The Application of Self-Determination Theory to Employee Motivation in Irish Workplaces

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2 Abstract

The majority of work organisations equate motivation with money and other extrinsic rewards, however, Self-Determination Theory (SDT) offers a powerful perspective on how and why individuals are motivated. This study aimed to apply a variant of the SDT hypotheses to organisations in Ireland, one private and one public, in order to understand attitudes to motivation and help direct future action to improve employee performance and engagement. The results from a mixed-quantitative design showed that Autonomous Motivation predicted higher Job Satisfaction and Organisation Commitment in both companies, and greater Well-being in the Private Company. Additionally, Perceived Autonomy Support was positively related to Autonomous Motivation, Organisation Commitment and Job Satisfaction. Differences highlighted included higher levels of Affective and Continuance Commitment in the Public Company; lower Continuance Commitment among younger employees, and higher Extrinsic Motivation among males. In conclusion, the study broadly supported the hypotheses and the principles set out in SDT.
3 Introduction

Building and sustaining high performance in work organisations has been the mainstay of business consultants and business schools since the Hawthorne experiments in the late 1920s; however, one aspect of performance that is becoming increasingly important is employee motivation as the modern workplace continues to change in terms of its complexity and unpredictability. Recently McKinsey & Co. reported that “employee motivation is sagging throughout the world….at a time when businesses need engaged leaders and other employees willing to go above and beyond expectations” (Dewhurst, Guthridge & Mohr, 2009, p. 3). Workplace surveys show that employees consistently ranked many job aspects higher than compensation including, being treated with respect, having a good work/life balance and the type of work that they do (e.g., Mercer, 2011, APA, 2012). Interestingly, the Mercer results from 30,000 employees across 17 countries are very consistent, particularly across the Americas and Europe including Ireland. Despite these persistent results most organisations appear wedded to focusing on compensation as the key to employee motivation (Dewhurst et al, 2009). This style of work motivation is steeped in the Operant Conditioning (Skinner, 1953) model of behaviour; which put simply maintains that rewarding a behaviour will get more of that behaviour while punishing a behaviour will get less. While this works in many situations one needs to be careful. Where pay is deemed adequate and fair and ‘Hygiene Factors’ (Herzberg, 1968) are met, then extrinsic motivators, particularly money, can undermine intrinsic motivation (Amabile, 1993, Deci & Ryan, 1985b, Frey, 2008, Gagne & Deci, 2005), reduce performance (Ariely, Gneezy, Loewenstein & Mazar, 2005, Bowles & Reyes, 2009), diminish creativity (Amabile, 1993, 2012) and in many cases ‘work too well’ leading to unethical or fraudulent behaviour (Baker, Jensen & Murphy, 1988). Recent real world examples of this last point can be seen in newspapers almost weekly with the miss-selling of financial products, to the manipulation of Libor rates
in the UK, to the moving of non-performing assets off-balance sheets unethically, if not fraudulently, to ensure bonus payments for executives.

The effect of rewards on intrinsic motivation has been termed the ‘over-justification effect’ in psychology (Bem, 1972) or the ‘crowding out effect’ in economics (Frey, 2008). Bruno Frey an Austrian economist called crowding out remarkable from an economics perspective as “a price increase is predicted to decrease, rather than increase, the supply of work offered” (2008, p. 38). Rewards are, however, very motivating in terms of achieving the reward but they can detract from the original reason the reward was put in place, as sociologist Philip Slater put it (1980, as cited in Baker et al, 1988, p. 5) “getting people to chase money… produces nothing but people chasing money”. Rewards and money in themselves are not necessarily the issue, but rather the contingent or controlling nature of them; this is why base salary and unexpected rewards do not have the same negative consequences alluded to by the research above (Frey, 2008, Gagne & Deci, 2005). Stanford Professor Jeffery Pfeffer (1998, p. 112) wrote “individual incentive pay, in reality undermines performance – of both the individual and organization”. Research carried out by McKinsey & Co. supports these findings. They surveyed over 1000 executives and found that non-financial motivators were more effective than cash and while monetary rewards generate short term boosts in energy it is not sustainable and indeed can bring negative consequences, (Dewhurst et al, 2009). Another McKinsey study consisting of over 100,000 employees and managers reported that the ‘carrot & stick’ approach was the least effective tool in terms of employee motivation (Leslie, Loch & Schaninger, 2006). Despite this prevailing evidence the majority of organisations still attempt to motivate employees through financial rewards (Pfeffer & Sutton, 2006). The reason for this contradiction is that it is difficult for managers
to go against the conventional wisdom (Stone, Deci & Ryan, 2008) or put another way; “we think others are motivated by money, even if we are not” (Pfeffer & Sutton, 2006, p. 115).

