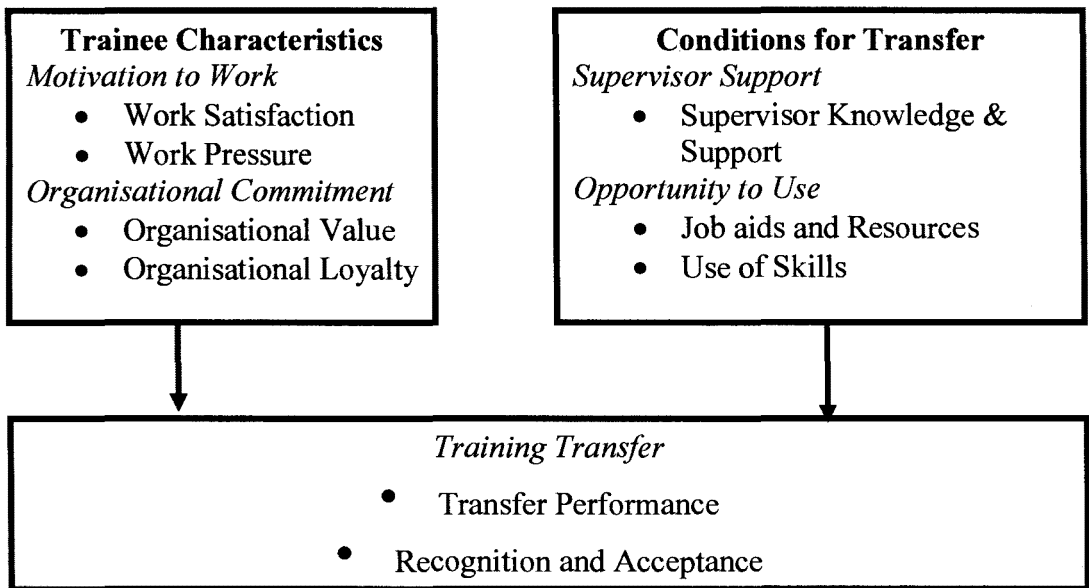


Figure 5.6 – The Revised Model

Independent Variables

Frequency tables, reliability estimates, and descriptive statistics were calculated for each of the sub scales in the revised model as described in table 5.12. Histograms for each of the independent variables were computed to identify the pattern and distribution of the data, resulting in some abnormalities in the distribution of the data. Reliability estimates for each of the sub scales in the independent variables were calculated.

Table 5.12: Descriptive Statistics for revised independent variables - Means and Standard Deviations

Statistics		Motivation to Work		Organist ion Commitment		Supervisor Support	Opportunity to Use	
		Work pressure	Work satisfaction	Organisation Loyalty	Organisation Value	Knowledge & Support	Job Aids & Resources	Use of skills
N	Valid	32	32	32	32	32	32	32
	Missing	0	0	0	0	0	0	0
Mean		18.65	20.50	24.15	21.18	44.59	25.34	25.21
Median		19.50	20.00	25.00	21.00	44.00	25.00	25.00
Std. Deviation		3.16	2.18	3.52	3.49	3.52	2.95	2.45

Means, standard deviations and media scores for each of the revised independent variables are found in the above table. The relatively low standard deviations for each of the variables suggest a good fit of the revised model.

Dependent variable – Training Transfer

As described earlier in this chapter, the dependent variable was revised to include two sub scales based on the factor analysis and reliability estimates. The two sub-scales as described in table 5.13 were; ‘transfer performance’, and ‘recognition and acceptance’.

Table 5.13: Reliability Analysis (Alpha) for revised dependent variable - Training Transfer

RELIABILITY ANALYSIS - SCALE (ALPHA)			
	Mean	Std Dev	Cases
1. Transfer Performance	34.5938	3.5547	32.0
2. Recognition & Acceptance	14.5000	2.3141	32.0
Reliability Coefficients 2 items			
Alpha = .4437			

Regression Analyses – Revised Model

The research questions postulated that there would be a relationship between each of the independent variables and the dependent variable, training transfer. These variables were tested using multiple regression analysis. Hypothesised relationships involving the dependent variable training transfer were tested using the revised factor structure identified in the factor analysis phase discussed earlier in this chapter.

Bivariate correlations between factors were calculated for the independent variables and dependent variable in the revised model which is shown in table 5.14. Training transfer (entered as Transfer Performance, and Recognition and Acceptance) was

entered as the dependent variable, while Motivation to Work (entered as Work Pressure, and Work Satisfaction), Organisation Commitment (entered as Organisation Loyalty, and Organisation Value), Supervisor Support (entered as Supervisor Knowledge and Support), and Opportunity to Use (entered as Job Aids, and Use of Skills) were all entered as the independent variables. While Work Pressure and Work Satisfaction indicate weaker relationships with the other variables, the remaining variables indicate stronger relationships, some as high as 0.70 (Organisation Value with Organisation Loyalty). Despite the weakness of the inter-relationship between Work Pressure, and Work Satisfaction with the other variables, this is within expectations (Bagozzi, 1980; Duncan, 1969) due to the nature of the variables and their loading on the remaining variables.

Table 5.14 Factor Correlation Matrix for the revised model

Correlation Matrix									
	Motivation to Work		Organisation Commitment		Supervisor Support	Opportunity to Use		Training Transfer	
	WKPRESS	WKSATIS	ORGLOYAL	ORGVALUE	KNOWSUPP	JOB AIDS	SKILLUSE	TRANPERF	RECOGACE
WKPRESS	1.0000								
WKSATIS	.1328	1.0000							
ORGLOYAL	.3469	.0397	1.0000						
ORGVALUE	.1658	.0676	.7008	1.0000					
KNOWSUPP	.4199	.0356	.2099	.3098	1.0000				
JOB AIDS	.1094	.2870	.4303	.5863	.5641	1.0000			
SKILLUSE	.0058	.1051	.2895	.2202	.5163	.4018	1.0000		
TRANPERF	.1390	.0353	.2313	.1598	.4767	.4465	.0707	1.0000	
RECOGACE	.1034	.0128	.1639	.2592	.4367	.4407	.2863	.3118	1.0000

The strength of the relationships between each of the variables is based on the values, with the larger values indicating stronger relationships and the lower values indicating weaker relationships. For example, table 5.15 suggests a less significant relationship between work pressure and training performance (0.094), while organisation loyalty and organisation values indicate a stronger relationship (0.589). The significance level (or p-value) is the probability of obtaining results as extreme as the one observed. A low p-value level (less than 0.05), indicates the correlation is significant and the two variables are linearly related. If the significance level is relatively large (0.50 or more, Hair et al., 1998), then the correlation is not as significant and the two variables may not be as strongly linearly related.

The low significance level (0.012) indicates that the relationship between Supervisor Knowledge and Support as an independent variable, and Training Performance as a dependent variable is relatively strong due to the low p-value and suggests that the two variables are positively correlated. Similarly the low significance level (0.005) between Job Aids and Resources and Recognition and Acceptance indicate that the two variables are positively correlated.

