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COMMITMENT OF KNOWLEDGE WORKERS TO THEIR ORGANIZATIONS: AN EVALUATION OF ANTECEDENTS, LEVELS AND BEHAVIORAL OUTCOMES

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ABSTRACT

Globalisation has broaden the horizon of operations for many corporate organisations or business firms or public organisations which aspire to acquaint themselves with other global players. This is where the commitment and competency of their workforce are of paramount important that the management has to consider them seriously. It is vital as their competitiveness is contingent on this precious asset, by virtue of its exclusiveness, where 'people' cannot be copied easily.

The 'people' is and would always be at the centre stage, particularly under the present construct of the emerging knowledge-based economies around the globe. The performance of the leading economies of the world, like the US, UK, Japan, Germany and other emerging economies in Asia, such as China and India will be very much depending on the merit and ability of their workforce to surge the challenges ahead. In this instance, knowledge workers' expertise, contributions and commitments are extremely important. They have to be nurtured, managed and taken care of their issues correctly and adequately.

Hence, it is important for organizations to know the special needs and motivations of knowledge workers if they are to successfully utilize their skills and retain them in the organization. This paper examined the influence of selected antecedents (professional commitment, job autonomy, traditional retention strategies, career planning, job opportunity, job satisfaction and learning opportunity) on three types of organizational commitment: affective, continuance and normative.

For this purpose, a total number of 350 questionnaires were distributed to computer and IT specialists who are serving in the organizations that spearheaded computer and IT research and development in Malaysia. Only 191 questionnaires were returned (a response rate of 55 percent) and used for further analyses.

Correlation analysis indicated that affective commitment was significantly correlated with career planning (negative), traditional retention strategies (negative) and learning opportunity (negative), while continuance and normative commitments were not correlated with any of the antecedents. Regression analyses indicated that affective commitment was positively affected by job satisfaction, and continuance commitment by traditional retention strategies (positive), career planning and (positive) and job autonomy (negative). Normative commitment was only positively affected by job satisfaction. The intention to leave was significantly and negatively correlated with all forms of the organizational commitment. The report also discussed implications of the study to human resource management practices and future direction of research in this area.

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CHAPTER ONE

BACKGROUND OF THE STUDY

1.0 Introduction

It is widely claimed by the governments, industrialists, academics, and consultants that management of knowledge is essential to organizations/business firms, especially now in the era of knowledge-based, post-industrial economy. In this new and dynamic nature of business environment firms are competing for their leading edge through their human assets.   As such, firms are increasingly dependent on workers who possess the needed knowledge, called knowledge workers. This implies that organizations must address the needs and at the same time understand the idiosyncrasies of knowledge workers adequately and accurately.   It is vital, particularly in ascertaining the process of retaining and utilizing the expertise needed towards achieving and sustaining the competitive advantage.   However, many companies are facing problems in managing their knowledge workers. Companies which are heavily relying on traditional human resource management (HRM) approaches may not be able to satisfy the expectations of knowledge workers. Hence, exploring new HRM initiatives should now be seen as an appropriate move to attracting and retaining this most valuable asset for contemporary organizations.

1.1   Defining the Knowledge Workers

Who are the knowledge workers? Scarbrough (1999, p.7) defined knowledge workers based on the nature of their works, that is *"work which is relatively unstructured and organizationally contingent, and which thus reflects the changing demands of organizations more than occupationally defined norms and practices".*   The above

definition includes wide categories of skilled and specialized individuals, although normal usage is narrowly restricted to people in the scientific, technological, computer and engineering fields. For example, company analysts in financial firms also qualify as knowledge workers because they work using their professional knowledge about a specialized industry. They also have the responsibility of researching and analyzing the trends in a single industry, such as the automotive, telecommunications or banking industries (Kubo & Saka, 2002). For the purpose of this research, knowledge workers are defined as employees who have specialist knowledge and are involved in activities of research, applied research, development works leading to new products or processes, and consultancy works based on specialist knowledge (Kinnear & Sutherland, 2000).

Knowledge workers are an important component for contemporary organizations, regardless of whether they work in knowledge intensive organizations or not. This is because most organizations begin to use new communication and information technologies more often now. And resulting from the rapid introduction of these modern technologies in the workplace, then arising of new technological and management problems are phenomenal. In this instance, management would rely on professional advice from those who are expert and specialist in the field for the efficient problem solving and the provision of tailored services. In other words, the service of the knowledge workers is of paramount important for the smooth function of their respective organizations. Therefore, issues relating to the loyalty of knowledge workers and minimizing their exit are critical management problems (Alvesson, 2000). Since knowledge workers will form a major component, perhaps a majority of the US and other advanced economies in the near future

(Davenport, 2002), it is therefore wise for organizations to have an in-depth knowledge of their job and organizational behaviors for the effective utilization of their invaluable resources.

1.2   Knowledge Workers' Commitment to the Organization

As organizations begin to realize that human resources are their source for competitive advantage and therefore need to retain and reduce their turnover, research on organizational commitment has gained importance (Colbert & Kwon, 2000). The determining factors related to organizational commitment may be useful on several levels. First, is on the influence of organizational commitment on the intention to leave one's job and to the intention to search for new job alternatives, and secondly is the actual turnover behavior. Knowledge of the antecedents of organizational commitment will enable organizations to manage these withdrawal behaviors better.

For the knowledge workers, however, we know little about their commitment and work attitudes, particularly those employed in large corporations. Are knowledge workers committed more to their profession than to their organization? Are they a disloyal lot? These questions are in need of urgent answers as the management of knowledge workers' commitment has become a key management concern today. This is because, loss of knowledge workers to an organization means loss of both tangible and intangible knowledge and potential competitive advantage. This research aims to assess the level of commitment and the influence of certain selected human resource management practices on knowledge workers' commitment to an organization, and how commitment affects their intention to leave the organization.

1.3 Research on Organizational Commitment

Earlier research on organizational commitment used the Organizational Commitment Questionnaire (OCQ), an instrument developed by Porter et al. (1974). However, OCQ measured a singular construct of organizational commitment, although it consists of three dimensions: loyalty to the organization, willingness to exert effort on behalf of the organization, and desire to maintain membership with an organization. Owing to the singular nature of the commitment construct, research results using OCQ were not consistent and disappointing (Allen & Meyer, 1990). Meanwhile the search for a better construct definition and better research result continued.

One notable recent attempt was by Meyer & Allen (1991) who have presented compelling evidence to suggest that commitment comprises three distinct components, not one: affective, normative, and continuance commitment. Affective commitment describes the emotional attachment of an employee towards his/her organization. Normative commitment describes the feelings of obligation an employee has to remain with an organization. Finally, continuance commitment develops 'as employees recognize that they have accumulated investments…. that would be lost if they were to leave the organization or as they recognize that the availability of comparable alternatives is limited' (Meyer *et al,* 1993, p.539). With all the three types of commitment, an employee is 'committed' to the organization but for different reasons, and accordingly, each type of commitment produces different consequences.

For example, affective commitment is reportedly associated with higher productivity (Meyer *et al*, 1989), more positive work attitudes (Allen & Meyer, 1996) and a

greater likelihood of engaging in organizational citizenship (Meyer & Allen, 1991). Similar finding emerge for normative commitment. In contrast, continuance commitment has very low or negative relationship with performance indicators. Studies have found either no relationship between continuance commitment and performance, or a negative one (e.g Meyer *et al*, 1989). In fact, Meyer *et al*. (1993) found that nurses with strong continuance commitment were more likely to handle a dissatisfying situation by passively withdrawing rather than by attempting to change things. In this instance, individuals who score high on continuance commitment choose to stay at their job because they only have few alternatives, and probably not wise to leave their present organization. It is not surprising that they may also have low job satisfaction. However, like affective commitment, continuance commitment is also associated with lower turnover (Finegan, 2000).

From a practical standpoint, identifying different forms of commitment allows us to decompose the mixed variables and to identify the specific antecedents associated with each unique form of commitment (Mowday, 1998). For example, the management practices leading to continuance commitment (piece-rate payment system) may not be important for the development of either affective or normative commitment. In addition, organizations that develop strong values and cultures may produce a different bond with their employees than organizations using market-based approaches to binding their employees. Meyer and Allen (1991) by proposing and developing a multidimensional form of organizational commitment has contributed significant insights into the most likely processes leading to higher levels of employee commitment. However, the research evidence to date using the multidimensional form of organizational commitment remains limited. Much more research using the

multidimensional form of organizational commitment is needed, and especially longitudinal in nature, if the processes leading to commitment are to become better understood (Mowday, 1998).

1.4 Objective of the study

The objective of the present study is to address the issues of knowledge workers' commitment to their organization and their profession as discussed in the preceding section. The specific objectives of the study are:

a. To assess the levels of knowledge workers' commitment to their organization and profession and the relationship between these two forms of commitment.

b. To assess the influence of selected human resource management practices (antecedents) of traditional retention approach, learning opportunities, job autonomy, career planning, perceived job alternatives and a correlate (job satisfaction) on affective, continuance and normative commitments.

c. To assess the relationship between affective, continuance and normative commitments and knowledge workers' intention to leave the organization.

1.5 Organization of the Report

This report consists of five chapters. **Chapter One** which discusses background of the study introduces the concept of the knowledge workers and their commitment to the organization, research on the organizational commitment and the objectives of this study. **Chapter Two** provides quite a comprehensive survey of the literature on the knowledge workers, the concept of the organizational commitment, and research studies on its antecedents and outcomes. **Chapter Three** presents the research methodology used in this study. The chapter discusses the survey instrument used, technique of data collection, choice of the responding organizations and the statistical

analyses used in the study. **Chapter Four** presents the result of the study and discussion on the results. **Chapter Five** presents the summary of the results, implications of the findings to the human resource management, limitations of the study and future direction of research in the area. The final section of the report consists of the references and appendices.

CHAPTER TWO

LITERATURE REVIEW

Organizations are increasingly dependent on knowledge workers as they compete through their employees' know-how. This implies that organizations must address the special needs and motivations of this group of workers if they are to successfully exploit their skills and to retain their primary source of competitive advantage. A firm's competitive advantage comes from the value it can develop for its customers-values that emanate from the knowledge of its employees (Lahti & Beyerlein, 2000). As Tobin (1998) pointed out, employee knowledge really is what helps distinguish a firm from its competitor. It determines a firm's competitive edge.

In a similar vein, Luthans and Stajkovic (1999) have also pointed out the critical role of human assets in leading the companies ahead of their competitors. This is not to say that people are the answer to everything, or that areas such as information technology are not important.   However, information technology may not be sufficient in sustaining competitive advantage. Technology is easily obtained and copied, while an organization's human assets cannot be as easily copied or perhaps not all (Smith & Rupp, 2002). Rapidly advancing technology makes human resources even more critical to organizational success. Perhaps the real challenge is to find ways to manage human resources as effectively as possible in order to attain a world-class performance (Luthans and Stajkovic, 1999).

As organizations begin to recognize that human resources are their source for competitive advantage, research on organizational commitment has gained importance (Colbert & Kwon, 2000). Determining factors related to organizational

commitment may be useful on several levels. First, is on the influence of organizational commitment on the intention to leave one's job and to the intention to search for job alternatives, and secondly is the actual turnover behavior. Knowledge of the antecedents of organizational commitment will enable organizations to manage these withdrawal behaviors better.

The link between organizational commitment and various effectiveness indicators (such as turnover and absenteeism) are well established (Mathieu and Zajac, 1990). The literature suggests that individuals who are organizationally committed are less likely to be absent and to voluntarily leave their organizations. Following from this, it would seem that the implications for policy choice are relatively straightforward: organizations should consider the determinants of organizational commitment and ensure that these issues be addressed in their human resource (HR) strategies. Indeed there is a growing body of literature highlighting the integral role of organizational commitment in the formulation of HR strategies and policies (Becker et al., 1996). However recent research has highlighted the problem of conceptual and operational ambiguities in the organizational commitment literature. This raises the question of whether it is appropriate to apply blanket HR policies to obtain organizational commitment without consideration of the consequences for promoting different forms of commitment (Iverson & Buttigieg, 1999).

There is also a well- documented literature on the alleged rivalry between occupations and organizations as the bases of employee loyalty in the case of traditional professions like lawyers, nurses, doctors and engineers. Likewise, there is also a well- documented literature on the relationship between commitment and work effort

for conventional professionals. However, we know little about the commitment and work attitudes of knowledge workers, particularly those employed in large corporations. The management of knowledge workers' commitment has become a key management concern as intellectual and human capital become more important to the overall functioning of the corporation in providing services to their clients (May, Korzynski & Frenkel, 2002).

Organizations, which rely on knowledge workers in running their businesses need to have an establish methods of gaining their commitment and at the same time be able to retain them to work for / with their organizations. This is not an easy task, especially now where competition is taking place at a much rapid pace. Loss of knowledge workers to an organization means loss of both tangible and intangible knowledge and potential competitive advantage. This research aims to establish what factors influence knowledge workers' commitment to an organization, and how commitment influences employees' intention to leave the organization. The study investigated all the three forms of organizational commitment: affective, continuance and normative.

The following section begins with a discussion of the knowledge workers, their traits and behavior. Then the subject of commitment, its conceptualization, antecedents and consequences will be dealt with more rigorously in the remaining of the section.

2.1. Definition of Knowledge Workers

Knowledge workers are difficult to define and count, but they are undoubtedly a major component, perhaps a majority of the workforce in the US and other advanced

economies (Davenport, 2002). The knowledge worker population is a unique one and Drucker (2001) described knowledge workers as employees who carry knowledge as a powerful resource, which they rather than the organization, owned it. They now account for about one-third of the American workforce, outnumbering factory workers by two to one. In another 20 years or so, knowledge workers would likely make up close to two-fifths of the workforce of all rich countries.

On an organizational level, there has also been an increased interest in applying the terms, knowledge work and knowledge workers in understanding contemporary organizational work life. In this context, knowledge work are activities relating to problem solving within non-routine tasks. Such activities require creativity and a sense of independence in the individual employee (Elkjaer, 2000). And consequently, knowledge workers will often characterize with a higher level of education and work in areas where they constitute a firm's key assets.

Human competencies are the main assets in a company of knowledge workers, which Alvesson (2000) calls a knowledge intensive firm. Such firms are often associated with companies within the consulting business, e.g. law and accountancy, management, engineering and computer consultancy. They also include advertising agencies, R&D units, and other high-tech companies.

Davenport (2002; p.3) explained knowledge workers as follows: *"I'd define them as a people with a high degree of education or expertise whose work primarily involves the creation, distribution or application of knowledge. Some knowledge workers have high levels of autonomy and discretion in how they do their work; others have more*

structured roles. Their activities, which include R&D, marketing, engineering, planning, customer service and management, are critical to innovation and growth".

The nature of knowledge workers' work is complex and involved much problem-solving and considerable customization of services. Employees often have to draw on theoretical and specialized knowledge and relatively high level of analytical skills. They used these skills and knowledge to diagnose and resolve specific work problems or give appropriate and specialized advises to customers (May, Korzynski & Frenkel, 2002).

Compared to professionals, knowledge workers do not place the same emphasis on typical professional features, such as code of ethics and membership of professional association. Many knowledge workers do not belong to any of the traditional professions. They work in occupations that require high level of education and competencies as the professionals. However, unlike the professionals, they do not necessarily belong to any professional body. Furthermore, knowledge workers will often rely heavily on self-determination and require extensive communications for co-ordination and problem-solving purposes (Elkjaer, 2000).