The purpose of this study is to apply the principles of Self-Determination Theory (Deci & Ryan, 1985b, 2000, Gagne & Deci, 2005) to Irish workplaces to assess employee attitudes to motivation. The proposition is that the results could help inform managers and companies in Ireland that sustainable employee motivation is facilitated by assisting employees satisfy their innate psychological needs. Managers that can understand employee needs should be better able to create an environment that fosters employee motivation and promotes overall job satisfaction, organisation engagement, well-being and performance. In a business climate of ever increasing complexity and competition for talent, such an environment should help improve productivity, innovation and talent retention. To provide context for the study the next sections will provide a review of the literature on intrinsic and extrinsic motivation, the impact of rewards and a detailed overview of Self-Determination Theory and its application in work organisations. It will then review how SDT compares to traditional work motivation theories and further explain the rationale for this study and the core hypotheses.

### 3.1 Intrinsic and Extrinsic Motivation

Motivation can be described as the energy that drives people to act and can result from physical, emotional, cognitive or social forces. A person who is motivated is energised towards a certain need or goal. The ‘drive theories’ of Freud (1925) and Hull (1943) explained human motivation in respect of ‘drives’, that is, sex and aggression in Freud’s case and hunger, thirst, sex and avoiding pain in Hull’s. The mid-20th century was dominated by behaviourism and Reinforcement Theory (Skinner, 1953) which espoused that behaviour, and
hence motivation, was caused by external stimuli and consequences. For decades researchers tried to develop systems that could fully explain behaviour from a drive and reinforcement perspective, however, it became clear that human behaviours such as play, personal challenge and other spontaneous activities were too complex to be explained by the these theories alone (Deci & Ryan 2000). Abraham Maslow was the first modern psychologist to move away from the concept that humans are passive and only driven by physiological urges and external stimuli. His theory of human motivation (Maslow, 1954) proffered that people are motivated by psychological as well as physiological needs. By the 1950s the prevailing motivation theories were Skinner’s and Maslow’s which had an ‘external’ and ‘internal’ focus respectively, which in turn helped articulate the concepts of intrinsic and extrinsic motivation. Intrinsic motivation was recognised in studies of animal behaviour, where it was discovered that animals engage in exploratory, playful and inquisitive behaviours, even when reinforcements were not in place (White, 1959).

While there are many definitions of, and arguments about, intrinsic and extrinsic motivation; Teresa Amabile (1993, p. 188), defined the difference as follows; “Individuals are intrinsically motivated when they seek enjoyment, interest, satisfaction of curiosity, self-expression or personal challenge in work” and “Individuals are extrinsically motivated when they engage in work in order to obtain some goal that is apart from the work itself”. It is generally accepted that intrinsic motivation is the ‘prototype’ of motivation (Grant & Shin, 2012) and it is where individuals are most likely to experience ‘optimal experience’ or ‘flow’ (Csikszentmihalyi, 1990). However, intrinsic motivation is not always desirable as it may not be aligned to an organisation’s objectives or as an extreme example both Himmler and Robespierre were surely intrinsically motivated (Frey, 2008). This study will assess the
relationship of intrinsic and extrinsic motivation to job satisfaction, organisational commitment, performance and well-being.