The overall results show an acceptable fit of the data to the model. A detailed description of the results obtained using regression analyses is described in the following pages.

Table 5.15 – Bivariate Nonparametric Correlations of the independent variables and dependent variables

			Motivation to Work		Organisation Commitment		Supervisor Support	Opportunity to Use		Training Transfer	
			Work pressure	Work Satisfaction	Organisation Loyalty	Organisation Values	Supervisor Knowledge & Support	Job Aids & Resources	Use of Skills	Training Performance	Recognition & Acceptance
Spearman's rho	Work pressure	Correlation	1.000	-.153	-.387*	-.132	-.391*	.162	-.101	.094	-.127
		Sig. (2-tailed)	.	.405	.029	.472	.027	.377	.581	.611	.488
		N	32	32	32	32	32	32	32	32	32
	Work Satisfaction	Correlation	-.153	1.000	-.175	.101	-.078	-.327	-.200	.112	.000
		Sig. (2-tailed)	.405	.	.339	.581	.672	.068	.272	.543	.999
		N	32	32	32	32	32	32	32	32	32
	Organisation Loyalty	Correlation	-.387*	-.175	1.000	.559**	.264	.394*	.301	-.228	.066
		Sig. (2-tailed)	.029	.339	.	.001	.144	.026	.094	.210	.719
		N	32	32	32	32	32	32	32	32	32
	Organisation Values	Correlation	-.132	.101	.559**	1.000	.305	.567**	.129	-.147	.228
		Sig. (2-tailed)	.472	.581	.001	.	.089	.001	.480	.423	.209
		N	32	32	32	32	32	32	32	32	32
	Supervisor Knowledge & Support	Correlation	-.391*	-.078	.264	.305	1.000	.514**	.408*	.439*	.439*
		Sig. (2-tailed)	.027	.672	.144	.089	.	.003	.020	.012	.012
		N	32	32	32	32	32	32	32	32	32
	Job Aids & Resources	Correlation	.162	.327	.394*	.567**	.514**	1.000	.167	.451**	.480**
		Sig. (2-tailed)	.377	.068	.026	.001	.003	.	.361	.010	.005
		N	32	32	32	32	32	32	32	32	32

Table 5.15 (continued) – Bivariate Nonparametric Correlations of the independent variables and dependent variables

	Use of Skills	Correlation Coefficient	-.101	-.200	.301	.129	.408*	.167	1.000	.030	.239
		Sig. (2-tailed)	.581	.272	.094	.480	.020	.361	.	.871	.188
		N	32	32	32	32	32	32	32	32	32
	Training Performance	Correlation Coefficient	.094	.112	-.228	.147	.439*	.451**	.030	1.000	.276
		Sig. (2-tailed)	.611	.543	.210	.423	.012	.010	.871	.	.126
		N	32	32	32	32	32	32	32	32	32
	Recognition & Acceptance	Correlation Coefficient	-.127	.000	-.066	-.228	.439*	.480**	-.239	.276	1.000
		Sig. (2-tailed)	.488	.999	.719	.209	.012	.005	.188	.126	.
		N	32	32	32	32	32	32	32	32	32

* Correlation is significant at the .05 level (2-tailed).

** Correlation is significant at the .01 level (2-tailed).

Procedure Adopted for Regression Analyses

A detailed step by step process was adopted at this stage of conducting a regression analysis to identify the strength of the relationship between each of the predictor variables and dependent variable in the revised model. The tables for these analyses are found in appendices III and IV.

In step1, Work Pressure and Work Satisfaction were entered as the independent variables with Transfer Performance entered as the dependent variable. At this stage the model suggested a weak fit with an R^2 of 0.022 (adjusted $R^2 = -0.045$), indicating that Work Pressure and Work Satisfaction accounted for approximately only 2% of the variance in Transfer Performance.

In step 2, Organisation Value and Organisation Loyalty were added as independent variables to the above independent variables of Work Pressure and Work Satisfaction. The change in R^2 was significant and R^2 increased to 0.54 (adjusted $R^2 = 0.81$), indicating that Organisation Value and Organisation Loyalty appeared to be significant predictors of Transfer Performance.

In step 3, Supervisor's Knowledge and Support was added as the fifth independent variable to the model. This addition to the model, did appear to change the model significantly ($p=0.009$), and R^2 increased to 0.227 (adjusted $R^2 = 0.139$) thus indicating that the knowledge and support of the supervisor impacted significantly on transfer performance, and appeared to account for approximately 23% of influence on training performance.

Step 4 of the model involved entering Job Aids and Resources and Use of Skills as independent variables to the others. The addition of these variables appears to have

significantly impacted the model with an increased $R^2 = 0.491$ (adjusted $R^2 = 0.249$) indicating that transfer performance was significantly influenced by the independent variables at this stage of the model, approximately 50%. At this stage, it appeared that the four original independent variables comprising Motivation to Work (combined as Work Pressure and Work Satisfaction), Organisation Commitment (combined as Organisation Value, and Organisation Loyalty), Supervisor Support (represented as Supervisor Knowledge and Support), and Opportunity to Use (combined as Job Aids and Resources, and Use of Skills), all have reasonable to significant impact on the dependent variable Training Performance (representing one sub scale of the larger dependent variable, Training Transfer).

The above process and steps were repeated using the same independent variables but replacing the dependent variable with Recognition and Acceptance (the second half of the main dependent variable Training Transfer). The summary of this second stage of analyses of the revised model provided a $R^2 = 0.336$ (adjusted $R^2 = 0.142$) with a significance level of $p = 0.148$. This suggests that the four independent variables (revised model) consisting of Motivation to Work, Organisation Commitment, Supervisor Support, and Opportunity to Use account for approximately 34% of the influence on the dependent variable in the form of gaining Recognition and Acceptance from supervisors and other team members once training has been completed. Thus, when combined with the same independent variables accounting for almost 50% of their influence on Training Performance, one might conclude that in these circumstances the four original independent variables account for almost 50% of influence on training transfer as an outcome of training. The summary results of these analyses are found in appendices III and IV.

Summary of Research Questions

The first research question proposed that Motivation to Work may have some influence on training transfer as an outcome. Factor analysis revealed that Motivation to Work items comprised two main factors within this construct, namely Work Pressure and Work Satisfaction. Adding training transfer (separately as training performance and as recognition and acceptance) to the model produced an R^2 0.02 and $p=0.113$ thus indicating that while it might be generally true that Motivation to Work might have influenced training transfer in previous studies (see table 3.1), it appears not to have any significant impact (2%) on training transfer in this study. The reasons for this difference may be varied and are discussed in detail in the next chapter.

The second research question proposed that organisation commitment would moderate the relationship between training transfer and individual organisation commitment and thereby influence training transfer. Factor analysis indicated the presence of two major factors in this construct, namely organisation value and organisation loyalty. Adding these two variables to the model in the second step, produced an $R^2 = 0.59$ and 0.90 (adjusted $R^2 = 0.81$ and -0.045), accounting for a significant proportion (approximately 50% and 90%) of the relationship with training transfer up to this stage of the model.