2.2 Characteristics of Knowledge Workers

The young knowledge workers have the characteristics of Generation-X employees. Generation-X workers (Xers) are different from the baby boomers, a generation before them. Generation Xers do not seek life-long employment, but they do seek life-long learning. They seek employability over employment. They value career self-reliance (Elsdon and Iyer, 1999).

Xers with high human capital, technical skills, education, learning and experience are valuable to organizations, and they are in great demand (Zemke, 2000). Those most in demand, the new "gold-collar workers", are educated, smart, creative, computer literate and equipped with portable skills (Munk, 1998). They regard themselves as free agents, and thus are perceived by life-long employees of earlier generation as being disloyal, arrogant, unfocused, unwilling to pay dues and not amenable to deferred gratification (Tulgan, 1996).

Knowledge workers of all kinds tend to identify themselves with their knowledge. They may be proud of the organization they work for, be it a company, a university or a government agency. They feel that they work at the organization, but they do not belong to it. Most of them probably feel that they have more in common with someone who practices the same profession in another institution than with their colleagues at their own institution who work in different knowledge areas (Drucker, 2001).

Knowledge workers are highly mobile within their specialized field. They think nothing of moving from one university, one company or one country to another, as long as they stay within the same field of knowledge. Knowledge workers may have an attachment to an organization and feel comfortable with it, but they primarily place their allegiances to their specialized branch of knowledge. Knowledge workers have careers which are external to an organization through years of education, rather than internal through training and career schemes. Their loyalty is therefore to professions, networks and peers rather than to the organization and its career systems.

2.3   Managing the Knowledge Workers

The management of knowledge workers tends to be different from the management of ordinary personnel in some important ways. In many ways, knowledge workers form the ideal employees; the employees that managements dream in term of work motivation and compliance (Alvesson, 2000). These employees, working at home or on sites away from their unit, with minimal supervision, often work fifty to sixty hours a week. Ironically, they do not see working long hours as problematic.

The role of a manager has also changed. A manager is no longer seen as the leading expert, rather as facilitator who gets the best from the people he/ she manages. In the sphere of knowledge work, where employees are not interchangeable and each is a unique person with unique skills and ways of doing work, the leader must think harder about motivating and rewarding them (Brelade & Harman, 2003). Failure to effectively reward and motivate them will often lead to a much bigger flaws which entails the inability to retain this increasingly mobile workforce that will quickly leave the organization if dissatisfied.

In terms of rewards, a sophisticated employee, like the sophisticated customer, will seek a balance between instant rewards and rewards that are delayed (Brelade & Harman, 2003). The most desired and effective balance will change at different times in a person's working life. A reward strategy must take this into account and should include financial and non-financial elements such as (Brelade & Harman, 2003):

- Praise and recognition;
- Bonuses and one-off payments;
- Opportunities for career developments;

- Opportunities for training and development;

- Share options, performance-related pay or other option."

Many organizations try to win loyalty of their employees through employee ownership and retention programmes. Managers who try to build loyalty through employee retention and employee ownership will realize that this approach is insufficient to build loyalty. Employee ownership programmes tend to focus on employee self-fulfillment rather than earning and retaining loyalty to the values, purposes of the organization. Furthermore, this kind of effort is like an attempt to buy something rather than earning it. A culture that wins loyalty is built upon high values and right purposes, by expecting employees to live these high values and right purposes, and by rewarding them when they do and confronting them when they do not.

Rewards, reinforce and transmit the culture of an organization, and that an ideal knowledge-enable culture emphasizes the following cultural elements (Brelade & Harman, 2003):

- Gives recognition and makes employees feel valued;

- Offers high levels of involvement in decisions;

- Builds variety into jobs;

- Makes efforts to make work stimulating and meaningful;

- Has minimal but effective bureaucracy;

- Promotes co-operation rather than competition

While individual's needs are finite and fixed, satisfiers change over time depending on the environment and the circumstances. This supports the view that knowledge workers may not necessarily have different needs, but may respond to different satisfiers than those of a past era (Kinnear & Sutherland, 2000). In the past, the essential satisfiers of achievement, recognition, work itself, responsibility and advancement (Herzberg et al., 1959) have been the focus of many of management practices in hierarchically structured organizations, where they are the primary indicators of success. However, some of the less essential satisfiers proposed by Herzberg et al. (1959), such as personal growth are now becoming more essential for knowledge workers (Kinnear & Sutherland, 2000).

In terms of the employer-employee relationship, neither management nor employees expect a long-term relationship. Knowledge workers' primary interest is the marketability of their own skills and knowledge in the external employment market, instead of the well being of the organization (May, Korzynski & Frenkel, 2002). Their values and goals diverge from those of their employing organization. Their loyalty to the organization depends on the extent to which their job expectations meet the organization's job description, and on the options available to them in the external employment market. As occupations rather than the organization form the base of their expertise, status, and economic advantage, knowledge workers will be more committed to their occupation than to the organization. On the other hand, as the knowledge workers' expertise and status are also based on both their theoretical knowledge (specific to the occupation) and contextual knowledge (embedded in the organization), they will, therefore, be committed to both their occupation and the organization (May et al. (2002). The dual-dependent relationship between them and

organization means that the two types of commitment will relate positively to each other. However, the association may be weak as knowledge workers will try to reduce their dependence on the organization in order to enhance their personal standing in the external employment market and maximizing their work autonomy (May et al. (2002).

One of the organizational forms that can result from this dual-dependent relationship between the knowledge workers and the corporation is the creation of an enclave within the organization. In this organization form, management grants a high degree of autonomy to knowledge workers in their work process, in order to satisfy knowledge workers' desire for work autonomy. Structurally, this form is like an independent section consisting of specialist teams within the organization (Riain, 2000). Within this specialist team, co-worker relationships amongst knowledge workers are close and interdependent. This kind of close relationship arises because of knowledge workers need to supplement each other's expertise when they apply their theoretical knowledge to analyze complex work problems (Riain, 2000).

2.4   Organizational Commitment

To determine factors related to organizational commitment, the concept of organizational commitment must be clearly defined. Porter et al.'s (1974) definition was widely used in commitment research until a few years ago. In this definition, three factors of organizational commitment (OC) were identified: a strong belief in and acceptance of the organization's goal and values, a willingness to exert considerable effort on behalf of the organization, and a strong desire to remain in the

organization.   Based on this definition, a fifteen-item OC questionnaire was developed to measure OC.

Porter et al. (1974) conceptualized OC as a singular construct comprised of multiple attitudes on the part of an organization's employees, such as loyalty to the organization, willingness to exert effort on behalf of the organization, and desire to maintain membership with an organization. Recent research in the industrial/organizational psychology and organizational behavior literatures, however, has identified the existence of multiple dimensions of OC and demonstrated that these dimensions have different relationships with important consequences, such as job satisfaction and turnover intentions (Iverson & Buttigieg 1999; Ketchand & Strawser, 2001).

The multidimensional approach is the most recent attempt to re-conceptualize OC. It assumes that OC does not develop simply through emotional attachment, perceived costs or moral obligation, but through the interplay of all these three components. Meyer and Allen (1984) introduced the concept of continuance commitment based on Becker's side-bet theory, alongside the concept of affective commitment that was dominating the commitment studies in the seventies and the eighties.   Allen and Meyer (1990) again expanded the set of OC dimensions developed in 1984 to include normative commitment as a third dimension of OC.   These researchers suggested that the net sum of a person's commitment to the organization, therefore, reflects each of these separable psychological states (affective attachment, perceived costs and obligation) (Allen & Meyer, 1990).   Since that time the multidimensional approach

has been gaining support —suggesting that it could improve the disappointing and inconsistent results often reported for other OC researches.

Allen and Meyer (1990) defined affective commitment as an employee's emotional attachment to, identification with, and involvement in the organization; continuance commitment sometimes termed calculative commitment (Mathieu and Zajac, 1990), as commitment based on the costs that employees associated with leaving the organization; and normative commitment as an employee's feelings of obligation to remain with the organization. In contrast to affective and continuance commitment, normative commitment focuses on the right or moral thing to do (Weiner, 1982, p.421), and employees' obligation and/or moral attachment to the organization. The obligation and/ or moral attachment evolved from employees' socialization with the organization's goals and values (Allen and Meyer, 1990).

Allen & Meyer (1990) argued that previous research had often confused attitudinal and behavioral commitments and therefore a rigorous test of Becker's side-bet theory was not possible because of these conceptual ambiguities. Accordingly, Meyer and Allen developed alternative scales for affective and continuance commitment, as well as a third scale designed to measure normative commitment as a way to overcome earlier ambiguities. These researchers found normative commitment as distinct from affective commitment, although there was little support for its existence in the literature.

The multidimensional nature of organizational commitment has distinct policy implications for human resource management (HRM). In particular, that employees

with strong affective commitment remain because they feel they want to, those with strong normative commitment remain because they feel they ought to, and those with strong continuance commitment remain because they feel they need to (Meyer et al., 1993), indicate that employees have different reasons for remaining in an organization.   As consequence of the differences in motives, these forms of commitment should have distinct outcomes.   That is, not all types of commitment may be beneficial for organizations (Somers, 1995).   Therefore, a greater understanding of the types of commitment with respect to their antecedents (i.e. HR policies) and organizational outcomes (e.g. effectiveness) is required.

2.5   Antecedents of Organizational Commitment

Theoretically, OC is to result from two broad types of factors: personal and situational factors. Personal factors represent the characteristics and experiences of individuals before their entry into the organization. In contrast, situational (or organizational) factors originate within the organization and include elements of the work environment and the nature of the experiences encountered by individuals during the term of their employment with the organization.

The literature indicates significant relationships between personal and situational factors and OC, yet situational factors (such as leader behaviors, role ambiguity, role conflict, the degree of organization centralization, and the extent of leader communications) appear to have stronger influences (Cohen, 1993). For the personal factors, positive relationships between age and tenure and (1) affective commitment, (2) continuance commitment, and (3) low-alternatives and high-sacrifice commitment were reported (Dunham et al., 1994; Hackett et al., 1994; Meyer et al., 1993). Age,

number of dependents, job level, and career aspirations appear to influence positively the affective commitment. In addition to the positive relationships listed above, these studies observed negative relationships between affective commitment and both marital status and cognitive ability. The study also indicated that males posses higher levels of affective commitment than females.

Tenure represents investments or sunk costs in the organization. Mathieu and Zajac (1990) assert that the number of years spent in the organization increases employees' psychological attachment, as well as the internalization of norms. Tenure therefore should exhibit positive relations with continuance commitment.

Despite the differences between males and females reported above, the relationship between gender and organizational commitment has remained unclear (Ngo & Tsang, 1998). The literature reported mix results on the relationship between gender and affective commitment in previous studies. For example, Mowday, Porter and Steers (1982), and Mathieu and Zajac (1990) suggested that women are more affectively committed to the organization as compared to men. On the other hand, some researchers reported that men displayed a higher level of commitment (Aranya, Kushnir & Valency, 1986; Marsden, Kalleberg & Cook, 1993). In a meta-analysis, Aven, Parker and McEvoy (1993) found that gender and affective commitment were unrelated. Furthermore, according to Ngo & Tsang (1998), no empirical research has directly addressed the issue of gender differences in continuance commitment (another major dimension of organizational commitment that is relatively under-researched).

Previous research found the situational antecedents that reflect employees' comfort and competence in their roles are more highly related to affective than to continuance commitment. These include such factors as positive job characteristics (such as job autonomy and feedback) and work experiences (Ko et al., 1997; Dunham et al., 1994). In contrast, factors that "bind" the employee to the organization (such as level of organization investment, irrevocability of the job choice, and difficulty of finding alternative jobs) influence continuance commitment more than the affective commitment (Meyer et al., 1991; Allen and Meyer 1990).

OC also has correlates. Previous meta-analyses have identified significant relationships between OC and five correlates (job satisfaction, job involvement, stress, occupational and professional commitments). The primary difference between antecedents and correlates is their temporal development in relation to OC. That is, the development of antecedents precedes the development of OC, while correlates developed at approximately the same time, or in conjunction with, the development of OC (Ketchand & Strawser, 2001). The strongest and most consistent relationship noted by the literature is a significant, positive relationship between OC and job satisfaction. Mathieu and Zajac (1990) determined an average corrected correlation between OC and job satisfaction of 0.53 while the correlations of other correlates, although significant, never exceeded that of job satisfaction. The above researchers also reported higher correlations between job satisfaction and job involvement, and affective commitment than the correlations between these correlates and continuance commitment. However, research results after Mathieu and Zajac's (1990) meta-analysis, showed positive and significant relationship between job satisfaction and

career satisfaction and affective commitment, but negative relationship with continuance commitment (Ketchand & Strawser, 2001).

The following section discusses the specific antecedents related to the present research, and especially relationships with respect to each dimension of OC: affective, continuance and normative commitments.

Job related variables: Allen and Meyer (1990) argue that the most important antecedents of affective commitment are job related, of which rewards are the most important. Employing reward-cost paradigm (Farrell and Rusbults, 1981), rewards and costs are viewed as the discrepancy between the extent to which individuals value certain job properties and what job properties they actually receive on the job (rewards or costs). If individuals value and obtain a specific job property (e.g. autonomy), this would be designated a reward. Rewards include such aspects as autonomy, co-worker and supervisory support, job security, promotional opportunities, distributive justice, management receptiveness, and public appreciation, whereas job hazards and stress are examples of costs (Iverson, 1996). Affective commitment increases as the rewards of the job increase and the costs decrease. There is, however, limited research on the impact of these factors on normative and continuance commitment. Nonetheless it is expected that the extrinsic job rewards and costs that are perceived to result from the organization would respectively increase and decrease a moral obligation to reciprocate to the organization. Conversely, employees may perceive intrinsic rewards and costs as derived from inherent aspects of the job, and therefore will display little relationship with normative commitment (Iverson & Buttigieg, 1999). Similarly, with the exception of perceived investments such as pay, job security and promotional opportunities, other

job related variables (which are not considered as a sunk cost) are not be related to continuance commitment.

Job opportunities: Job opportunities mean the availability of alternative jobs outside the organization, and these will have negative effects on affective and continuance commitment (Iverson & Buttigieg, 1999). Employees' loyalty to the organization and perceived costs associated with leaving the organization will be low when many job alternatives exist (Iverson & Roy, 1994). In terms of normative commitment, the moral obligation to remain will weaken when alternative job opportunities exist.

Perceived job alternatives also refer to workers' belief that they can find a comparable job in another organization. Theory suggests that perceived job alternatives have direct effect on OC, and a mediated effect on turnover intention (Finegan, 2000). When employees perceived that there are many employment alternatives, they will express lower levels of OC and, consequently, higher levels of turnover intention. In addition, research in information systems (IS) and related field has found that perceived job alternatives have a direct effect on turnover intention (Thatcher, Stephina & Boyle, 2002).

Professional commitment: Some theorists have highlighted the apparent conflicts between organizational loyalty and professional commitment for professional employees such as researchers and college professors (Jauch, Glueck & Osborn, 1978). Steele (1969) has studied the practitioners' concern for this conflict and found an accommodation of their two orientations. Traditional analyses of organizational loyalty and professional commitment explicitly assumed that the individual had to choose one over the other.   Since knowledge workers are inclined to have careers

external to the organization, through years of education rather than internal through training and career schemes, their loyalty is therefore to their professions, networks and peers rather than to the organization and its career systems. Similarly, Reichers (1985) suggested that commitment of professionals is often to multiple groups within the organization rather than the organization itself. In the case of knowledge workers, therefore commitment would be more likely towards their profession and professional peers (Kinnear & Sutherland, 2000).