3.2 Impact of Rewards

In the latter half of the 20th century it was considered that intrinsic and extrinsic motivation were additive (e.g., Herzberg, 1968), that is, external rewards will add to intrinsic motivation increasing overall motivation. However, over the last forty years a wealth of experimental and real world data from psychology and economics, and more recently anthropology and neuroscience has shown that rewards can undermine intrinsic motivation as well as having other unintended consequences. In the 1970s Edward Deci carried out experiments with college students using a puzzle, similar to a Rubik’s cube, and observed a noticeable and surprising difference between groups; groups that were promised money were less likely to continue playing while no-money groups were more likely. Similar experiments in Stanford University carried out with pre-school children (Lepper, Greene & Nesbitt 1973) produced analogous results as contingent-reward groups were subsequently less intrinsically motivated than non-contingent groups. This effect was hypothesised as the ‘over-justification effect’ in Self-Perception Theory (Bem, 1972), that is, that the extrinsic reward changes the attribution of the individual from the original intrinsic reason for undertaking the task, to doing the task for money. Other experiments showed that it was not just the presence of contingent rewards but also that surveillance (Lepper & Greene, 1975) and deadlines (Amabile, DeJong & Lepper, 1976) produced this undermining effect. However, positive verbal reinforcement was shown to enhance intrinsic motivation (Deci, 1971, Amabile, 1993). The thirty years following these initial investigations saw additional laboratory experiments with diverse results and an on-going debate on the additive or subtractive impact of rewards. However, in 1999 a meta-analysis of 128 laboratory studies carried out (Deci,
Koestner & Ryan, 1999), the results of which established that tangible rewards had a negative effect on free-choice behaviour while verbal rewards had a positive effect.

Economics ignored these behavioural effects for most of the 20th century (Benabou & Tirole, 2003) and stuck with the traditional economic theory which did not take account of human psychological factors. Benabou & Tirole (2003, p. 492) revealed that “rewards may be only weak reinforcers in the short term and that, as stressed by psychologists, they may have hidden costs, in that they become negative reinforcers once they are withdrawn.” Bruno Frey (2008) reviewed both psychological and economic studies and experiments, and concluded that the crowding out effect of rewards (i.e., extrinsic motivators undermine intrinsic motivation) means that the principle of the conventional price effect needs to be amended, that is, a price increase will not always increase the supply of work. Finally, a paper written for the London School of Economics on economic incentives presented evidence from 51 experimental studies indicating that this crowding out effect is real (Bowles & Reyes, 2009).

Other unintended consequences of rewards include an impact on creativity; performance; and the promotion of unethical behaviour. The impact of rewards on creativity is a subject that Professor Teresa Amabile of Harvard University has studied for over thirty years. In her original experiments in the 1990s she engaged professional artists who were asked to produce works on a commissioned and non-commissioned basis (Amabile, 1993). Independent experts rated the commissioned work significantly less creative than the non-commissioned work and the commissioned artists felt constrained by the commission. Her research has highlighted ‘creativity killers’ including expected evaluation, surveillance, contingent rewards, competition and restricted choice (Amabile, 2012). In a prominent
experiment commissioned by the Boston Federal Reserve, behavioural economist Dan Ariely and his colleagues carried out a number of experiments in India and the US on the impact of rewards on performance (Ariely et al, 2005). The tests required participants to engage in various games requiring creativity as well as motor and cognitive skills. The purpose of the tests was to assess the impact of monetary rewards on performance. With few exceptions the results from both countries showed larger rewards were detrimental to performance. The Indian study enabled the experimenters to use more significant rewards; the large reward was equivalent to 5 months’ pay but it still produced the worst performance. The authors highlighted the prevalence of high performance-contingent incentives in organisations and maintain it “raises questions about whether administrators base their decisions on empirically derived knowledge of the impact of incentives or whether they are simply assuming that incentives enhance performance” (p. 20). Finally, Baker et al (1988) assessed the impact of rewards when delivered on an objective basis, for example, sales targets. Some of the negative consequences from such targets is that employees can ‘game’ the system or sacrifice quality to deliver targets and they summarise that “pay-for-performance systems are powerful motivators of human action, apparently so powerful that they induce counter-productive effects” (p. 10).

Recent experiments carried out by Warneken and Tomasello at the Max Planck Institute for Evolutionary Anthropology tested the altruistic behaviour of 14 month-old children through offering opportunities for the infants to hand over objects that an adult needed (2007). The results showed that the children reliably helped the adult achieve the goal, which implied an intrinsic motivation to help. This was followed by a similar experiment with 20 month-old children (2008) where they investigated the influence of rewards on this helping behaviour. The results showed that infants who received a material
reward for helping were subsequently less likely to engage in further helping behaviour when compared to those children who received praise or no reward at all. They concluded that the over-justification effect impacts the helping behaviours of infants as they are intrinsically motivated to help and the extrinsic rewards undermined this motivation. Finally, a recent experiment was undertaken to test this phenomenon from a neural perspective (Murayama, Matsumoto, Izuma & Matsumoto, 2010). Using a computer based task in a functional MRI machine neural activity was tracked during the tasks. Results indicated that performance-based monetary rewards undermined intrinsic motivation. Activity in the anterior striatum and the prefrontal areas decreased along with this behavioural undermining effect. They concluded that there is “evidence that the corticobasal ganglia valuation system plays a central role in the undermining effect”. (2010, p. 4)