The third research question suggested a possible relationship between supervisor support and training transfer. Initial factor analysis uncovered four factor groupings in this construct. However, some items were deleted due to the low reliability scores and the remaining items were combined and renamed as Supervisor Knowledge and Support. Adding this variable to the model and subjecting it to a regressing analysis test, suggested a reduced R^2 from 0.90 (in the previous step) to 0.330 (adjusted R^2 from -0.045 to 0.201) indicating a significant influence in the relationship with training transfer.

The last research question enquired about the influence of opportunity to use on training transfer. Factor analysis of this construct indicated the presence of two large groups of factors which were named job aids and resources, and use of skills. Adding these variables to the model above provided a marginal increase of R^2 from 0.330 (in the previous step) to 0.336 (adjusted R^2 from 0.201 to 0.142) indicating the presence of reasonable influence on the dependent variable training transfer.

Limitations of the Study

This study has several limitations that need to be acknowledged. These limitations relate to the agency and sample size of the study, the design of the study and the training intervention itself.

One design limitation of this study is the fact that the data were obtained at a single point in time after the end of the training program. It is quite possible that a longitudinal study would have detected changes in training transfer at the different points after the study if conducted at specific intervals. This may have provided valuable insights into the influence of the transfer conditions and the rate of transfer relapse.

The environment within which the study was conducted has several limitations. Firstly, the agency from which the sample was collected is a public sector agency, in which the commitment of staff to organisational values, code of conduct, commitment to work value and workplace productivity have been difficult issues for the management in the past. Does the fact that this is a public sector agency suggest that this may have some impact on their motivation to work, commitment to learn and transfer skills to the workplace? Might the fact this study was conducted in a public sector agency have had an impact on the results of this study? This study focussed on a single public sector agency in Western

Australia and within a specific work group (information technology) and as such generalisations should not be made across the entire agency or the public sector based on these results. One needs to use these results with caution and build upon them. Due to the fact that the employees belong to a particular work group within a particular public sector agency performing a set of given tasks based on the specific nature of the training they received, the results may not be generalised across the agency or the public sector. The training delivered to the sample population is specific to them only and is not delivered to the staff of any other agency in Western Australia.

In summary, despite the limitations noted, none of these limitations was believed to seriously compromise the quality of the study, which has demonstrated that the trainee characteristics and transfer conditions are important factors in the transfer of skills, knowledge and attitudes acquired as a result of training.

Conclusion

This chapter presented the results of the study. Descriptive statistics for the sample were presented and discussed. Factor analysis of the independent variables showed that while there were several factors in each variable, the revised model as described earlier in the chapter consisted of two subscales in Motivation to Work (work pressure and work satisfaction); two subscales in Organisational Commitment (organisation values and organisation loyalty); one revised subscale in Supervisor Support (renamed as supervisor knowledge and skills), and two subscales in Opportunity to Use (named as job aids and resources, and use of skills). The dependent variable training transfer contained four factors within the data which were combined into two subscales (as described earlier in this chapter) and named as, transfer performance and recognition and acceptance. The research questions were tested using regression analysis and some broad conclusions deduced.

CHAPTER 6 – DISCUSSION AND RECOMMENDATIONS

Introduction

This chapter presents the discussion and recommendations based on the study results. The chapter commences with a restatement of the objectives of the study, and then reviews the research questions put forward in the beginning of the study. It goes on to provide a detailed discussion of the results of each of the variables including a detailed response to each of the research questions specifically related to this study, and a broader response to the issue of training transfer generally. Recommendations are made, and the chapter concludes by suggesting possible implications for practitioners and future research.

Objectives of the Study

The study set out to address the gaps in the literature identified by Baldwin and Ford (1998), Holton and Bates (1996), and Tannenbaum et al., (1991). While each of these models developed their own framework for researching the issue of training transfer, and with the exception of Holton and Bates (1996), they individually did not address specific combined factors of trainee and conditions for transfer similar to those which this study proposed. In addition to this, while all three models provided a solid foundation for furthering the issue of training transfer, all three models also suggested that more research was needed in specific areas of training transfer. They specifically stressed the need for research which included a combination of trainee characteristics and conditions for transfer (Baldwin and Ford, 1988; Holton and Bates, 1996). This study aimed to help address that gap in the literature.

Specifically this study was aimed to examine the relationship between two trainee characteristics, Motivation to Work and Organisational Commitment as independent

variables, and the dependent variable of Training Transfer. In addition to this, the study attempted to examine the relationship between Supervisor Support and Opportunity to Use as independent variables and Training Transfer as the dependent variable. In examining possible relationship between these variables, the study proposed the following research questions:

Trainee characteristic - Motivation

- **Research Question 1:** *To what extent does Motivation to Work as a trainee characteristic influence training transfer at the workplace?*

Trainee characteristic – Organisational Commitment

- **Research Question 2:** *To what extent does Organisational Commitment as a trainee characteristic influence training transfer at the workplace?*

Conditions for Transfer – Supervisor Support

- **Research Question 3:** *To what extent does Supervisor Support as a condition for transfer influence training transfer at the workplace?*

Conditions for Transfer – Opportunity to Use

- **Research Question 4:** *To what extent does Opportunity to Use as a condition for transfer influence training transfer at the workplace?*

Discussion and Recommendations

The findings of the study provide an interesting perspective on the four independent variables; motivation to work, organisational commitment, supervisor support, and opportunity to use, and their influence on the dependent variable – training transfer as an

outcome. Many of the findings in this study provide support for conclusions drawn by researchers in previous studies. Other findings however, in particular the existence of significant interactions between the original variables suggest that a different conceptualisation of the way in which the four independent variables influence training transfer (within the particular environment in which this study was conducted) may be appropriate. While this may not be the first study to hypothesise the presence of these interactions, there is little evidence that a similar or the same study has been conducted in a similar environment with the same set of variables. This is not surprising, as this was a specific case study conducted within a specific environment.

Training Transfer

While there is general agreement that training transfer is a desired outcome of training, there is little agreement as to what significantly influences training transfer or to what extent it is influenced (Baldwin & Ford, 1988; Holton et al., 1997b; Salas & Cannon-Bowers 2001). Previous researchers have conceptualised training transfer as both a unidimensional construct and as a multi dimensional construct (Tannenbaum et al., 1992; Georgensen, 1982). These studies have also defined and operationalised training transfer in a number of different ways. With a few exceptions such as Holton and Bates (2003), most previous studies have tended to investigate one or more variables that are of interest to the researchers involved in the study.

While many studies have provided some valuable insights into factors which make up the climate to influence training transfer, very few have been based on a combination of transfer climate factors such as those included in this study. The absence of such underpinning studies has resulted in these findings that are difficult to compare or generalise to other populations, especially populations of a similar nature to the population

of this study. In addition to this, there appears to be very little research undertaken which is based on the dependent variable training transfer being reduced to two specific subscales (training performance and recognition and acceptance) as those included in this study. The factor analyses used in this study resulted in identifying two distinct subscales within the one dependent variable training transfer, namely Training Performance, and Recognition and Acceptance.