More recent investigations however indicate that organizational loyalty and professional commitment may be essentially independent such that individuals may be high on organizational loyalty and professional commitment, low on both, or high on one or the other (Jauch, Glueck & Osborn, 1978). Wallace (1995) also reported the results of a study on professionals and knowledge-based organizations and found no serious contradictions between commitment toward profession and commitment toward organization. Similarly, Swailes (2000) based on responses from professional employees (chemical researchers and accountant) also reported no conflict between commitment toward profession and organization, and made the following conclusion (p. 192):

"…It would seem beneficial for organizations to develop feelings of professionalism among the workforce as there was no evidence that high professionalism detracts from commitment to the organization as the classical local versus cosmopolitan view of professionals in organizations maintain…"

Professionals who are committed to their profession will also show high commitment to their organization. If organizations can offer work opportunities that meet the professionals expectation and work objectives, they will remain loyal and be committed to their organization (Alvesson, 2000). Herriot and Pemberton (1995, p. 46) made similar observations and concluded that:

"...Professionals don't lack organizational commitment. They are as loyal as the next person, provided that the organization honor their side of the bargain they have struck with them".

Job autonomy: Research findings indicate that knowledge workers require considerable autonomy to carry out their tasks. This is in line with the arguments in the literature that knowledge workers enjoy greater power and autonomy at the workplace because their expertise is both more difficult to control and more marketable to other employers (Kubo & Saka, 2002). In addition to autonomy and discretion in their work environment, knowledge workers also expect other colleagues to treat them as colleagues rather than subordinates to acknowledge their independence (Kinnear & Sutherland, 2000).

Traditional retention practices: Organizations have traditionally attempted to retain employees through the notion of loyalty and long- term employment relationship with the company. Benefits such as health care and pension schemes fostered this traditional retention approach. Resembling a patriarch, the company looked after the needs of the employees and their families, and rewarded them for their services (Branch, 1998). Consequently, the employees became more entrenched in and less

employable outside of the organization. While the more progressive companies are shifting away from this approach, these benefits remain an expectation of the employees. However, traditional retention practices such as pension scheme, health care benefits, loyalty, contractual obligation and job security will not significantly influence knowledge workers' decision to remain with an organization (Kinnear & Sutherland, 2000).

Learning opportunities: The ability of an individual to realize his/ her identity may form the crux of organizational commitment (Kinnear & Sutherland, 2000). From this view, for employees to be committed in the work environment, they need to establish a balance between personal, professional and organizational identities. Personal identity reflects the individuals' ability to realize their values and fulfill their needs outside the work environment. The knowledge workers' need for personal growth would form part of their personal identity. Professional identity represents the knowledge workers' need for meaningful work and working relationships. Knowledge workers have a need to work with and learn from professional colleagues. In addition to professional interaction, they also require challenging work assignments and access to up-to-date technology to realize their professional identity.

Research findings support the above proposition that knowledge workers value learning from professional colleagues and development in their specialist area (Kinnear & Sutherland, 2000). These findings are also in line with the view of Drucker (2001) that development of professional expertise tends to take precedence over other developmental needs of knowledge workers.

Career planning: One key factor affecting employees' career advancement within an organization is the existence of firm's career planning or internal labor markets. These have several key attributes (1) job ladders are positioned within one organization (2) entry is typically restricted at the bottom of the ladders; and (3) movement up the ladders is usually associated with the progressive development of skills and knowledge (Ngo & Tsang, 1998). Existence of firm's internal labor markets will allow for greater promotion opportunities, higher earnings, more firm-specific skills and greater job autonomy for the employees. Accordingly, the existence of firm's internal labor markets (or career planning) will result in a higher organizational commitment. A study by Lincoln and Kalleberg (1996) supported the above proposition that the presence of internal labor market is associated with higher work commitment. These authors contended that on-the-job training could foster commitment through employees' socialization with the firm's specific core values. In addition, steady promotions with seniority and experience could also forestall the alienation associated with dead-end jobs and horizontal careers. As a result, those who are employed in organizations with internal labor markets may show higher affective and continuance commitment, since more promotion opportunities are likely to be available for them than for those who are employed in firms without internal labor markets.

Despite the theoretical and practical importance of the linkages between firm's internal labor markets and organizational commitment, empirical evidence relating to this relationship is rather limited (Ngo & Tsang, 1998).

Although there is an extensive literature on the determinants of attitudinal commitment (which is similar to affective), there have been relatively few empirical investigations examining the antecedents of normative and continuance commitment (Iverson & Buttigieg, 1999). Given this, the present study has taken an exploratory approach by testing the antecedents for all three dimensions of organizational commitment. That is, this study has incorporated the same exogenous variables for the three endogenous commitment measures, in order to test for the differences.

2.6   Consequence of Commitment:

OC is a strong predictor of turnover (Thatcher, Stepina & Boyle, 2002). OC measures the relative strength of an individual's identification or involvement with an organization and is characterized by: (1) a strong belief in and acceptance of the organization's goals and values (normative commitment), (2) a willingness to exert considerable effort on behalf of the organization (affective commitment), and (3) a strong desire to maintain membership in the organization (continuance commitment). Thatcher et al. (2002) reported a review of 16 studies, which used the Organizational Commitment Questionnaire developed and validated by Mowday et al. (1982), found a consistent strong relationship (p=-0.27) between OC and turnover intention. Other researchers (Ketchand & Strawser, 2001) reported larger negative relationships between OC and turnover intentions and actual turnover behavior (corrected r=-0.46 and -.28 respectively). The fact that OC correlates more strongly to turnover intentions, than turnover behavior is consistent with the following 3-steps model of turnover proposed by Mobley et al. (1979).

1. Aspects of the work environment influence the employees' affective responses to the organization (such as OC);

2. Affective responses to the organization influence behavioral intentions (such as intentions to seek alternative employment);

3. Behavior intentions along with other phenomena result in actual turnover.

With respect to relationship between OC and employees' work performance, Mathieu and Zajac's (1990) meta-analysis indicated that OC has a positive, yet small relationship with performance, with a corrected r-value of 0.14.

Studies in accounting profession have produced consistent results for the relationship between affective commitment and two important consequences, turnover intention and actual turnover (Ketchand & Strawser, 2001). That is affective commitment is consistently and negatively related with both the turnover intentions and actual turnover. This means, as employees have developed higher levels of affective commitment, they will less likely be considering and searching for alternative job opportunities (turnover intentions). They will also have lower likelihood of actually leaving the organization for other employment. Other researchers like Iverson (1996) and Somers (1995) have also reported negative effects of affective commitment on turnover intentions and absenteeism. These findings suggest that employees who have developed a high level of affective commitment will demonstrate high emotional attachment, identification with, and involvement in the organization, and therefore are less likely to engage in withdrawal behavior.

Other dimensions of OC such as continuance and normative commitment have different effects on employees' withdrawal behavior. Ketchand and Strawser (1998) reported that continuance commitment unrelated to turnover intentions, while

Kalbers and Fogarty (1995) observed a significant negative relationship between continuance commitment and turnover intention using linear structural relationships. However, Iverson and Buttigieg (1999) anticipated continuance commitment to have similar relationship as affective commitment with both turnover intention and absenteeism. This is because as employees begin to feel a sense of being "locked" into the organization due to high costs of leaving, they would be less likely to leave and be absent. Therefore, employees with a high level of continuance commitment will remain in the organization not because of their emotional attachment with the organization but because of high costs of leaving the organization.

Normative commitment will have similar consequences as affective commitment (Iverson and Buttigieg, 1999). This type of commitment focuses on moral obligation of employees toward the organization, and derives partly from the socialization practices of organization. Employees have an obligation to reciprocate to the organization and therefore are less likely to leave and be absent.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter describes the research design, research site, procedures for research instrument development, the research instrument, respondent selection, process of data collection and data analysis.

3.1   Research Design

The study utilized a cross-sectional survey design. The advantage of the survey research design was that it could cover wider segment of the population and collect more information at lower costs. Another positive aspect is that the respondents' answers were not influenced by the researcher since there was no formal or informal interaction between the researcher and the respondents. The respondents could give an unbiased opinion or feelings toward the research statements or questions at their own convenience. However, the survey was cross-sectional in nature, and therefore the study would not indicate the cause-effects relationships between the independent and the dependent variables.

3.2   Study Population

The population of the study consisted of knowledge workers. Following Kinnear and Sutherland (2000), this study defined knowledge workers as employees who have specialist knowledge and are involved in the activities of research, applied research, development work leading to new products or processes, and consulting based on specialist knowledge.   The professions that fit in with that definition include people in engineering fields, computer and information technology, all branches of sciences, management and finance (Davenport, 2002; Kubo & Saka, 2002). For the present

study the population consisted of knowledge workers from the field of computer and information technology.

The present study focused on computer and IT fields because, firstly, these two fields receive a lot of attention and emphasis from the Malaysian government in its drive toward the knowledge-based economy. As a developing nation, Malaysia lacks in terms of quantity and quality of computer and IT knowledge workers and the expertise to manage them. Therefore, additional information regarding this group of knowledge workers in Malaysia would contribute to our understanding of their attitude and behavior and our ability to manage them better. Secondly, the turnover rate among the computer and IT workers was reportedly high, reaching up to 20% each year (Thatcher, Stepina & Boyle, 2002). Was it because of tight labor market condition that drove the turnover rate up? Being a scarce resource, probably IT workers were enticed to leave their current organization destined for a new organization which offers better remuneration and service packages. However, other critics contend that poor work environment that drives the IT workers to quit their current jobs (Thatcher, Stepina & Boyle, 2002). Management fails to appreciate IT workers' job and fails to integrate them effectively with the rest of the organization. Because of this, their job satisfaction and commitment were low and turnover intention and cases of actual turnovers were high. However, these contentions have not been empirically evaluated among the IT workers (Thatcher, Stepina & Boyle, 2002).

3.3   Research Site

The study was conducted in organizations that spearheaded computer and IT research and development in Malaysia (for example, MIMOS and MTDC associated

companies) and organizations with large pool of computer and IT research and development specialists (for example, SIRIM, Kulim Hitech and the computer centre of UKM). The respondents were all computer and IT specialists from these selected organizations.

3.4   Research Instrument

The research instrument consisted of two parts. The first part comprised of questions relating to the biographical data of the respondents such as age, ethnicity, gender, and years in the organization. The second part consisted of questions relating to the research variables which were as follows:

a. Organizational Commitment

The organizational commitment was measured using the instrument developed by Allen and Meyer (1990). It has three dimensions of commitment: affective, continuance and normative. Affective commitment is the degree of an employee's emotional attachment to, identification with, and involvement in the organization. Continuance commitment is an assessment of costs associated with leaving the organization. Normative commitment on the other hand is the degree to which an employee feels some sense of obligation to remain with the organization.

Each dimension is measured with a scale consisting of eight items: Affective Commitment Scale (ACS), Continuance Commitment Scale (CCS) and Normative Commitment Scale (NCS). The items were evaluated on a 5-point Likert scale of 1 (Strongly disagree) to 5 (Strongly agree). Allen and Meyer (1990) reported the alpha reliability coefficients of 0.87, 0.75 and 0.79 respectively for each of these scales.

b. Professional Commitment

Professional commitment was measured using the questionnaire developed by Jauch, Glueck & Osborn (1978). The questionnaire consisted of six items reflecting the respondents' professional values. Each item was evaluated on a five-point Likert scale as to its importance (1= Not very important to 5= Very important) to the respondents when considering his/her present position. The split-half Spearman-Brown internal reliability coefficient was 0.72.

c. Job satisfaction

Job satisfaction refers to whether employees find their employment sufficiently satisfactory to continue in it, either permanently or until they have prepared for greater responsibilities. Job satisfaction questionnaire was developed based on the instrument used by Thatcher et al. (2002). The instrument used by Thatcher et al. (2002) consisted of two items with a reported internal reliability of 0.93. However, in this study an additional item was added to the questionnaire after the pre-test result indicated a low alpha coefficient (internal reliability) for the original two-item questionnaire.

d. Organizational Career Planning (Firm's Internal Labor Market)

Organizational career planning refers to systematic planning of internal promotion for employees. It was measured by a summative scale that taps the major characteristics of planning for internal promotion of staffs (or internal labor markets). The scale was developed by Ngo and Tsang (1998) and consisted of the following items:

   i. *My company has some plans to train the staff for future promotion*

   ii. *My company has a concrete policy of internal promotion*

iii. My company offers clear career ladders

The three items were measured on a Likert scale of 1 (Strongly disagree) to 5 (Strongly agree). The scale had an internal consistency (Alpha value) of 0.83 (Ngo & Tsang, 1998).

e. Job Autonomy

Job autonomy is the measure of the degree to which an individual has influence over his/ her job (Iverson & Buttigieg, 1999). Job autonomy was measured using the instrument adopted from Thatcher et al. (2002) and the alpha reliability coefficient was reported to be 0.81. The scale consisted of three statements. The first statement used a 5-point Likert scale of 1 (Very little) to 5 (Very much), while the second and third statements used the Likert scale of 1 (Strongly disagree) to 5 (Strongly agree).

f. Traditional Retention Factors

These variables relate to traditional determinants of organizational commitment. They include aspects such as loyalty, job security, structured promotional progress and health care. The scales were adapted from the traditional retention factors developed by Kinnear and Sutherland (2000). The scales consisted of five statements and evaluated using 5-point Likert scale of 1 (Strongly disagree) to 5 (Strongly agree).

g. Learning Opportunities

The variable measures the knowledge workers' need for learning from other professionals and the need to associate with people from the same profession as well as need for learning as a whole. The instrument consists of four statements and evaluated by a 5-point Likert scale of 1 (Strongly disagree) to 5 (Strongly agree). The

measure was developed from the developmental roles and relationship factors developed by Kinnear and Sutherland (2000).

h. Perceived Job Alternatives

Perceived job alternatives refer to workers' beliefs that they can find a comparable job in other organizations. Theory suggests that when the employees perceived that there are many employment alternatives available in the market, they will express lower levels of organizational commitment and consequently, higher levels of turnover intention (Mobley et al., 1979). The instrument to measure perceived job alternatives was adapted from Thatcher et al. (2002). It consists of two items and evaluated based on 5-point Likert scale of 1 (Strongly disagree) to 5 (Strongly agree).

i. Turnover Intention

Turnover intention has been identified as the most immediate precursor to turnover (Mobley et al., 1979). Turnover intention was measured using the instrument adapted from Keller (1984). The instrument consists of three items and found to have an acceptable level of internal reliability (alpha coefficient of 0.67). The statements were evaluated based on a 5-point Likert scale (1: Highly likely to 5: Highly unlikely).

In addition to the measures derived from the above instruments, basic demographic data such as age, number of years working in the organization, gender and educational qualifications were also captured by the questionnaire.

3.5 Pilot-Testing of Research Instrument

The questionnaire was translated from English into Bahasa Malaysia by a Universiti Utara Malaysia lecturer who had graduated in business management studies and was very proficient in both languages. The translated version (Bahasa Malaysia version) was cross-checked by both researchers of this study. The questionnaire used in the pilot study contained both the English and Bahasa Malaysia questions.

The purpose of the pilot test was to evaluate the reliability of the questionnaire as well as the clarity of the questions in both the English and Bahasa Malaysia versions. The pilot test was carried out mainly among the lecturers from the Department of Human Resource Management, School of Management, Universiti Utara Malaysia as the respondents. Altogether 40 sets of the questionnaires were sent to the selected lecturers, and from these 18 sets were received back and analyzed.