Given that employee motivation, performance, creativity and ethical behaviour are accepted as desirable and important to work organisations one would expect companies to nurture these attributes. However, this appears not to be the case with performance based incentives and Reinforcement Theory still dominating motivation thinking in practice. (Pfeffer & Sutton, 2006). This study will assess the relationship between employee’s attitudes to intrinsic and extrinsic motivators and how this disposition impacts their job satisfaction, organisational engagement, performance and well-being.

3.3 Self-Determination Theory

Self-Determination Theory (Deci & Ryan, 1985b, 2000) proposes that individuals have three innate psychological needs, namely; autonomy - the need to feel a sense of choice (e.g., DeCharms, 1968); competence – the need to believe that one has the ability to do the job required (e.g., White, 1959, Bandura, 1997) and relatedness – the need to experience
meaningful, satisfying and supportive relationships (e.g., Baumiester & Leary, 1995). Self-Determination Theory (SDT) maintains that managers, educators, parents, health professionals and sportspeople that focus on nurturing these individual needs can reap the benefits of higher performing, more engaged and committed team members. The genesis of SDT was the early work of Edward Deci, and subsequently with Richard Ryan, produced a theory to explain the undermining effect of rewards on intrinsic motivation as discussed in Section 2.3. This theory was called Cognitive Evaluation Theory (CET) and explained the negative effect of extrinsic motivators on an individual’s feelings of autonomy as a change in their perceived locus of control from an internal one to external one; thus undermining intrinsic motivation. Motivation requires that individuals can see the relationship between the required behaviour and the desired outcome and in turn one is competent in performing the required behaviour. CET builds on the assumption that feelings of autonomy and competence are present in order to be, and to remain, intrinsically motivated. CET also explains why performance-contingent rewards undermine intrinsic motivation less than engagement-contingent rewards as the ‘achievement of the performance goal’ enhances the individual’s sense of competence. This research will assess the level of an employee’s intrinsic motivation and how it relates to their job satisfaction, organisational commitment and performance levels.

SDT expanded on CET to include extrinsic motivation and in particular the interplay between extrinsic forces acting on an individual and the individual’s own intrinsic needs. This distinction was a significant development as it is clear not all activities one must undertake are intrinsically motivating. In addition to CET, SDT includes a number of mini-theories including; the Organismic Integration Theory (OIT) which addresses extrinsic motivation and the extent to which external forces can be internally regulated through a
process of internalisation and Causality Orientations Theory (COT) which describes individual differences resulting from the degree to which an individual’s needs are satisfied or not; and hence their tendency to orient towards controlled or autonomous environments. An autonomous orientated individual will prefer aspects of the job that stimulate intrinsic motivation, while a controlled orientated individual will lean toward external factors such as rewards and deadlines. Finally, an impersonal oriented individual will feel that the desired outcome is beyond their control.