Initially it was purported that there was a four factor model (independent variables comprising Motivation to Work, Organisational Commitment, Supervisor Support, and Opportunity to Use) which might influence training transfer. The data analysis did not support this hypothesised model, but rather it suggested several factors within each of the variables. Further examination of the analyses, including discarding items which loaded below .50 resulted in between one and two subscales within each of these variables. The factor analysis suggested that Motivation to Work be divided into two subscales namely, work pressure, and work satisfaction; Organisational Commitment comprised two subscales, organisation values, and organisation loyalty; Supervisor Support be renamed as supervisor knowledge and skills; and Opportunity to Use be divided into two subscales, namely, job aids and resources, and use of skills.

It is evident from the regression analysis that the independent variables in the revised model, work pressure, work satisfaction (Motivation to Work); organisation values, organisation loyalty (Organisational Commitment); supervisor skills and knowledge (Supervisor Support); job aids and resources, and use of skills (Opportunity to Use), all had varying degrees of influence and impact on training transfer. The extent to which they influenced the impact on training transfer ranged from 2% (motivation to work) to almost

50% (opportunity to use). The reasons for these variances are discussed in detail in the individual sections of each of the variables later in this chapter.

Motivation to Work

This factor contained 13 items in which the first eight referred to motivation, and the remaining items referred to work pressure and stress. Factor analyses conducted on this variable did not indicate anything different for these two groups. On closer inspection of the items it was decided to rename the two subscales in this variable as; work pressure (items 9 to 13) and work satisfaction (items 1 to 8). The loading of each of these items was consistent with the level suggested by Hair et al., (1998) and hence there was no need to discard any items during further analyses.

Regression analyses conducted on work pressure and work satisfaction suggested varying degrees of interrelationships between these and other variables including the dependent variable – training transfer. Work pressure and work satisfaction collectively account for approximately two percent of the model and appear to have little influence on training transfer in this case study. The presence of low values (absolute) suggest that while they may have little or no impact on training transfer they appear to have reasonable impact on some of the other independent variables, including organisation loyalty ($p=0.26$) and resources and job aids ($p=0.08$). Cheng and Ho (2001) in a study to identify the influence of motivation on training transfer suggest that results below twenty percent ($r=0.21$, $p<0.01$) would not be considered to be highly impacting the dependent variable.

It appears that Motivation to Work had less impact (2%) on training transfer according to the results in this study. This may be due to a wide range of reasons prevalent within the organisation and within the staff themselves. This non-significant involvement between

motivation to work and transfer may be due to the lack of career paths within the organisation, or that staff do not feel any alignment with the values of the organisation, or that they do not like the working conditions and are treating this as a part of their career journey. In addition to this, staff may be feeling less motivated to work due to the lack of an adequate rewards system within the organisation, or a lack of providing adequate professional development opportunities for career advancement. Whatever the reasons may be, the results of this study suggest that the organisation need not be too concerned as motivation to work has little or no impact on training transfer in this study.

Organisational Commitment

Organisational commitment can influence how people set personal and professional goals, perform tasks and administer resources (Lok & Crawford, 2004). It affects the way people consciously and subconsciously think, make decisions and ultimately the way they perceive, feel and act towards their job and the organisation. Previous research (Chen & Ho, 2001) has produced evidence where demographic data such as years in the organisation, age, level of education, and support from the organisation can significantly impact the employee's commitment to the organisation.

In this study, the second research question purported a relationship between organisational commitment and training transfer. In order to test this research question, a 15-item scale (Modway, Steers & Porter, 1982) was administered to the survey population. Initial reliability analysis resulted in items 3, 10 and 12 being discarded due to low factor loadings (below .50). Subsequent factor analysis suggested the presence of 2 sub scales within this variable, namely, Organisation Value, and Organisation Loyalty. These two subscales were added to the revised model and subjected to regression analysis to test the relationship with the dependent variable.

Initial regression analysis consisting of the independent variable Organisation Loyalty and Transfer Performance as the dependent variable provided an $R^2=0.54$ and adjusted $R^2=0.22$. This accounts for a significant strength in the relationship between these two variables (more than half of the model at this stage) suggesting that Organisational Loyalty has significant influence on training transfer. Further analysis conducted (combining Organisational Loyalty and Organisational Values) provided the same $R^2=0.54$, but with a negative adjusted R^2 of -12. In this context one may conclude that Organisational Commitment as the predictor variable significantly influences training transfer. This relationship appears to get stronger when combined with Motivation to Work ($R^2=0.59$) thus indicating that collectively these two predictor variables have a strong relationship on the dependent variable training transfer (despite Motivation to Work as an individual variable accounts for only 2% of the model). This is similar to previous studies in this area (Perryer, 2004; Foxon, 1993).

The reasons for this apparently significant relationship at this stage of the model could be due to a number of factors. It could be related to a perception among the sample population that their values and the values of the organisation are aligned; it could be related to the culture of the organisation, or the leadership of the organisation or simply that the sample population feel less motivated to work but are loyal to their employer. However, when interpreting these results one must consider the absence of testing any demographic data against these variables to establish whether length of service, age, gender, employment level, or educational level have any correlation to these results. In addition to this, the sample size within this employer is not representative of the wider population and hence generalisations, if made, should be made with caution.

Organisations and leaders in organisations must find ways to help staff develop organisational commitment. This can be achieved by the organisation providing the appropriate environment where staff feel committed to work and support the values and objectives of the organisation. Given the right type of working conditions, appropriate set of policies and procedures, attractive recruitment and reward structures, career advancements, induction and employee development possibilities, employees are more likely to develop strong commitment to the values of the organisation. This then helps the staff to develop a sense of loyalty toward the organisation which contributes to a harmonious and conducive working relationship between employer and employee. For the purpose of this study one can conclude that Organisational Commitment does have a significant influence on training transfer.

Supervisor Support

Supervisory support for training has been cited as a key work-environment variable affecting the transfer process. Employees look towards their supervisor for important information regarding how to work successfully within the social environment of the organisation. As Huczynski and Lewis (1980), state, employees who perceive that a training program is important to the supervisor will be more motivated to attend, learn, and transfer trained skills to the job.

The supervisor support variable contained 25 items which were subsequently revised and renamed as Supervisor Knowledge and Support. The importance of the role of a supervisor in the workplace has been acknowledged in several previous studies in this area (Perryer, 2004; Machin & Fogarty, 2003, 1998, 1997). Regression analysis results for this study does appear to support this position, which accounted for a little over one fifth (22%) of the model ($R^2 = 0.227$, and adjusted $R^2 = 0.201$). While this might be considered

significant in most other studies, when compared to the results of Organisational Commitment (more than half of the model) this appears to have a lesser impact on the dependent variable, training transfer. However, it must be acknowledged that even an impact of over one fifth of the model may be considered significant in most cases. The fact that respondents were relatively happy with the knowledge and support provided by their supervisors indicates a reasonably strong relationship between supervisor and subordinate. The reasons for this may be many and varied. Questions which may be asked to identify the reasons for this relationship may relate to the level of support and interaction provided by supervisors, or it could relate to the type of working conditions which the supervisors are willing to consider for their subordinate staff, or it could be the level of encouragement and recognition provided to staff by supervisors.