Among the feedbacks given by the respondents in the pretest were:

a. Some of the statements in the Bahasa Malaysia versions need to be reworded to improve their clarity and accuracy. These involved statements A6, A16, A17,A23 and C2.

b. Sections E and G of the questionnaire consisted only two questions each. After the pre-test, a third question was added to each of the sections E and G to improve their levels of reliability. The additional questions were as follows:

For section E question, the additional question was: *My company has a clearly structured career path.* For section G questions, the additional question was: *In general I like working here.*

In addition, the format of the questionnaire was redesigned whereby a response menu consisting of 1 to 5 point scales was inserted at the beginning of each of the pages. Originally the response menu was typed only at the beginning of the questionnaire. Editing of the questionnaire was also done to correct weaknesses like spelling mistakes, punctuation marks and so on.

The actual questionnaire used in the study is shown in **Appendix I.**

3.6   Administration of the Research Questionnaires.

Each questionnaire was accompanied by a cover letter from the researchers explaining the purpose and importance of the research, request for the respondents' cooperation to answer the questions and instructions to complete and return back the questionnaire.   Each questionnaire, together with a self-addressed and stamped envelop (to be sent back to the researcher) and a ball-point pen as a token of appreciation for the respondent's cooperation, was inserted into another envelop before distributing it to the respondents.

The researchers personally contacted the head of the human resource department of each of the organizations that willing to take part in this research to set appointments and deliver the questionnaires.   The researchers were not allowed to personally meet with the IT professionals at those participating organizations.   Hence the questionnaires were given and explained to them by their respective human resources officers or executives who had earlier been briefed by the researchers.   As the number of IT professionals was not large in each of these organizations, all of them were invited to participate in the research and given the questionnaires.   Altogether 350

questionnaires were distributed and 191 were returned and used in the analyses. This

means a return rate of about 55% was obtained for this study.

3.7   Scale Reliability

The scale reliability of the research instruments was evaluated based on its internal

consistency of items as measured by the Cronbach's alpha coefficient. **Table 3.1**

presents the reliability coefficients of the research instrument.

Table 3.1 Reliability Coefficients of the Research Instrument (Cronbach's Alpha)

Name of Variable	No. of questionnaire items	Cronbach's Alpha
Affective commitment	7	.7688
Continuance commitment	8	.8115
Normative commitment	7	.6968
Professional commitment	6	.9100
Job autonomy	2	.6920
Career planning	4	.6425
Traditional retention strategies	3	.7784
External job opportunities	2	.5919
Job satisfaction	3	.8191
Learning opportunity	4	.7053
Intention to leave	4	.8401

Majority of the measuring instruments had satisfactory levels of reliabilities, most of

which had coefficients (Cronbach's Alpha) greater than 0.65.   Only external job

opportunity (a two-item variable) and career planning (a four-item variable) had a

Cronbach's Alpha coefficient of lower than 0.65. On the whole, however, the scales

had satisfactory reliabilities and could be used in the exploratory research such as the

present research.

3.8   Data Examination

The data was examined for normality using the simple method of visual assessment of stem and leaf plots and the normal Q-Q plot. The visual check of residual distributions approximating the normal distribution will support the assumption of the normal distribution of the sample. Generally the stem and leaf plots indicate quite a normal pattern of distributions for the variables used in the study. Similarly, the Q-Q plots indicate that all the variables used in the study exhibit the distribution along the expected normal distribution. The stem and leaf plots and the Q-Q plots of some of the variables are shown in **Appendix II.**

The data was also analyzed for linearity relationships using the SPSS version 12 for Windows and the results are shown in **Table 3.2** below.

Table 3.2.   Tests for Linearity of Relationships Between Dimensions of Organizational Commitment and Some Independent Variables

Variables	Sum of Squares	d.f.	F values	Sig.
Job satis. – Affective comm.	.405	190	129.56	.000
Learn. opport. – Affective comm.	.183	190	42.47	.000
Job auton. – Affective comm.	.048	188	9.41	.002
Career plan. – Affective comm.	.107	190	22.67	.000
Retention str.- Affective comm.	.079	190	16.25	.000
Intention – Affective comm.	.071	190	14.50	.000
Job satisfy. – Normative comm.	.255	178	61.06	.000
Learn. opport.-Normative comm.	.197	178	43.73	.000
Career plan. – Normative comm.	.117	178	23.52	.000
Retention str.- Normative comm.	.038	178	7.04	.009
Intention - Normative comm.	.027	178	4.95	.027
Job satisfy. - Continuance comm.	.030	190	5.91	.016
Career plan.- Continuance comm.	.108	190	23.04	.000
Retention str.-Continuance comm.	.095	190	19.85	.000
Job auton. – Continuance comm.	.024	188	4.64	.033
Intention - Continuance comm.	.064	190	13.10	.000

The tests indicated that the relationships between the independent variables used in the study and the affective, normative and continuance commitments were

significantly linear and therefore satisfied the linearity assumptions for the simple and multiple regression analyses.   The graphical representations of Table 3.2 are shown in **Appendix III.**

3.9   Statistical Analysis

The data was analyzed using SPSS version 12 for Windows. The frequencies, means and standard deviations of the variable scores were calculated.   The data was examined for normality distribution and linearity before proceeding to do the correlation and regression analyses. The reliability of the measuring instruments was evaluated based on Cronbach's alpha coefficients for internal consistencies.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

This chapter will report the result of the study. The report begins with the demographic profile of the respondents, and followed by the descriptive statistics, correlation analysis and multiple regression analyses.

4.1 Demographic Profile of Respondents

Age Profile

Majority of respondents were younger employees, with over 96% below the age of 40 years. Specifically, the largest age bracket was within the range of 25-31 years old which comprised 55.7% of the respondents (Table 4.1). This reflected quite consistently with the stage of development of the IT industry in Malaysia. Being a new industry in Malaysia, it is quite natural therefore for the IT industry to consist mainly of younger employees.

Gender Profile

The distribution of respondents was quite evenly balanced between male and female employees, where the males comprised of about 49.7% and the remaining 50.3% were females (Table 4.1). A high percentage of female respondents in this study indicated a trend of rising interests among female knowledge workers to enter the IT and computer industry, especially in the research and development works.

Ethnic Profile

The Malays which comprised of about 88.5% formed major component of the respondents followed by the Chinese (10.5%) and Indians (1.0%).

Marital Status

Married respondents comprised about 61% while the unmarried formed 39% of total respondents.

Table 4.1. Demographic Profile of Respondents.

	Frequency	Percent
Age		
<25 years	15	7.8
25-31	107	55.7
32-40	63	32.8
41-50	7	3.6
Total	**192**	**100.0**
Gender		
Male	95	49.7
Female	96	50.3
Total	**191**	**100.0**
Ethnic		
Malay	169	88.5
Chinese	20	10.5
Indian	2	1.0
Others	0	0.0
Total	**191**	**100.0**
Marital status		
Single	74	38.7
Married	117	61.3
Total	**191**	**100.0**
Length of service		
<2 years	56	29.3
3-5	81	42.4
6-8	25	13.1
9-12	22	11.5
> 12 years	7	3.7
Total	**191**	**100.0**

Length of Service

Majority of the respondents (72%) had 5 years or less of service with the organization. Only about 4% of the respondents have been with the organization longer than 12 years. Shorter span of service for the majority of the employees is

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consistent with their age profile, which falls mainly below 31 years of age. This reflected that younger and growing organizations are actively involved in the development of the IT industry in Malaysia now.

4.2   Mean, SD and Range of the Variables

The means, standard deviations and range scores of the research variables are shown in Table 4.2.   The mean scores of all three dimensions of the organizational commitment were not particularly high, as none had achieved mean scores of 3.5 and above. Normative commitment had the lowest mean of 2.94 while the affective commitment had the highest mean of 3.38.   The mean for the continuance commitment was 3.37.

Table 4.2: Mean, Standard Deviation (SD) and Range of Research Variables

Variables	Mean	SD	Minimum	Maximum
Affective	3.3808	.55831	1.63	4.75
Continuance	3.3733	.71193	1.25	5.00
Normative	2.9444	.59252	1.29	4.71
Professional commitment	4.3525	.58583	1.00	5.00
Job autonomy	3.7000	.76428	1.00	5.00
Retention	3.4385	.58638	1.60	5.00
Career planning	2.9002	.83168	1.00	5.00
Job opportunity	3.5651	.73590	1.00	5.00
Job satisfaction	3.5122	.78071	1.00	5.00
Learning opportunity	3.5964	.63066	1.75	5.00
Intention to leave	2.7813	1.00241	1.00	5.00

Note: Each variable was measured on a Likert scale of 1 (Strongly Disagree) to 5 (Strongly Agree).

The means of affective and normative commitments obtained in this study were lower (3.38 and 2.94 respectively on a scale of 1 to 5) than the means of affective and normative commitments of the petrochemical employees reported by Finegan (2000), while the mean for continuance commitment was higher in this study than that of the Finegan's (2000) study. This result implied that the knowledge workers in this study

stayed on in their organizations, not because they really wanted to or felt obligated to stay on, but rather due to certain exit constraints such as high personal investments (e.g. seniority based pay system, and employment security) and time-based benefits system (e.g. pension schemes and other time-based financial benefits).

The level of professional commitment of the respondents of this study was relatively high (4.35). This result appeared to support the apparent conflict between organizational commitment and professional commitment as suggested by researchers like Jauch et al. (1978) and Kinnear and Sutherland (2000). Traditional view on this issue is that individuals had to choose between giving commitment either to their profession or to their organization. The result of this study tend to support the view that professionals would tend to give more commitment to the profession rather than their organization.

Employee retention strategy had a mean score of 3.43 which was quite high (on a 5-point Likert scale) for IT-research organizations. High mean score for the retention strategy meant that these organizations tend to practice the traditional staff retention strategies (Kinnear & Sutherland, 2000) which include the following characteristics:

Pay system which is tied to work experience
Job security
Rewards as recognition for loyalty to the company
Outstanding health care benefits
Pay system which is tied to employee's qualifications

The practice of traditional retention strategies by the organizations in this study was not totally unexpected given that most of these organizations are owned by the Government. Hence they are influenced by the Government's service terms and human resource management practices.

Career planning in these organizations was viewed as not well planned, particularly in terms of training for future promotions, vague career ladder and policy for internal promotions. The mean score for career planning was 2.90. This indicated that participating organizations had no systematic and well formulated plans for the future of their IT employees' career.

The mean score of 3.59 for learning opportunities was quite high. This would mean that the respondents had opportunities to meet with colleagues from the same profession and learn from them through seminars or conferences. Respondents could also learn from colleagues within the same organization. However, for the learning processes to take place, the culture of learning and sharing of knowledge should exist in the organization. The culture of learning and sharing of knowledge within the organization should be encouraged because knowledge workers value learning from professional colleagues (Kinnear & Sutherland, 2000).

The mean for job satisfaction was 3.51 and this was at a satisfactory level. This meant that although some human resource management practices were traditions bound (e.g seniority based pay, rewards for loyalty, and limited career planning), they did not negatively affect the employees' level of job satisfaction. Since these IT employees were relatively highly committed to their profession, and were also given relatively high levels of autonomy and learning opportunities on their jobs, whatever weaknesses found in some of the organization's human resources practices did not necessarily negate their levels of job satisfaction. External job opportunity had a relatively favourable mean score of 3.56. This outcome had projected that the respondents were of the opinion they could find similar jobs in the outside job market quite easily.

The mean for the "intention to leave" was 2.78, and this was at the lower end of the scale of 1 (highly likely) to 5 (highly unlikely). It was between "likely" (2) to "not sure" (3). Hence the intention to leave the organization was relatively highly felt among the respondents. In essence, this finding was in congruence with and the reflective of a lower level of organizational commitment (affective and normative) as being discussed in the preceding section of this report.

4.3   Correlation Analyses

The results of the correlation analyses among research variables are shown in **Table 4.3.**

Affective Commitment

Affective commitment was found to be negatively and significantly related with continuance commitment. This means that if one is affectively committed to the organization (i.e. high emotional attachment and identification with the organization), one will stay in the organization irrespective of whether one has little or large personal investment in it, or whether or not one has ample job opportunities outside the organization (Meyer et al., 1993).

Affective commitment was not significantly related to normative commitment, or feelings of moral obligations to stay or committed to the organization. This result supported earlier finding by Meyer & Allen (1993). It was also not significantly related with professional commitment which indicated a support for the independence of these two variables as reported by Jauch, Glueck & Osborne (1978) and Swailes (2000). This means that individuals may have high commitment to their profession and at the same time be affectively committed to their organization. In any case, they

may also have low commitment to both their profession and organization, or high on one or the other as advocated by Jauch et al., (1978).

Table 4.3. Correlation Among Variables

VARIABLES	1	2	3	4	5	6	7	8	9	10
1. Affective commitment	1.000									
2. Continuance commitment	-.175*	1.000								
3. Normative commitment	-.078	-.097	1.000							
4. Professional commitment	.060	-.063	-.047	1.000						
5. Job autonomy	-.063	.051	-.015	-.073	1.000					
6. Career planning	-.273**	-.026	.015	-.173*	-.243**	1.000				
7. Retention	-.245**	.010	-.002	-.123	-.178*	.281**	1.000			
8. Job opportunity	.016	.085	.013	.156*	.097	.053	-.086	1.000		
9. Job satisfaction	.006	.001	-.029	.113	-.010	.637**	.174*	.505**	1.000	
10. Learning opportunity	-.145*	-.013	.042	-.059	-.145*	.427**	.079	.444**	.165*	1.000

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Affective commitment was significantly and negatively correlated with traditional retention strategies, career planning and learning opportunities. Traditional retention strategies as practiced by bureaucratic organizations are meant to retain employees through the notion of loyalty and long term employment with the organization, and these include such things as pension schemes, health care benefits, loyalty, contractual obligations and job security. The knowledge workers in this study responded negatively toward these traditional retention strategies and this finding supported Kinnear and Sutherland study in 2000.

Career planning based on fixed career path within one organization, and movement upward based on progressive development of skills and knowledge (Ngo & Tsang, 1998), theoretically should be more appealing to general workers because it provides more promotional opportunities, but for the knowledge workers this system did not attract them. In fact, traditional career planning was negatively correlated with the affective commitment of the knowledge workers.

Similarly, learning opportunities were also negatively correlated with the affective commitment. This result was contrary to findings obtained by Kinnear and Sutherland (2000), who stated that knowledge workers value learning from professional colleagues and development in their specialist areas. However, these two studies were not similar in the sense that Kinnear and Sutherland utilized the unidimensional measure of organizational commitment (Porter et al., 1974) whereas this study utilized the affective commitment measure developed by Meyer and Allen (1984).

Continuance Commitment and Normative Commitment

None of the antecedents tested (professional commitment, job autonomy, traditional retention strategies, career planning, job opportunity, job satisfaction and learning opportunity) were significantly correlated with continuance and normative commitments, respectively. However, as Iverson and Buttigieg (1999) stated there is a dearth of empirical data on antecedents of these two forms of organizational commitment. Hence more empirical studies are needed in this area.

4.4   Regression Analyses

Predictors of Affective commitment

The combined effects of antecedents (professional commitment, job autonomy, traditional retention strategies, career planning, job opportunities, job satisfaction and learning opportunities) explained about 43% of variance in the affective commitment (Table 4.4). However, most of this was contributed by job satisfaction which was the only predictor of affective commitment found to be significant. This result supported the finding from Hackett et al.'s (1994) study. Hence when a knowledge worker is happy with his/ her job, he/ she will be more affectively committed to the organization.