The strength of the relationship between Supervisor Support and Training Transfer appears to increase marginally ($R^2 = 0.278$, and adjusted $R^2 = 0.139$) when combined with Motivation to Work and Organisational Commitment, thus accounting for almost one third of the model at this stage. This appears to be suggesting a positive response to the third research question and one may conclude that Supervisor Support does appear to have a reasonable to significant influence on training transfer.

Supervisor support has been put forward as a critical element of transfer in the majority of studies previously conducted. Where a factor structure has been tested, and a multidimensional structure identified, support, in particular supervisor support, has always emerged as a transfer climate factor as it did in this study. It seems reasonable that if managers and supervisors do not communicate the fact that they really care about whether or not training is transferred to the job, transfer is not likely to occur. If managers support

the transfer of training but appear not to be concerned about whether or not it really occurs, then it must act as an inhibitor to transfer.

Opportunity to Use

Although most research has evaluated training success by measuring the amount of learning that has occurred by the end of a training program, Baldwin and Ford (1988) suggested the study of opportunity to apply trained skills on the job. Fendrich et al., (1988), in their review regarding skill maintenance, realized that the lack of opportunity to perform tasks results in low performance. Ford et al., (1992) argued that research on training transfer assumes that trainees have similar opportunities to transfer. They suggested that trainees receive different opportunities to transfer. Also, the various transfer opportunities may affect transfer outcomes. If organisations provide more practical experience for trainees to apply their newly acquired skills and knowledge, work performance is likely to be improved. Opportunity to transfer is then proposed to be related to transfer outcomes.

This predictor variable contained seventeen items which were grouped into two subscales as described earlier. The strength of the relationship between opportunity to use and training transfer appears to be significant ($R^2 = 0.213$ and adjusted $R^2 = 0.159$). This would indicate that at this stage of the model, opportunity to use accounts for over twenty percent of the influence on training transfer, without considering any of the previous three predictor variables. When combined with motivation to work the results are marginally more encouraging – an increase in $R^2 = 0.257$ and adjusted $R^2 = 0.147$. This indicates a marginal increase (when compared to opportunity to use on its own) in the strength of the impact these predictor variables have on transfer outcomes. By adding a third predictor variable to this model, organisation commitment, the results indicate a strengthening of the

relationship between these three predictor variables and the dependent variable as evidenced by the $R^2=0.323$ and adjusted $R^2=0.168$. This suggests that these three predictor variables account for over one-third of the influence on the dependent variable and transfer as an outcome. Adding the last predictor variable to the model increases the $R^2=0.459$ and adjusted $R^2=0.249$, thus accounting for almost half the model and influence on the dependent variable, training transfer.

It is apparent from the analyses that the opportunities for practising newly gained skills and knowledge back at the workplace is made available to the staff by the organisation in this study. The form in which these opportunities to use their new skills might vary from time and resources provided, to new tools and job aids, incentives for trying new procedures or methods and so on. It is apparent that in this study the sample population have adequate opportunities for using their new skills (as this accounts for almost half the perceived influence on transfer outcomes). However, one may assume that the organisation is only obtaining part benefit from its investment in training (and this may not be due to any reasons in the control of either the staff or the management), though this might not necessarily be the case. In order to gain maximum benefit from its training investment, the organisation may want to consider what (if any) barriers to training transfer there may be and what might be done to increase training transfer at the workplace.

Another strategy the organisation might want to consider in order to increase transfer could be to identify appropriate work structures and work plans immediately following on from a training program. By recognising the importance of training and allowing for staff to practise their new skills and trial use the knowledge gained, they are sending a clear and strong message to staff that training, and training transfer is an important strategy for the

organisation and the staff. It is possible that this could also increase motivation and organisation commitment among staff.

Implications for practitioners

From an applied perspective, the results have implications for current human resources practices as well as organisational policies and procedures. First the findings suggest ways in which the organisation can alter the work environment to enhance training efforts and prepare people for future training endeavours. For example, if trainees fail to apply their training to the job, organisations should identify any organisational barriers that block their ability and motivation to do so. By assessing the existence and impact of these barriers and mitigating them where they do exist, the organisation will make it easier for trainees to transfer their skills and send a message to all employees that training transfer and skill acquisition are valued by the organisation.

The analysis of the findings of this study identifies a number of factors which have the potential to impact training transfer. Combined with the literature in this area and the results of previous research it is possible to interpret these results and make reasonable recommendations by which managers might take action to improve the rate of training transfer. One of the common themes in much of the social science literature is the assumption that a 'standard' employee views a situation in a 'standard' way. Previous work environment and transfer studies (see tables 3.1; 3.2; 3.3; and 3.4) show that employees in the same organisation can have very different perceptions of the same environment. Managers need to pay more attention to the way in which the work environment impacts upon the individual if they expect employees to transfer new ideas learned off the job to the workplace.

The importance of the supervisor support as a critical element of transfer which is made apparent by the results of this study confirms the findings of many previous studies.

Managers need to show that they are prepared to assist their employees, by setting goals, reinforcing learning and providing appropriate tools and equipment to help their staff achieve set levels of productivity in the workplace (Holton & Bates, 1999, 2003; Foxon 1993a, 1993b; Machin, 2000). Failure to do so will substantially reduce or inhibit transfer. In addition to this, supportive co-worker behaviour is likely to encourage the transfer of training to the job through peer pressure.

In addition, managers need to do much more than just set goals, provide feedback and supply appropriate tools and equipment. They also have to convince employees that they really care about the training being transferred to the job (Holton & Bates, 1999, 2003; Foxon 1993a, 1993b; Machin, 2000). They need to ensure that employees have the time and freedom to apply their newly acquired skills, without the pressure of high workloads and constant interruptions (Perryer, 2004). They also need to understand the principles underpinning well established process theories of motivation. This study has shown that employees are more likely to transfer learning to the job if they can reasonably expect to receive some valued personal outcomes by doing so.

The organisation might want to consider to begin identifying appropriate methods by which it can increase the motivation and commitment of its staff, if they wish to ensure that the money it invests in its staff training is transferred to the workplace as positive outcomes. It needs to start a process of 'engagement' with its staff and impress upon them the importance and value of training transfer. This can be achieved by a number of issues being addressed. Firstly, employees are not likely to transfer learning if they perceive that managers are not serious about the value of the training or the need to transfer. This is

particularly so, where the training intervention is not a traditional skill based one, and might be considered by some as the latest management fad. Managers who direct employees to attend such a program, even though the manager may see little value in the program, are likely to be perceived as lacking integrity, and are unlikely to gain employee commitment to transferring new skills.

The results of this study suggest that the sample population have significant commitment to the organisation (accounted for more than half the impact on training transfer). The finding that organisational commitment is a significant predictor of training transfer in this study is consistent with earlier studies (Bartlett 2001; Bates, 1997; Fecteau et al., 1995; Machin and Fogarty 1998; Tracey et al., 2001). The fact that organisational commitment has again emerged as a significant influence on training transfer, reinforces the importance of employee commitment to the transfer process. The reasons for this might be that, committed employees understand the reasons for the training, and accept that transferring newly acquired skills will further the objectives of the organisation. Another possible explanation could be that, committed employees tend to accept that their managers will usually make decisions that will lead to the achievement of organisational objectives, something with which committed employees usually identify (Perryer, 2004). Consequently, it is possible that committed employees will transfer training to the job if the training content is perceived to be relevant to the achievement of organisational objectives.

While this level of commitment might be considered good, there is appears to be opportunity to increase such commitment, assuming the organisation wishes to do so. Commitment to the organisation can take varying forms and approaches depending upon

the outcome to be achieved and it is up to practitioners to identify the most suitable and appropriate methods by which organisational commitment can be increased.

Supervisor behaviour is equally important in assisting employees transfer training. For example, in a study by Soutar, McNeil and Molster (1994), respondents cited supervisor behaviour as the most critical influence on ethical decision-making. In the same study it was found that behaviour of senior executives was far more influential than written policy on employee behaviour.

Implications for future research

Transfer studies have repeatedly pointed to the critical role of supervisor and organisational support in the form of opportunity to practice new skills. However, only limited research has identified the specific skills, competencies and behaviours that are necessary to ensure that transfer occurs. Many organisations now train supervisors to monitor and evaluate employee performance and identify training needs, but few attempt to develop the skills and competencies that supervisors and co-workers require to facilitate transfer when it comes to trainees returning to their jobs. Much research is needed to identify and understand the importance of the roles' supervisors and co-workers can play in transferring training to the workplace.

While this study identified that more than half the impact on the transfer process was due to organisational commitment, there appears to be a need to investigate this phenomenon further. This study has clearly demonstrated that there is opportunity to increase our understanding of the importance of organisational commitment in the transfer process.

While this study has attempted to contribute to this area, there is a lot more that needs to be

done in order for us to increase our understanding of the importance of organisational commitment and its impact on the transfer process.

As well as identifying that support was a statistically significant predictor of transfer, this study also identified motivation to work as a less significant variable which did not contribute markedly to the transfer process (only 2%). It seems likely that while supervisor support, organisational commitment and opportunity to use are important to the transfer process, motivation to work did not impact significantly in this study.

This study is the only one known to this author that has examined transfer relating to a highly specific type of training intervention, as opposed to more traditional knowledge based training course. More studies that examine factors affecting transfer resulting from similar training interventions such as the one in this study are needed to confirm the findings in this study. In addition, further research that examines other types of non-traditional HRD interventions is also needed, in order to determine whether existing theory fits emerging training approaches.

Although it might be perceived to be too difficult to do, it would be of great interest and benefit to the industry in which this organisation belongs, to undertake a similar study either across Australia (which has 5 similar organisations) or in the Asia- Pacific Region or in New Zealand, and compare the findings of this study to a much larger population base. Further studies that included transfer behaviour based on additional data collection procedures in addition to this one, including supervisor reports and co-worker reports would provide greater validity in the measurement of the criterion variables. Similarly it would be beneficial to the area of transfer, if a study could be conducted within this organisation which involved a wider cross-section of the employees.

Conclusion

This chapter has presented a discussion of the results of this study including implications for practitioners and future research. Results from this study complement and extend the findings of earlier studies on training transfer. Firstly, this study has examined training transfer climate issues in a different way from the majority of previous studies. In addition to this, the study sample was drawn from the public rather than private sector, and within an industry which has not previously been involved in any similar studies.

The study found that the two trainee characteristics which may influence transfer – motivation to learn and organisational commitment have varying degrees of influence on training transfer. In this study, motivation to learn did not appear to significantly influence training transfer, whereas, organisational commitment accounted for almost half the model. From this study, one can conclude that, within the context of this sample and organisation, organisational commitment had a significant impact on training transfer.

The conditions for transfer which were part of this study included supervisor support and opportunity to use. The results of this study suggest that in this case, supervisor support did significantly influence training transfer (over 22%). The other predictor variable, opportunity to use, significantly influenced the transfer process due to a host of reasons, such as, the organisation providing the time to practise, providing the appropriate tools and job aids, resources to trial, absence of sanctions if mistakes are made and so on and so forth.

There are several implications for the organisation in this study and for HRD practitioners in general. The organisation needs to identify appropriate structures and opportunities to motivate its staff and engender a sense of support for its staff especially from supervisors

and managers in the workplace. This is necessary if the organisation wants to ensure that it obtains some sort of return for its investment in training staff by way of training transfer.

A significant contribution made by this study to the field of training transfer is in the area of the revised model which identified sub groups of variables within the 4 independent variables; Motivation to Work, Organisational Commitment, Supervisor Support, and Opportunity to Use. Further, the dependent variable, Training Transfer was divided into two sub groups. This categorisation of these variables was not identified prior to this study and is a significant contribution to this field which provides an opportunity for further exploratory research.

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Appendix 1 – Survey Instrument



25 May 2005

Dear Participant

Re: *Transfer of Training Study using the Learning Transfer System Inventory Survey*

I am writing to seek your assistance and participation in a study which I am conducting toward the award of Doctor of Education. I have received Ethics approval to conduct this study from the Faculty of Community Services, Education and Social Sciences of Edith Cowan University. This study is designed to identify what factors might or might not influence positive transfer of skills training from the classroom to the workplace. In order to progress this study, I need your assistance to complete the attached survey. Your participation in this study is purely voluntary.

What do you have to do? All you need to do is spend about 20-25 minutes and complete the survey by following the instructions at the top of the first page.

Confidentiality: As you can see, I do not need any names or identification of individuals. The data collected will be only used for the purposes of this study and nothing else. I guarantee the confidentiality and privacy of your information as I will maintain all records at my home until the study is complete. Once completed, the records will be securely stored in locked storage at the University for 5 years until it is destroyed.

If you have any questions or concerns please do not hesitate to contact me on [REDACTED] or extension 5388. Alternatively you are welcome to contact the Co-ordinator of the course, Associate Professor Andrew Taggart on 9370 6806 or by email at a.taggart@ecu.edu.au.

Please complete the survey and drop it off at my desk in the sealed envelope provided.

Thank you for your assistance

Yours sincerely

Consent to Participate Form

I _____ have read the information and agreed to participate in this study and any questions I have asked have been answered to my satisfaction.

I agree to participate in the activities associated with this research and understand that the research data gathered in this study may be published providing I am not identified in any way.