Table 4.4. Predictors of Affective Commitment

Variables	Beta	t-value	Sig.
Professional commit.	-.032	-.545	.586
Job autonomy	.008	.123	.903
Trad. retention	-.001	-.009	.993
Career planning	.115	1.785	.076
Job opportunity	-.060	-1.048	.296
Job satisfaction	.601	8.141	.000
Learning opportunity	.033	.415	.679
R square	**.428**		
F	**19.333****		

**P<0.001

Predictors of Continuance Commitment

The combined effects of antecedents (professional commitment, job autonomy, traditional retention strategies, career planning, job opportunities, job satisfaction and learning opportunities) explained about 21.1% of variance in the continuance commitment (Table 4.5).   Traditional retention strategies and career planning had positive and significant influence on continuance commitment whilst job autonomy had significant but negative influence.

By definition, continuance commitment is associated with costs of leaving the organization. Thus by imposing higher costs of leaving the organization such as through attractive health care benefits, job security and rewards based on company loyalty (traditional retention strategies) continuance commitment would be high (Weiner, 1982). Similarly, career planning based on fixed career ladder, internal promotion and training as basis for promotion all would contribute to employees' continuance commitment because these are costs which would be lost if the employees quit the organization. On the other hand job autonomy is something which the knowledge workers expect at the workplace, and it is not an investment which will tie them to the organization. Hence, it affects continuance commitment negatively.

Table 4.5. . Predictors of Continuance Commitment

Variables	Beta	t-value	Sig.
Job characteristic	.079	1.141	.255
Job autonomy	-.229	-3.143	.002
Retention	.318	3.752	.000
Career planning	.188	2.488	.014
Job opportunity	-.053	-.785	.433
Job satisfaction	.145	1.677	.095
Learning opportunity	-.156	-1.692	.092
R square	**.211**		
F	**6.930****		

**P<0.001

Predictors of Normative Commitment

The combined effects of antecedents (professional commitment, job autonomy, traditional retention strategies, career planning, job opportunities, job satisfaction and learning opportunities) explained about 28.2% of variance in the normative commitment (Table 4.6). Job satisfaction was the only predictor of normative commitment which was significant (positive) in this study.

Table 4.6 Predictors of Normative Commitment

Variables	Beta	t-value	Sig.
Job characteristic	-.040	-.593	.554
Job autonomy	-.041	-.577	.565
Retention	.082	.976	.331
Career planning	.028	.376	.707
Job opportunity	.051	.756	.451
Job satisfaction	.352	4.094	.000
Learning opportunity	.172	1.910	.058
R square	**.282**		
F	**9.463****		

**P<0.001

For the knowledge workers if they are happy with their job, they would feel obligated to remain with the organization. And that is an obvious thing to do when one finds his/her job is motivating enough to courageously pursue it.

Organizational Commitment and Intention to Leave

Most earlier studies on the consequences of organizational commitment have consistently reported that the relationships between organizational commitment and turnover intention were negative and significant. Thatcher et al. (2003) for example, reported that a review of 16 studies using the Organizational Commitment Questionnaire (developed and validated by Mowday et al. (1982) has revealed a strong relationship between organizational commitment and turnover intention. Similarly, Ketchand and Strawser (2001) reported a negative, but larger, relationship between organizational commitment and intention to leave (p= -0.46) and actual turnover (p= -0.28).

Studies investigating relationships between different dimensions of organizational and employees' behavior are fewer in numbers. The present study investigated the

relationships between affective, continuance and normative commitments and the intention-to-leave. The results of the regression analyses are shown in Table 4.7.

Table 4.7   Relationships Between Affective, Continuance and Normative Commitments and Intention-to-Leave

Variables	R square	Beta	t-value	Sig.
Affective commitment	0.071	-.266	-3.807	.000
Continuance commitment	0.064	-.254	-3.619	.000
Normative commitment	0.027	-.165	-2.226	.027

Table 4.7 indicates that all three dimensions of the organizational commitment were significantly and negatively related with the intention-to-leave.   Affective commitment had the highest R squared value (0.071) as compared with the continuance (0.064) and consequently the normative (0.027).   This means that the affective commitment was able to explain about 7.1% variance in the intention-to-leave, which was relatively small compared to the unexplained variance.   However, this finding is similar to other earlier findings which found that the affective commitment was a stronger predictor of intention-to-leave the organization (Iverson, 1996; Ketchand & Strawser, 2001; Somers, 1995).

Although Ketchand and Strawser (2001) reported that continuance commitment was unrelated to turnover intention, the present study found that continuance commitment was significantly and negatively related with the intention-to-leave, even though weaker than the relationship obtained for affective commitment. This finding was

similar to the findings reported by Kalbers and Fogarty (1995) and Iversion and Buttigieg (1999). Iversion and Buttigieg (1999) suggested that continuance commitment would have similar relationship as affective commitment with both turnover intention and absenteeism because as the employees feel being "locked" into the organization due to high costs of leaving, they would be less likely to leave and be absent from the organization. Hence, an individual with high continuance commitment will remain in the organization, not because he or she is emotionally attached to it, but mainly because of the high costs of leaving the organization.

Normative commitment was also significantly and negatively related with intention to leave. However the R squared value was 0.027, or 2.7% of variance in intention-to-leave explained by normative commitment. As explained by Iversion and Buttigieg (1999) normative commitment would have similar behaviour consequences as affective commitment although on a lower scale. An individual with high normative commitment will remain in the organization because he/ she feels morally obligated to do so. Moral obligation is derived partly from the socialization process of the organization. Employees feel obligated to reciprocate to whatever good things the organization has given or did to them, and therefore are less likely to leave or quit. Similarly, the IT workers (knowledge workers) in this study who came mainly from government owned (or government linked) organizations must have been socialized and internalized the philosophy and values that support the national aspirations. We aspire to be a nation that is advanced and developed in terms of IT R&D and utilizations. In relation to this, they could have developed an obligation to remain and contribute to the attainment of the vision and missions of their respective organizations.

CHAPTER FIVE

SUMMARY, CONCLUSION AND IMPLICATION OF RESEARCH FINDINGS

This chapter presents the summary of the research findings which consists of means of the research variables, correlations and regression analyses, implications of the research findings, directions for future research and conclusions.

5.1   Levels of Organizational Commitment of Knowledge Workers

The respondents of this study consisted of IT employees of firms mainly linked to the government (GLC's) such as SIRIM and MIMOS. They are among knowledge workers as defined by Alvesson (1995) and Davenport (2002). According to some writers, knowledge workers are less committed to their organizations (Drucker, 2001; Munk, 1998). The result of this research indicates that organizational commitment of the IT personnel (knowledge workers) were at satisfactory levels, although the normative commitment was substantially at a lower level than the others. On a Likert scale of 1 to 5 (strongly disagree to strongly agree), the means for the affective, continuance and normative commitments were 3.308, 3.3733 and 2.944 respectively.

The means of other research variables were also at satisfactory levels except for career planning, intention-to-leave and professional commitment. The mean for professional commitment was 4.35, and this was substantially higher than the mean of any one of   organizational commitment dimensions. On the other hand, the mean value of 2.90 for career planning was relatively low indicating that career planning at the participating organizations was not well established in terms of career-path, training and policy on internal promotions.   The mean value for intention-to-leave

variable was also low indicating that the respondents were not likely to leave their respective organizations in the near future.

5.2 Correlations Between Affective, Continuance and Normative Commitment and Antecedent Variables

Affective commitment was significantly and negatively related with continuance commitment but not significantly related with normative commitment. Continuance commitment was not significantly related with normative commitment. Affective commitment was significantly and negatively correlated with traditional retention strategies, career planning and learning opportunities. However, continuance and normative commitments were not related to any of the antecedent variables. Professional commitment was also not related to any form of organizational commitment. The results of the correlation analyses between the various dimensions of organizational commitment and the antecedents are shown in Table 5.1 (below).

Table 5.1   Summary of Correlations between Antecedents and Dimensions of Organizational Commitment

No	Antecedents	Affective Commitment	Continuance Commitment	Normative Commitment
1	Professional commit.	No	No	No
2	Job autonomy	No	No	No
3	Career planning	Yes (Neg.)	No	No
4	Retention strategies	Yes (Neg.)	No	No
5	Job opportunity	No	No	No
6	Job satisfaction	No	No	No
7	Learning opportunity	Yes (Neg.)	No	No

5.3 Regressions of Antecedent Variables on the Affective, Continuance and Normative Commitments

a. The antecedents as a whole (professional commitment, job autonomy, traditional retention strategies, career planning, job opportunities, job satisfaction and learning opportunities) contributed significantly to the variance in the affective commitment. The combined effects of the antecedents explained about 43% of this variance. However of all the seven antecedents tested, only job satisfaction was significant and contributed the most to the variance in affective commitment.

b. The antecedents as a whole (professional commitment, job autonomy, traditional retention strategies, career planning, job opportunities, job satisfaction and learning opportunities) also contributed significantly to the variance in the continuance commitment. The combined effects of the antecedents explained about 21.1% of this variance. Of all the seven antecedents tested, three (job autonomy, traditional retention strategies and career planning) had contributed significantly to the variance. Job autonomy had a significant but negative effect on continuance commitment, while the other two had significant and positive effects.

c. Similarly, the antecedents as a whole (professional commitment, job autonomy, traditional retention strategies, career planning, job opportunities, job satisfaction and learning opportunities) significantly contributed to the variance in normative commitment. The combined effects of the antecedents explained about 28.2% of this variance. However, only job satisfaction was

found to have the most significant effect on the variance in the normative commitment.

The results of the regression analyses between various dimensions of organizational commitment and their predictors are shown in Table 5.2 (below)

Table 5.2   Summary of the Results of the Regression Analyses Between the Predictors and Various Dimensions of Organizational Commitment.

Dimensions of Organizational Commitment	% Contributions to Variance	Significant Predictors
Affective Commitment	43.0%	Job satisfaction (+ve)
Continuance Commitment	21.1%	Job autonomy (-ve) Traditional retention (+ve) Career planning (+ve)
Normative Commitment	28.2%	Job satisfaction (+ve)

5.4   Relationship Between Affective, Continuance and Normative Commitments and the Intention-to-Leave.

All the three types of commitments were significantly and negatively correlated with intention-to-leave variable. It was revealed that affective commitment had the highest negative relationship. The results are summarily shown in Table 5.3 (below).

Table 5.3 The Relationship Between Various Dimensions of Organizational Commitment and Intention-to-Leave.

Dimensions of Organizational Commitment	% Variance Explained	Effects
Affective Commitment	7.1%	Negative
Continuance Commitment	6.4%	Negative
Normative Commitment	2.7%	Negative

5.5 Implications For Human Resource Management Practices

Organizations which rely heavily on knowledge workers in their business processes, need to have an establish methods of gaining and retaining their commitment. Loss of knowledge workers to an organization means loss of both tangible and intangible knowledge which can bring potential competitive advantage. Knowledge of the predictors of various forms of organizational commitment (affective, continuance and normative) would enable organizations to manage their knowledge workers in a much better way. Hence, organizations should be competent enough to know and understand the determinants of organizational commitment and ensure that these factors are addressed in their human resources strategies appropriately. The results of this research highlighted some important implications for the management of knowledge workers, especially the IT professionals:

a. Job satisfaction is the most important determinant (positive determinant) of both affective and normative commitments. Affective commitment reflects the psychological and behavioral identification of an employee with the organization. It is the factor that drives an employee to willingly give extra effort and performance for the organization. Hence, organizations should devote their efforts in nurturing and cultivating the spirit of affective commitment among their valued employees. One of the ways as indicated by this result is to ensure that employees are satisfied with their job. Another important aspect is the effect of job satisfaction on normative commitment or the employee's obligation to reciprocate rightly towards the organization which in most cases relate to the right work behaviors, performance and attitudes. Therefore, in devising human resource strategies for knowledge

workers, various aspects of the job and its environment should be carefully considered with the view of creating a good quality of work life liken by them. It is hoped by so doing will flourish the feeling of goodness among employees, and they in turn would be more affectively and normatively committed to serve their organizations.

b. Traditional retention strategies, such as reward system that is linked to seniority and loyalty and strategies that safeguard the job security have positive effects on continuance commitment, but are unrelated with affective and normative commitments of the knowledge workers. However, as discussed in the earlier section of this report, high continuance commitment is reflective of the employee's inability to leave the organization due to high cost of leaving instead of his/her identification with it. On the other hand, the affective commitment and to a lesser extent the normative commitment, are found to be consistently related to the employee's positive work behaviors and attitudes and high performance. Hence, it is advisable for organizations to deemphasize the use of traditional retention strategies, and give priorities to developing of a more innovative strategies that will enhance and strengthen the affective commitment. Such strategies would include important elements of job design like autonomy, feedback, responsibility, task significance and others.

c. Similarly, career planning that is linked to career ladder which emphasizes the seniority and length of service is related positively to continuance commitment but unrelated with affective and normative commitments. Hence, some

elements of merit and performance, knowledge acquisition and skill development, creativity and innovativeness should be included as part of career planning elements in order to make them more affectively committed to their organization.

d. Another observation from the result of this research is that job autonomy is negatively related with continuance commitment. A worker, who is committed to an organization as a result of the "sunk cost" or of his/her inability to leave, has no appreciation for job autonomy. He/she would rather have structured jobs or follow instructions in order to perform the job.

e. All forms of organizational commitment whether affective, continuance or normative were negatively related with intention-to-leave. However, the reasons for wanting to stay in the organization vary according to the types of commitment. It was observed that affective commitment had the strongest negative relationship with intention-to-leave, followed by continuance and normative commitments. In practical terms, this means that a worker who has identified psychologically with the organization and shared similar views with it, would have a strong desire to remain in the organization and contribute to its growth and performance. On the other hand, a worker who has invested a lot of his/her time, service, career and cost in the organization would have no choice but to remain in the organization. He/she may not like to remain or desire to perform for the organization, but because of the cost of leaving is too high, he/she has to stay on and remain committed to the organization. Even though an employee is affectively committed to the organization, he/she may

still quit the organization if the job or the job environments change in the way that he/she can no longer identify or contribute to it. Hence, it is imperative for human resource managers to regularly monitor and get feedbacks regarding the job and its conditions to ensure the level of satisfaction among their employees is most encouraging.

5.6   Limitations of the Study

This study had some limitations which need considerations when interpreting its results and outcomes:

a. The respondents of this study consisted mainly of IT employees from the government-owned organizations such as MIMOS and SIRIM. Hence, the results of this study may not be comparable with or can not be generalized to IT employees in the truly privately-owned organizations. The results may however reflect the attitudes and behaviors of IT employees in similar government-owned organizations.

b. The research instruments used to measure the three forms of organizational commitments (affective, continuance and normative) were taken and adapted from Allen and Meyer (1990). Although the instruments were translated and pre-tested prior to the actual research, it might not be totally free from western cultural bias. Thus the research instruments need to be finely tuned and more rigorously tested so that the questions and statements contained in the questionnaire were free from Western jargons and expressions.

c. The cross-sectional nature of the study and the correlation type of analysis do not permit the cause-effect interpretation of the results. Hence, the antecedents of organizational commitment can also be the antecedents of intention-to-leave. The way the result of the present study is interpreted is based on the theoretical relationships and the relationships developed in the research framework.