Signed _____

Date: _____

Training Transfer Questionnaire

Each statement below describes an aspect of the work environment which may determine how effectively you are able to use the skills learned during formal training received off the job in your organisation.

Please indicate whether you agree or disagree with each statement using the scale below as a guide and place a tick (✓) in the box that most closely indicates your opinion of the statement.

Strongly Disagree (SD)	Disagree (D)	Neither (N)	Agree (A)	Strongly Agree (SA)
1	2	3	4	5

1 Motivation

	Description	SD 1	D 2	N 3	A 4	SA 5
1.1	I would much rather relax around the house all day than go to work.					
1.2	My work is more satisfying to me than the time I spend around the house.					
1.3	If I inherited so much money that I didn't have to work, I would still continue to work at the same thing I am doing now.					
1.4	Some of my main interests and pleasures in life are connected with my work.					
1.5	I have sometimes regretted going into the kind of work I am now in.					
1.6	The work I do is one of the most satisfying parts of my life.					
1.7	I enjoy my spare-time activities much more than my work.					
1.8	To me my work is just a way of making money.					
1.9	My job requires that I work very hard.					
1.10	I seek relief from demanding work.					
1.11	I am under constant pressure to do work on time.					
1.12	I have work piling up faster that I can complete it.					
1.13	I have to work faster than I would like.					

2 Organisational Commitment

	Description	SD	D	N	A	SA
		1	2	3	4	5
2.1	I am willing to put in a great deal of effort beyond that normally expected in order to help this organisation be successful.					
2.2	I talk up this organisation to my friends as a great organisation to work for.					
2.3	I feel very little loyalty to this organisation.					
2.4	I would accept almost any type of job assignment in order to keep working for this organisation.					
2.5	I find that my values and this organisation's values are very similar.					
2.6	I am proud to tell others that I am part of this organisation.					
2.7	I could just as well be working for a different organisation as long as the type of work was similar.					
2.8	This organisation really inspires the very best in me in the way of job performance.					
2.9	It would take very little change in my present circumstances to cause me to leave this organisation.					
2.10	I am extremely glad that I chose this organisation to work for over others I was considering at the time I joined.					
2.11	There's not too much to be gained by sticking with this organisation indefinitely.					
2.12	Often I find it difficult to agree with this organisation's policies on important matters relating to its employees.					
2.13	I really care about the fate of this organisation.					
2.14	For me this is the best of all possible organisations for which to work.					
2.15	Deciding to work for this organisation was a definite mistake on my part.					

3 Supervisor Support

	Description	SD	D	N	A	SA
		1	2	3	4	5
3.1	Supervisors give employees the chance to try out their training on the job immediately.					
3.2	Supervisors at this location oppose the use of techniques learned in training that staff bring back to their jobs.					
3.3	Supervisors pay only lip service to the value and usefulness of training.					
3.4	Supervisors appreciate employees who do their jobs as taught in training.					
3.5	Supervisors help employees set realistic goals for performing their work as a result of their training.					
3.6	Supervisors commend employees publicly when they return from training.					
3.7	Supervisors don't tell employees whether they're doing their job correctly or incorrectly.					
3.8	Supervisors expect employees to use their training on the job.					
3.9	Supervisors meet regularly with employees to work on problems they may have in trying to use their training.					
3.10	Supervisors don't care if employees use their training, as long as they get the job done.					
3.11	Supervisors at this location do not notice employees who use their training.					
3.12	Supervisors set goals for new employees that encourage them to use their training.					
3.13	Supervisors pay no attention to how employees do their jobs.					
3.14	Supervisors at this location don't seem to care whether employees use their training.					
3.15	Supervisors set performance goals for new employees consistent with their training.					
3.16	Supervisors treat employees better when they use their training.					
3.17	Supervisors use the same terminology as used in training.					

3.18	Supervisors praise employees when they use their training.					
3.19	Supervisors at this location let new employees know that they are doing a good job when they use what they were taught.					
3.20	When supervisors tell staff how to do something, they do it the same way it was discussed at the training program.					
3.21	Supervisors know how staff are taught to do the job at the training program.					
3.22	When staff arrive back from the training program, supervisors encourage them to share what they have learned with other employees.					
3.23	Staff can count on getting answers from supervisors to questions about the application of training program methods on the job.					
3.24	Work at this location is designed so that staff can do the work the way suggested at the training program.					
3.25	Supervisors give poor performance reports to those who do the job the way it is taught at the training program.					

4 Opportunity to Use

	Description	SD	D	N	A	SA
		1	2	3	4	5
4.1	There is never enough time to do the job the way we are taught in training.					
4.2	Employees have so little chance to use some of the skills learned in training, that they probably couldn't perform them later.					
4.3	Job aids are available on the job to support what employees learned in training.					
4.4	Tools/equipment needed to do the job the way we were taught in training are usually available.					
4.5	When employees arrive from training, supervisors encourage them to share what they've learned with other employees.					
4.6	The materials needed by employees to use what they learned in training are readily available.					
4.7	Employees could do their jobs better if there weren't so many interruptions.					
4.8	The equipment here is the same as we are trained on in training.					
4.9	I will be able to try out this training on my job.					
4.10	There are enough human resources available to allow me to use skills acquired in training.					
4.11	At work, budget limitations will prevent me from using skills acquired in training.					
4.12	It will be hard to get materials and supplies I need to use the skills and knowledge learned in training.					
4.13	Work at this location is designed so that staff can do the work the way it was suggested in the training program.					
4.14	When staff fail to use the training methods they have learnt they can expect to be reprimanded.					
4.15	Staff could do a better job if someone told them what was going on.					
4.16	When staff use the ideas gained at the training program they find their jobs easier.					
4.17	Doing the job the way they were taught at the training program helps staff with their careers in this organisation.					

5 Perceived Transfer of Training

	Description	SD	D	N	A	SA
		1	2	3	4	5
5.1	Prior to the training I knew how the program was going to improve my performance					
5.2	Training has improved my job performance					
5.3	My confidence has increased since I undertook the training					
5.4	The training has helped me do my job better					
5.5	The outcomes of the training has helped me solve problems at work					
5.6	Using the training at work has helped me get higher performance ratings by my supervisor					
5.7	My colleagues at work have started to recognize me due to my improved performance					
5.8	My supervisor at work thinks I am more effective after I have done the training					
5.9	My supervisor is sure that the training has improved my performance					
5.10	I have been able to try the things I have learnt during training back at my workplace					
5.11	The activities and exercises the trainers used have helped my solve problems at work					
5.12	The equipment I have at work is similar to what I had during training.					
5.13	What was taught during training closely matches what I do on my job					
5.14	I get rewarded more due to my improved performance					
5.15	The overall team performance has improved due to the training					
5.16	I never doubted my ability to improve my performance due to the training					

6 Demographics

Please answer the following questions relating to your own situation by placing a tick (✓) in the box appropriate to your situation:

	Are you -	Male	<input type="checkbox"/>
		Female	<input type="checkbox"/>
	What is your age group?	Under 20	<input type="checkbox"/>
		20-24	<input type="checkbox"/>
		25-29	<input type="checkbox"/>
		30-34	<input type="checkbox"/>
		35-39	<input type="checkbox"/>
		40-44	<input type="checkbox"/>
		45-49	<input type="checkbox"/>
		50-54	<input type="checkbox"/>
		55-59	<input type="checkbox"/>
		60 and over	<input type="checkbox"/>
	What is your highest level of education?	Completed high school	<input type="checkbox"/>
		Completed certificate or diploma course	<input type="checkbox"/>
		Completed bachelor degree	<input type="checkbox"/>
		Completed post-graduate degree	<input type="checkbox"/>
	How many years have you been employed in the West Australian Public Sector (include this and other public sector agencies you might have worked in)?	Under 5 years	<input type="checkbox"/>
		5-10 years	<input type="checkbox"/>
		11-15 years	<input type="checkbox"/>
		16-20 years	<input type="checkbox"/>
		21-25 years	<input type="checkbox"/>
		Over 25 years	<input type="checkbox"/>

Thank you for completing this questionnaire.

Appendix II – Item Reliability for all Independent Variables

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)				
		Mean	Std Dev	Cases
1.	MOTIV1	2.8125	1.0298	32.0
2.	MOTIV2	2.9688	.8975	32.0
3.	MOTIV3	2.7813	1.3133	32.0
4.	MOTIV4	3.1250	.9755	32.0
5.	MOTIV5	2.4375	1.1341	32.0
6.	MOTIV6	3.3125	.9980	32.0
7.	MOTIV7	3.4375	1.0453	32.0
8.	MOTIV8	3.0625	1.2165	32.0
9.	MOTIV9	3.6250	1.0080	32.0
10.	MOTIV10	2.8438	.7666	32.0
11.	MOTIV11	3.1875	.9651	32.0
12.	MOTIV12	2.9375	1.1053	32.0
13.	MOTIV13	2.6250	.9755	32.0
14.	ORGC0M1	3.8750	.7071	32.0
15.	ORGC0M2	4.1875	.5923	32.0
16.	ORGC0M3	3.9688	1.1212	32.0
17.	ORGC0M4	2.8125	.9311	32.0
18.	ORGC0M5	3.7188	.4568	32.0
19.	ORGC0M6	4.2188	.6082	32.0
20.	ORGC0M7	3.2500	.8799	32.0
21.	ORGC0M8	3.4688	.7177	32.0
22.	ORGC0M9	3.7188	.9914	32.0
23.	ORGC0M10	4.1250	.6091	32.0
24.	ORGC0M11	3.9063	.8561	32.0
25.	ORGC0M12	3.5313	.8026	32.0
26.	ORGC0M13	4.1875	.7803	32.0
27.	ORGC0M14	3.5938	.8747	32.0
28.	ORGC0M15	4.4063	.6652	32.0
29.	SVRSUP1	3.7188	.8126	32.0
30.	SVRSUP2	4.0625	.4353	32.0
31.	SVRSUP3	4.0625	.9483	32.0
32.	SVRSUP4	3.6563	.6016	32.0
33.	SVRSUP5	3.6250	.6599	32.0
34.	SVRSUP6	2.6563	.7874	32.0
35.	SVRSUP7	3.5000	1.1072	32.0
36.	SVRSUP8	3.7813	.4908	32.0
37.	SVRSUP9	3.0938	.8175	32.0
38.	SVRSUP10	3.1563	.8466	32.0
39.	SVRSUP11	3.4688	.7177	32.0
40.	SVRSUP12	3.4375	.7156	32.0
41.	SVRSUP13	4.1250	.4212	32.0
42.	SVRSUP14	3.8438	.4479	32.0
43.	SVRSUP15	3.6250	.8328	32.0
44.	SVRSUP16	2.8125	.6445	32.0
45.	SVRSUP17	2.8125	.6445	32.0
46.	SVRSUP18	3.4688	.5671	32.0
47.	SVRSUP19	3.4375	.7594	32.0
48.	SVRSUP20	3.2813	.6832	32.0
49.	SVRSUP21	3.0313	.7399	32.0
50.	SVRSUP22	3.7188	.6832	32.0
51.	SVRSUP23	3.5000	.7620	32.0
52.	SVRSUP24	3.1875	.6927	32.0
53.	SVRSUP25	3.8125	.7378	32.0
54.	OPPUSE1	3.4688	.7177	32.0
55.	OPPUSE2	3.3125	.9311	32.0

56.	OPPUSE3	3.4688	.9153	32.0
57.	OPPUSE4	3.9375	.5644	32.0
58.	OPPUSE5	3.7813	.7064	32.0
59.	OPPUSE6	3.7188	.6832	32.0
60.	OPPUSE7	2.5938	.8747	32.0
61.	OPPUSE8	3.8438	.5149	32.0
62.	OPPUSE9	4.1875	.3966	32.0
63.	OPPUSE10	3.4375	.7594	32.0
64.	OPPUSE11	3.5625	.7594	32.0
65.	OPPUSE12	3.5313	.8418	32.0
66.	OPPUSE13	3.4063	.7560	32.0
67.	OPPUSE14	2.2188	.4908	32.0
68.	OPPUSE15	2.8750	1.0395	32.0
69.	OPPUSE16	3.8125	.4709	32.0
70.	OPPUSE17	3.6250	.7513	32.0
Reliability Coefficients 70 items				
Alpha = .8457				

Appendix III – Portion of Analysis

Regression Analysis – Dependent Variable – Transfer Performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.647	.419	.249	3.0799

a Predictors: (Constant), Use of Skill, Work Pressure, Work Satisfaction, Organisation Value, Supervisor Knowledge & Support, Organisation Loyalty, Job Aids & Resources

b Dependent Variable: TRANSFER PERFORMANCE

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	164.053	7	23.436	2.471	.046
	Residual	227.665	24	9.486		
	Total	391.719	31			

a Predictors: (Constant), Use of Skill, Work Pressure, Work Satisfaction, Organisation Value, Supervisor Knowledge & Support, Organisation Loyalty, Job Aids & Resources

b Dependent Variable: TRANSFER PERFORMANCE

Appendix IV – Portion of Analysis

Regression Analysis – Dependent Variable – Recognition and Acceptance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.580	.336	.142	2.1429

a Predictors: (Constant), Use of Skill, Work Pressure, Work Satisfaction, Organisation Value, Supervisor Knowledge & Support, Organisation Loyalty, Job Aids & Resources

b Dependent Variable: RECOGNITION AND ACCEPTANCE

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	55.787	7	7.970	1.735	.148
	Residual	110.213	24	4.592		
	Total	166.000	31			

a Predictors: (Constant), Use of Skill, Work Pressure, Work Satisfaction, Organisation Value, Supervisor Knowledge & Support, Organisation Loyalty, Job Aids & Resources

b Dependent Variable: RECOGNITION AND ACCEPTANCE