5.7   Future Research Direction

Since knowledge workers will form a major component of the workforce of the developed and developing economies, more data and information about them are required in order to devise more effective human resources strategies and suitable practices for them. In the context of the research on knowledge workers in Malaysia, more research efforts are needed in the following areas:

a. Developing of measuring instruments for affective, continuance and normative commitments in tandem with Malaysian socio-economic sensitivities and nuances. A valid and reliable research instrument is the first critical step in the process of collecting a valid and reliable data of the research.

b. The research should include other types of knowledge workers in various types of organizations, preferably privately-owned organizations. Privately-owned organizations have wider range of human resource practices that include different types of reward systems, retention strategies and job designs and environments. It would offer a wider range of human resource practices and types of respondents to study.

c. The roles of religiosity and gender in the expressions of various types of organizational commitment should be more closely studied, because in the context of Malaysian workforce religious beliefs play a big role in the conduct of their daily lives including work, social and interpersonal relationships.

d. Longitudinal research that may cover between one to one and half years should be conducted in the future in order to track the changes in the levels of various forms of organizational commitment and the factors that influence these changes. Confirmatory statistical analyses can be used to isolate and determine these influences and their effects on various forms of organizational commitment.

5.8   Conclusions

The emergence of knowledge workers as the dominant workforce in the developed as well as developing economies of the world, calls for a more in-depth study of their attitudes and behaviors towards their work and organizations. One of the important and relevant concepts that has been studied is the knowledge workers' commitment toward their organization. The present study explored the influences of the work and situational related antecedents on the three types of the organizational commitments among IT professionals (a category of knowledge workers) working mainly in the government-owned organizations. The results indicated that IT professionals in these organizations have lower to medium levels of all the three types of organizational commitments. However, they have higher levels of commitment toward their profession. It was also evident that there was no relationship between organizational commitment and professional commitment. While job satisfaction

was the most important predictor for all types of the organizational commitments, the traditional retention strategies and career planning only affect the continuance commitment. Overall, the study has achieved its objectives albeit the constraints and limitations as being discussed in the above section.

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Tests of Normality

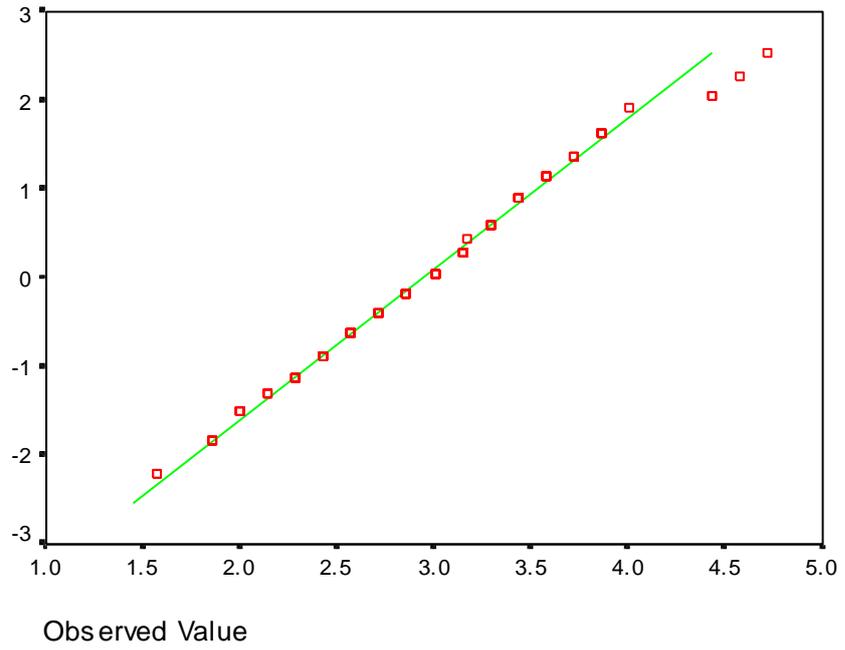|	Kolmogorov-Smirnov		
	Statistic	**df**	**Sig.**
AFFECTIV	.073	177	.021
CONTINUA	.053	177	.200
NORMATIV	.074	177	.020
JOBCHAR	.154	177	.000
AUTONOMY	.210	177	.000
CARPLANN	.105	177	.000
RETENTIO	.134	177	.000
JOBOPP	.190	177	.000
JOBSATIS	.212	177	.000
LEARNOPP	.182	177	.000
INTENTIO	.093	177	.001

* This is a lower bound of the true significance.

a Lilliefors Significance Correction

Normal Q-Q Plot of AFFECTIV

Observed Value
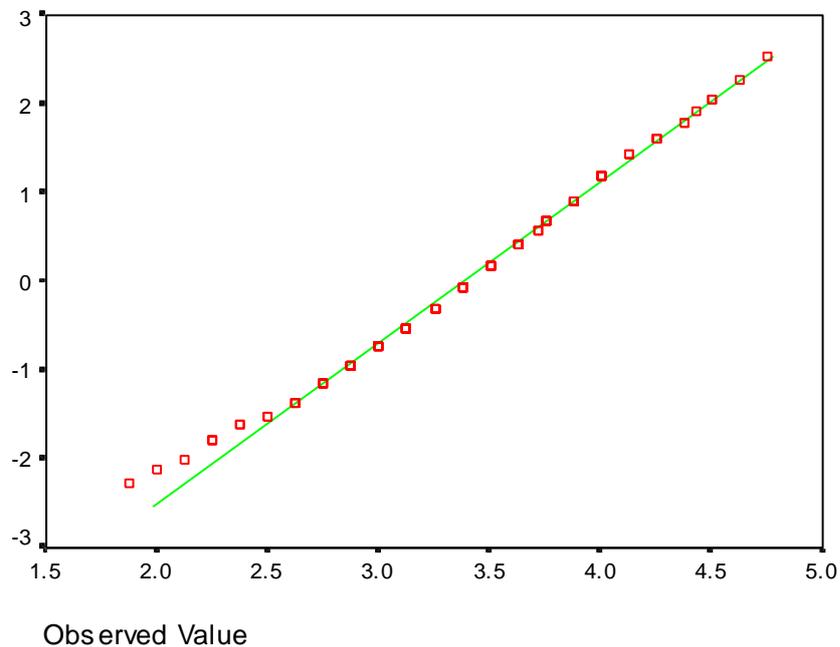
Normal Q-Q Plot of NORMATIV

Observed Value

Normal Q-Q Plot of JOBCHAR

Observed Value
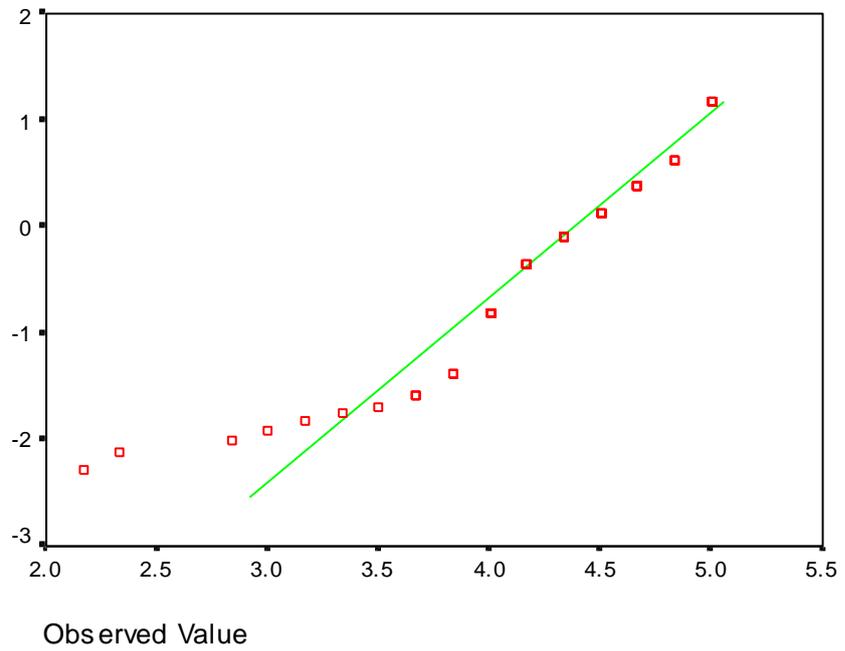
Normal Q-Q Plot of AUTONOMY

Observed Value
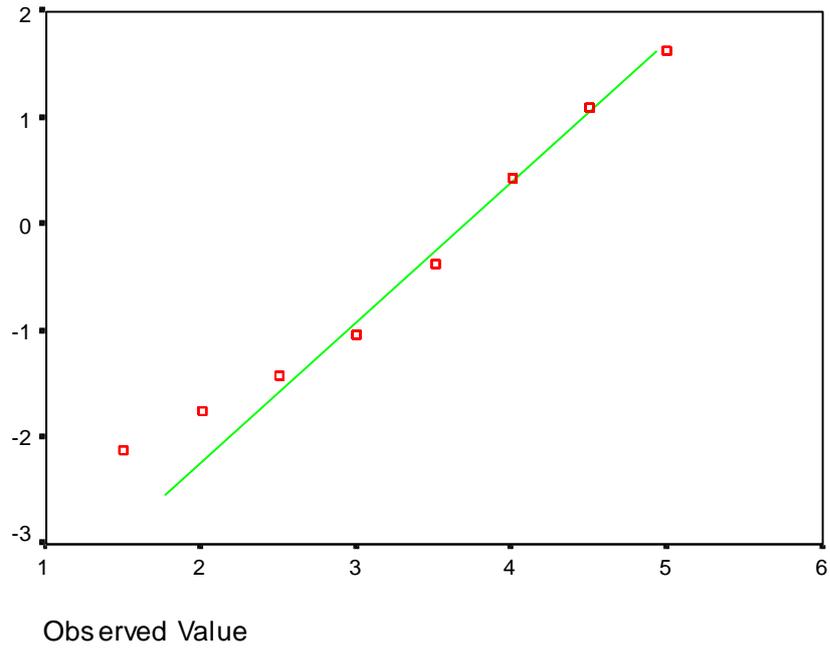
Normal Q-Q Plot of CARPLANN

Observed Value
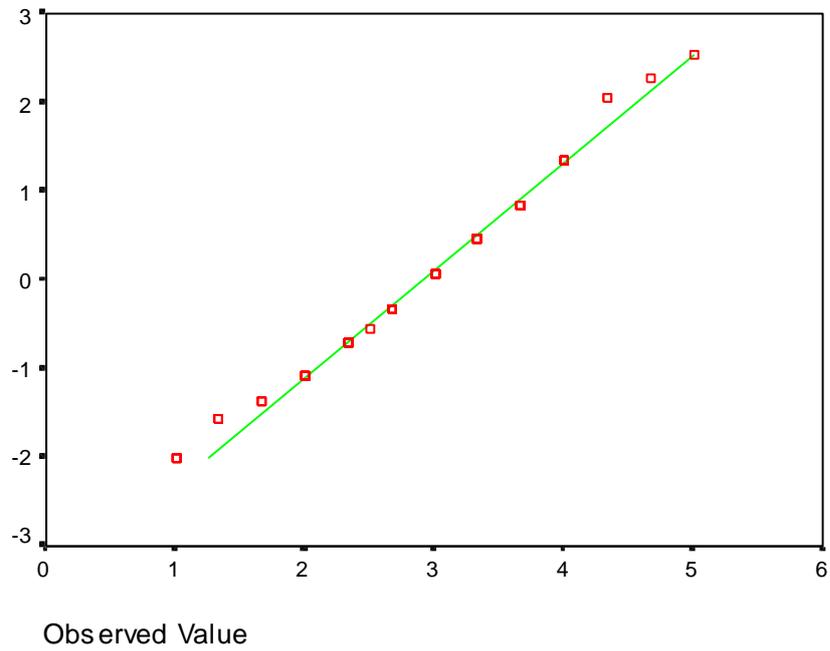
Normal Q-Q Plot of RETENTIO

Observed Value
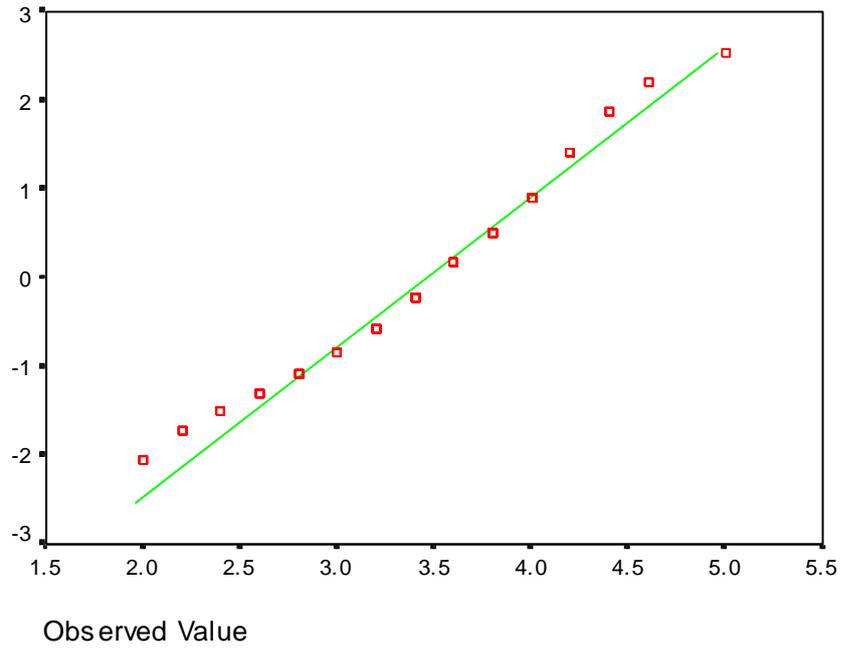
Normal Q-Q Plot of JOBOPP

Observed Value
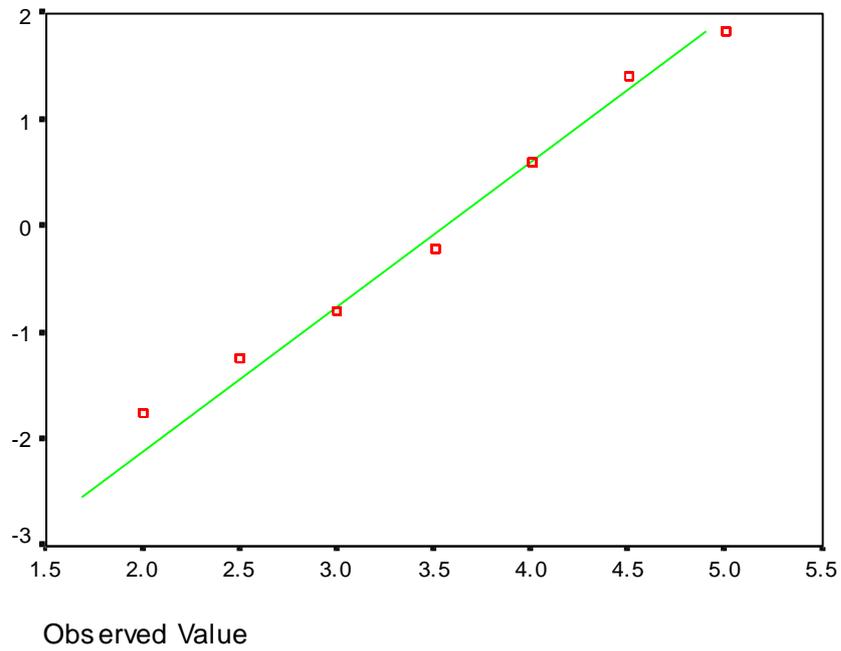
Normal Q-Q Plot of JOBSATIS

Observed Value
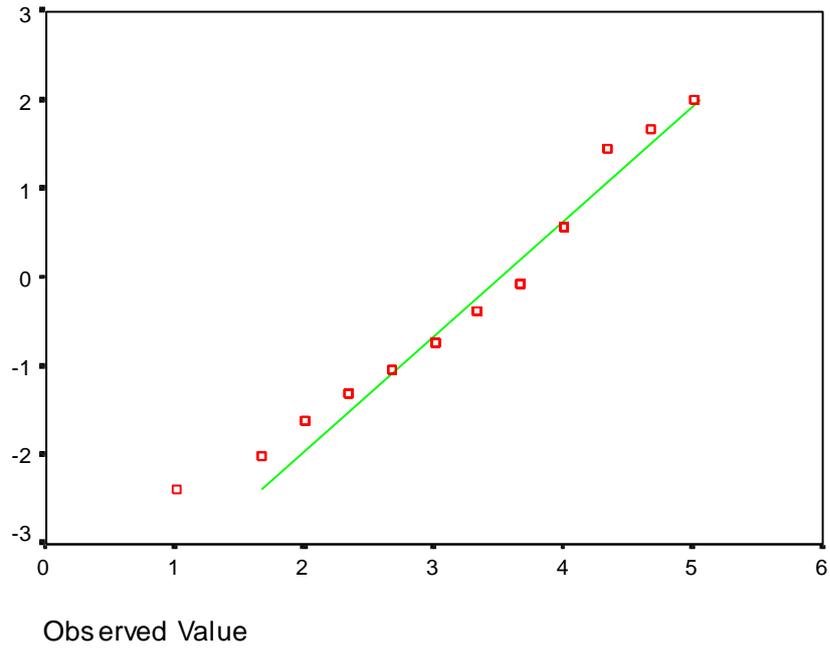
Normal Q-Q Plot of LEARNOPP

Observed Value
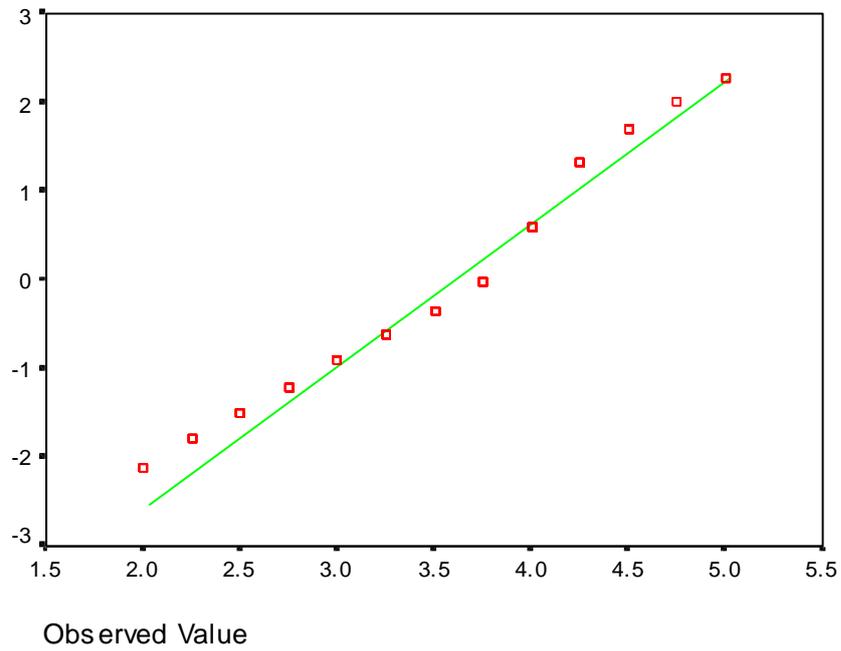
Normal Q-Q Plot of INTENTIO

Observed Value
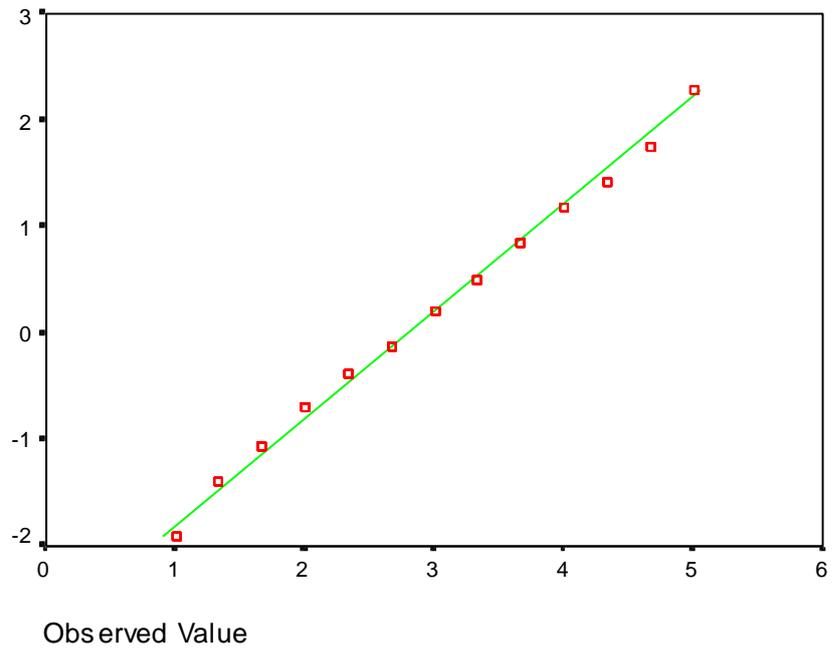
LINEARITY

```
MODEL:  MOD_4.

Independent:  NORMATIV


Dependent Mth   Rsq  d.f.       F  Sigf       b0        b1

AFFECTIV LIN  .230   178   53.07  .000  2.0739    .4447
```


AFFECTIV

NORMATIV
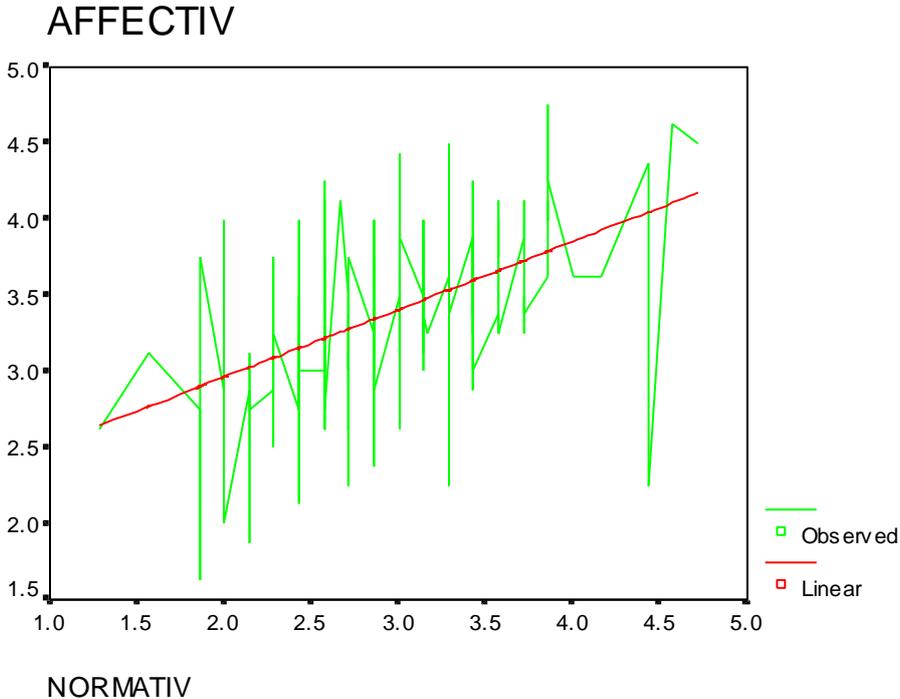
```
MODEL:  MOD_3.

Independent:  CARPLANN


Dependent Mth   Rsq   d.f.       F  Sigf       b0        b1

AFFECTIV LIN   .107    190    22.67  .000  2.7451    .2192
```

AFFECTIV

CARPLANN
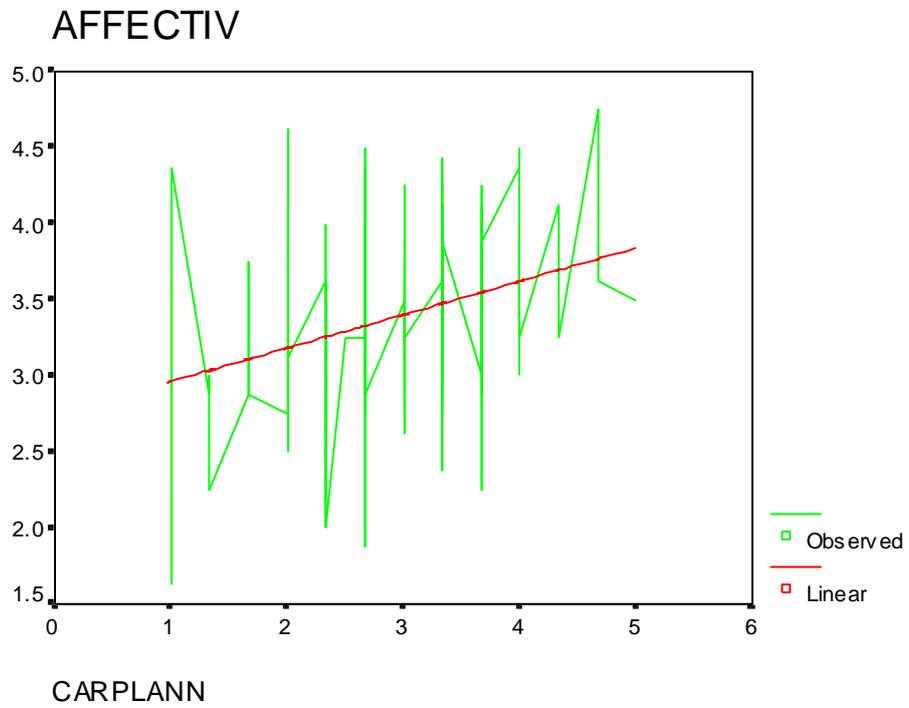
```
MODEL:  MOD_4.

Independent:  RETENTIO


Dependent Mth   Rsq  d.f.        F  Sigf        b0        b1

AFFECTIV LIN  .079    190   16.25  .000  2.4617    .2673
```
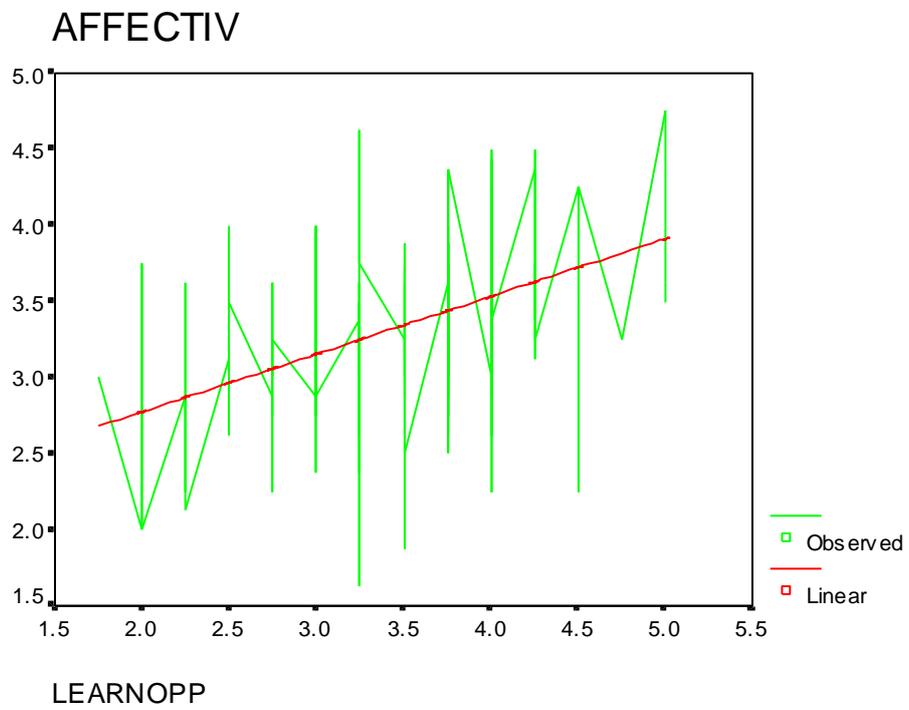
AFFECTIV

RETENTIO
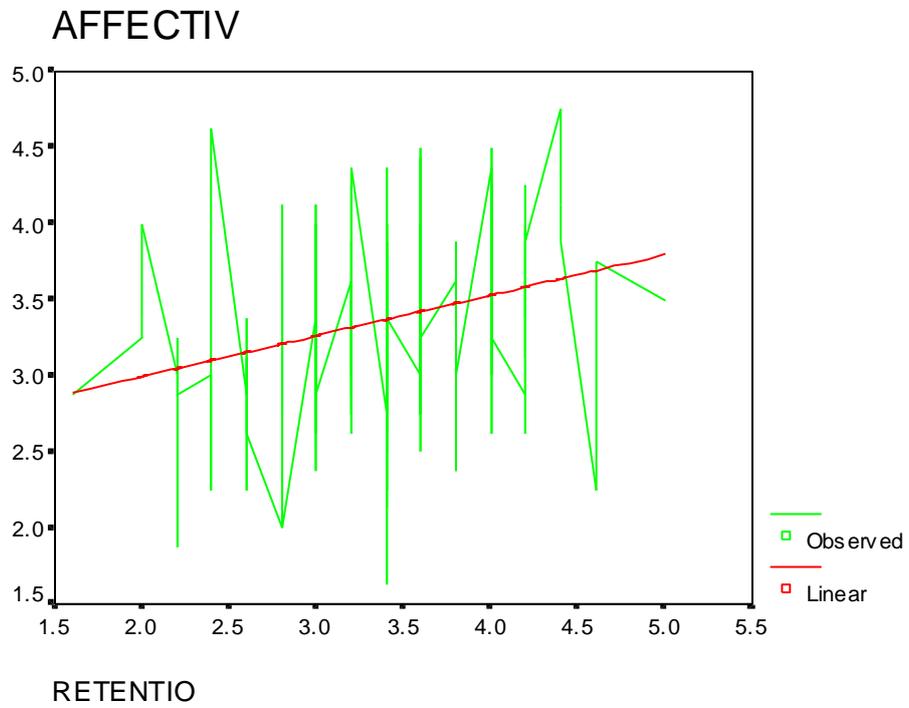
```
MODEL:  MOD_6.

Independent:  JOBSATIS


Dependent Mth   Rsq  d.f.        F  Sigf       b0        b1

AFFECTIV LIN  .405    190  129.56  .000  1.7815    .4554
```
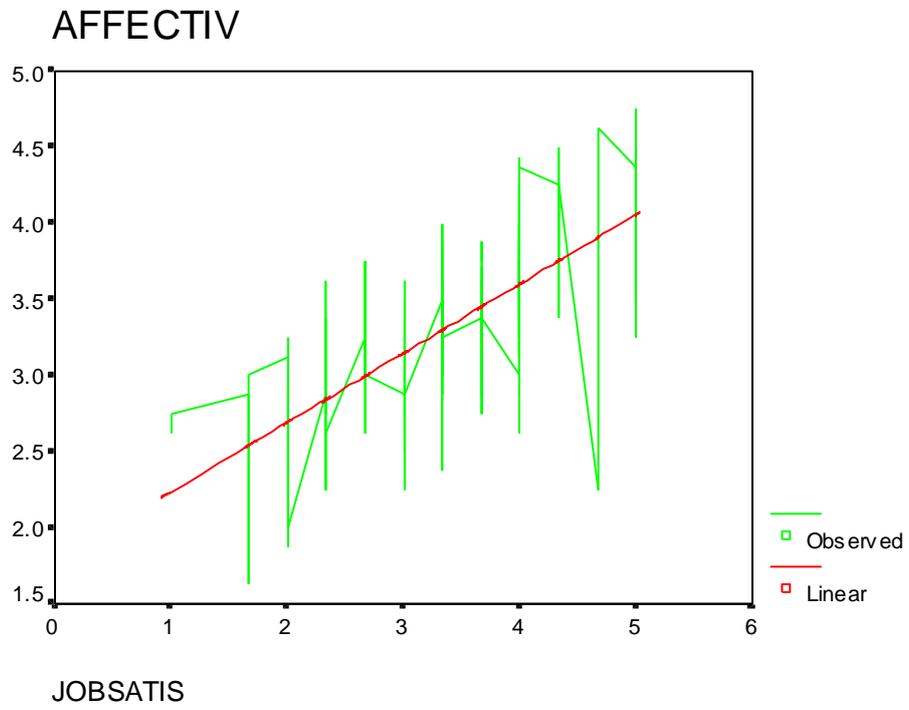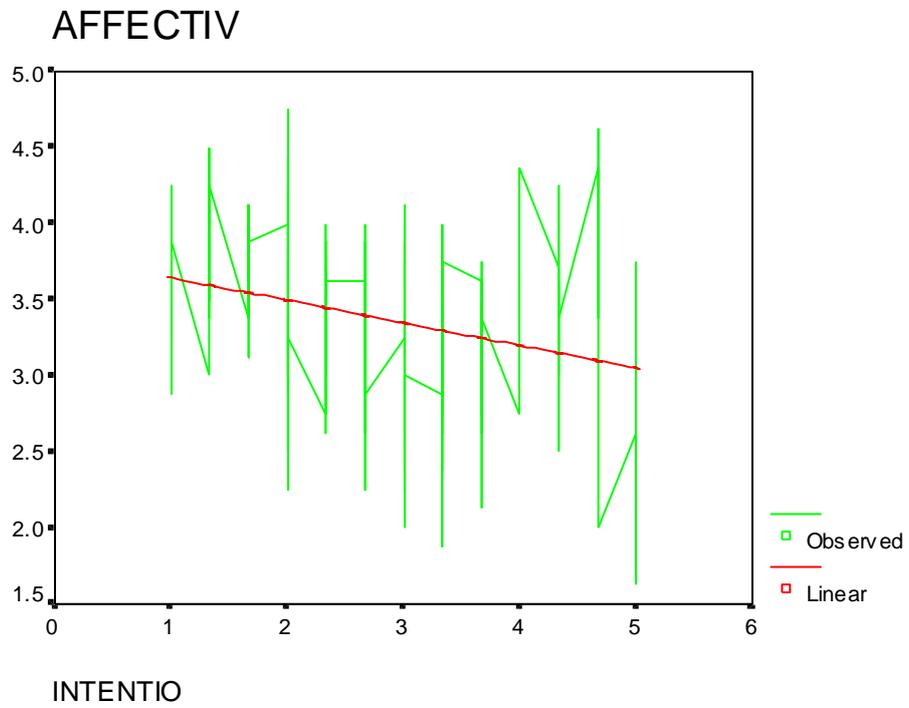
AFFECTIV

```
MODEL:  MOD_7.

Independent:  LEARNOPP


Dependent Mth   Rsq   d.f.       F  Sigf       b0        b1

AFFECTIV LIN   .183    190   42.47   .000  2.0199    .3784
```
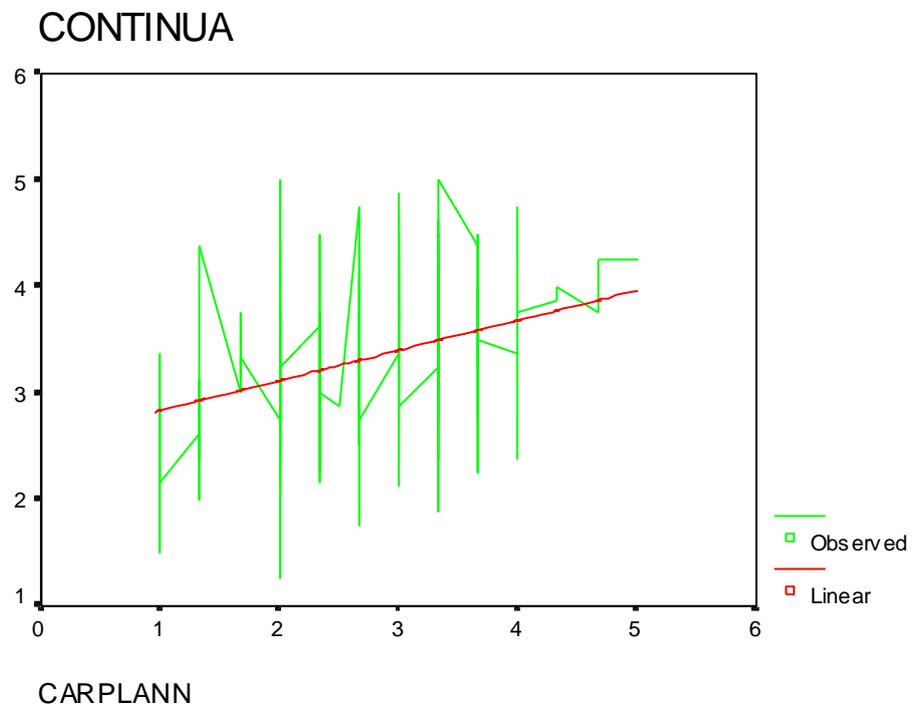
AFFECTIV

LEARNOPP

```
MODEL:  MOD_8.

Independent:  INTENTIO


Dependent Mth   Rsq  d.f.       F  Sigf        b0        b1

AFFECTIV LIN  .071    190   14.50  .000  3.7932  -.1483
```
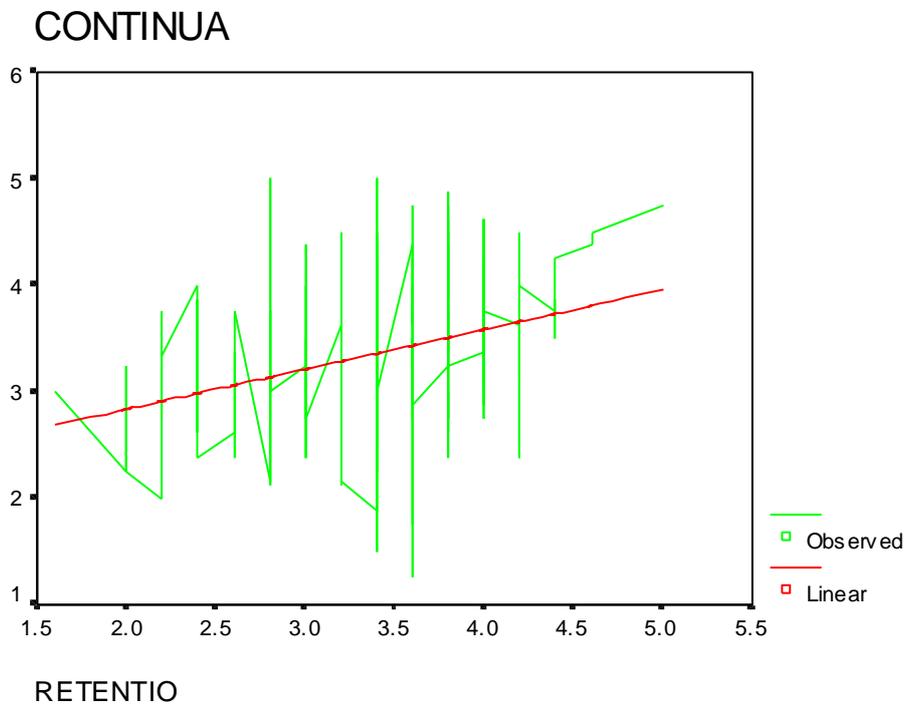
AFFECTIV

INTENTIO

```
MODEL:  MOD_11.

Independent:  CARPLANN


Dependent Mth   Rsq   d.f.       F  Sigf       b0        b1

CONTINUA LIN   .108    190   23.04   .000   2.5569     .2815
```
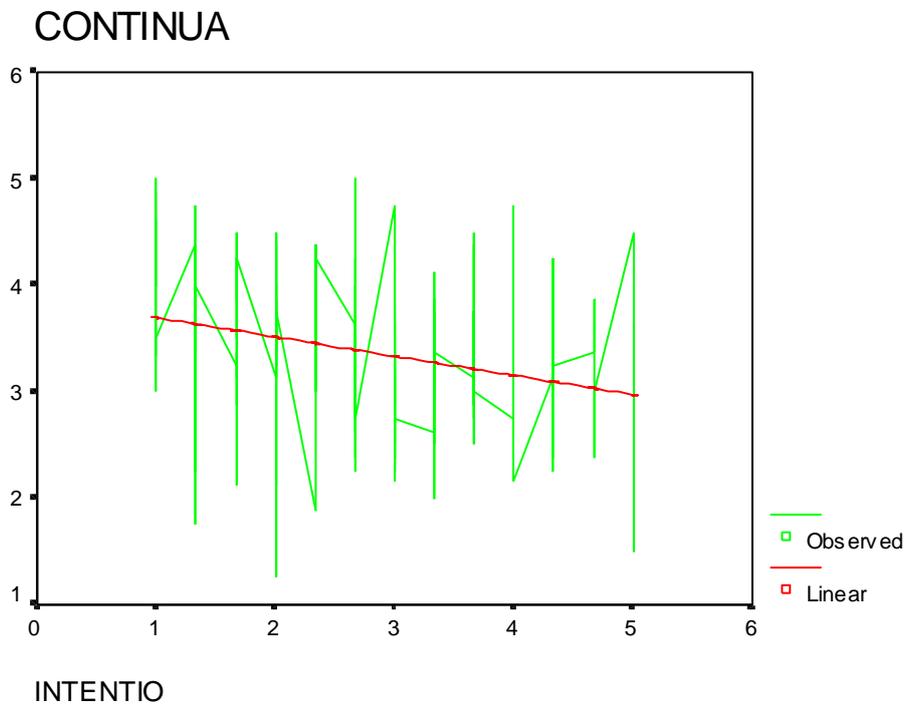
CONTINUA

CARPLANN

```
MODEL:  MOD_12.

Independent:  RETENTIO


Dependent Mth   Rsq  d.f.        F  Sigf       b0       b1

CONTINUA LIN   .095    190   19.85  .000  2.0894    .3734
```
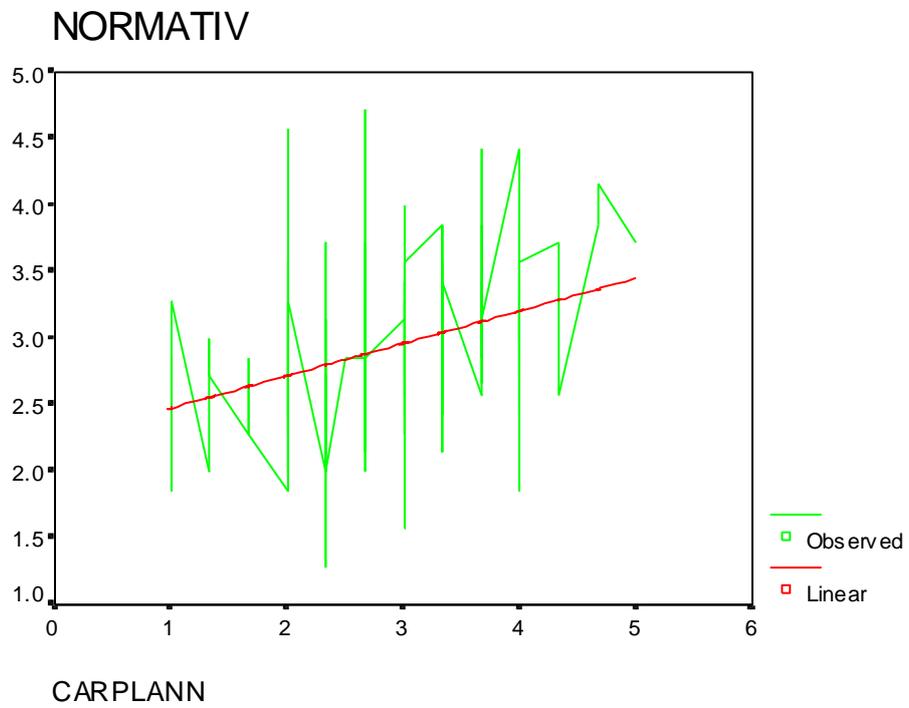
CONTINUA

RETENTIO

```
MODEL:  MOD_16.

Independent:  INTENTIO


Dependent Mth   Rsq  d.f.        F  Sigf       b0        b1

CONTINUA LIN   .064   190   13.10   .000  3.8749   -.1804
```
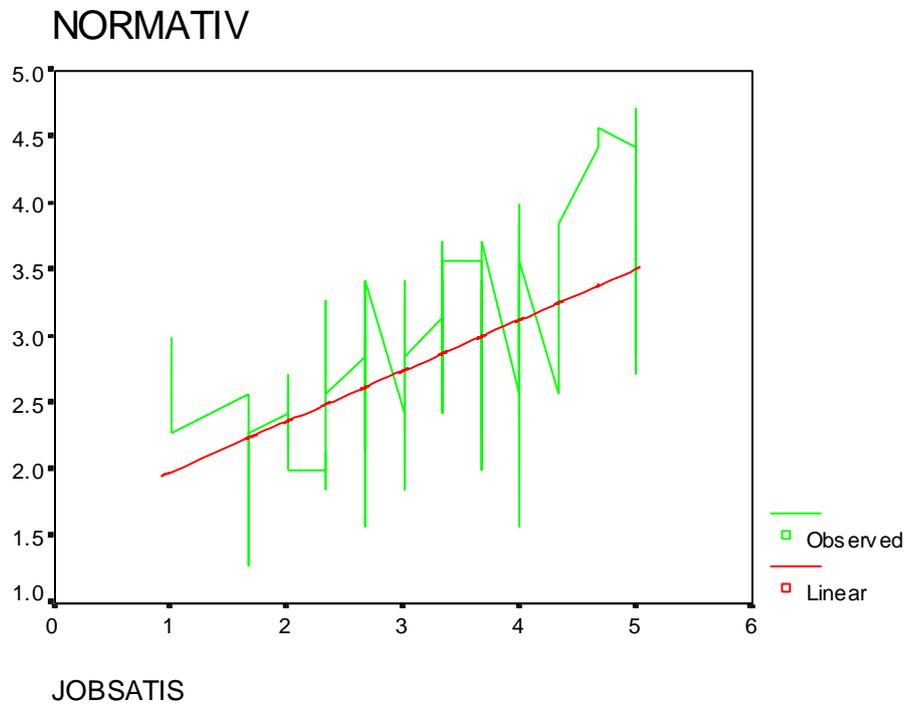
CONTINUA

INTENTIO

```
MODEL:  MOD_19.

Independent:  CARPLANN


Dependent Mth   Rsq  d.f.        F  Sigf       b0        b1

NORMATIV LIN   .117    178   23.52   .000  2.2343    .2432
```

NORMATIV

CARPLANN

```
MODEL:  MOD_22.

Independent:  JOBSATIS


Dependent Mth   Rsq  d.f.        F  Sigf        b0        b1

NORMATIV LIN  .255    178    61.06  .000  1.6086    .3807
```

NORMATIV

JOBSATIS

```
MODEL:  MOD_23.

Independent:  LEARNOPP


Dependent Mth   Rsq  d.f.       F  Sigf      b0        b1

NORMATIV LIN   .197   178   43.73  .000  1.4225    .4215
```

NORMATIV

LEARNOPP