The OIT mini-theory proffers that human beings are active organisms and individuals develop through the process of organismic integration as they proactively engage with the world around them. This view builds upon both Piaget’s organisational principle that humans orient themselves towards ever more complex conditions (Piaget, 1964) as well as the humanistic perspective of self-actualisation (Maslow, 1954). OIT is an important motivation theory in that it distinguishes between ‘autonomous motivation’ and ‘controlled motivation’. Autonomy is doing something from one’s own will and having the feeling of choice; whereas control indicates the presence of some sort of pressure. Intrinsic motivation, as described above, is a type of autonomous motivation. Both motivations indicate that there is ‘purpose’ while amotivation is defined as lack of intention. OIT suggests that behaviour can be described by the degree to which it is autonomous or controlled and is presented as a ‘self-determination continuum’ (Figure 1). OIT hypothesises that autonomous and controlled motivations differ in terms of their underlying regulatory processes, that is; is the regulation more internally or externally controlled.
This continuum makes the distinction between amotivation and the different degrees of extrinsic motivation and intrinsic motivation. Extrinsic motivation can become more self-regulated along the continuum through the process of internalisation; individuals can ‘take in’ external values and attitudes such that the behaviour can be transformed from an externally regulated one to a more internally regulated one. The first type of extrinsic motivation described in the continuum is external regulation, where an individual’s actions are controlled in that the person acts to obtain or avoid certain consequences, for example. ‘I study because I will get a reward or avoid a punishment’. The ‘internalised’ types of extrinsic motivation described on the continuum are ones where external incentives are no longer required. The first type of internally regulated extrinsic motivation is ‘introjection’ where an individual partially takes in the behaviour by effectively replacing an external force with an internal pressure, for example, ‘I study because my parents would be upset if I did not and I would
feel guilty’. The next level of internalisation is ‘identification’ which means the behaviour is in line with the individual’s goals and identity and is more autonomously motivated because the individual can identify with their own behaviour, for example, ‘I study because I understand I need to, to achieve my goal’. Thus, this action is undertaken volitionally and is considered to be important. The fullest internalisation of an extrinsic motivation is called ‘Integrated regulation’ and means that the individual has fully assimilated the behaviour, for example, ‘I study as it’s part of what I do’. It is important to remember that while integrated and identified can be considered autonomous motivation they are not intrinsic motivation; which using the above examples would be characterised by ‘I enjoy studying’. SDT is concerned with the degree to which behaviour is autonomous versus controlled; identified regulation and integrated regulation are, together with intrinsic motivation, categorised as autonomous motivation while controlled motivation consists of external regulation and introjected regulation. SDT hypothesises that those who are autonomously motivated will have better outcomes for themselves and their organisation, thus, as part of this study an employee’s motivation-type will be assessed and related to various job outcomes.

3.4 SDT in Work Motivation

Gagné and Deci (2005) provided an overview of SDT as a work motivation theory and proposed an agenda for further research. In 1989 Deci, Connell and Ryan found that where managers supported employee autonomy it increased employee satisfaction and their trust in management. Another study by Baard, Deci and Ryan (2004) showed that the satisfaction of psychological needs improved performance. A SDT study in Bulgaria and the US (Deci et al, 2001) demonstrated that having an autonomy supportive manager predicted satisfaction of the basic psychological needs and resulted in greater well-being in both geographies. For uninteresting activities, that is tasks that are not intrinsically motivating, SDT contends that
the internalisation process can give employees feelings of autonomy, competence and relatedness so they become more autonomously motivated. Internalising of such routine tasks does not necessarily increase performance (Koestner & Losier, 2002); however, it appears to provide employees with greater job satisfaction and well-being (Ilardi, Leone, Kasser & Ryan, 1993, Shirom, Westman & Melamed, 1999). Kuvaas (2006) used SDT to investigate the relationship between work motivation, performance and commitment with employee pay levels at a large Norwegian Oil Company. His key finding was that base pay level, but not bonus, was positively related to work performance and organisation commitment. A further study tested SDT among Public Sector employees where he concluded that “job autonomy, supervisor support for competence development and autonomy and task interdependence positively influence intrinsic motivation” (Kuvaas, 2008, p. 46). Finally, Lam and Gurland (2008) in a study of 160 non-faculty employees in a New England college demonstrated that autonomy-orientation predicted higher levels of job satisfaction. Many SDT work organisation studies (e.g., www.selfdeterminationtheory.org) have supported the contention that autonomy-supportive environments promote intrinsic and internalisation of extrinsic motivation which in turn improves performance and satisfaction.

3.5 Work Motivation Theories

Frederick Taylor through his scientific management approach (1911, as cited in Steers, Mowday & Shapiro, 2004) applied industrial engineering principles to overcoming factory inefficiencies and included some elements of job design, job training and incentive pay. However, it fell in to disrepute as it was seen as exploitative and led to the rise of union membership in the 1930s. At this time behaviourism and later Operant Conditioning (Skinner, 1953) became very influential in terms of behaviour modification. Maslow’s needs
approach (1954) moved away from behaviour been driven only by stimuli and consequences and considered both the physical and psychological needs of the human being. McGregor (1960, cited in Latham & Pinder, 2005) built on the concept of needs in defining Theory X and Y, where managers manage based on whether they consider their employees to be type X, that is lazy, untrustworthy, motivated by money and need to be controlled or type Y, moral, responsible and seek self-development. Fredrick Herzberg (1968) termed the motivation wisdom of the time as KITA (a kick-in-the-pants); there was both negative and positive KITA, that is you can punish someone for not doing what you want or reward them for doing it; either way you are ‘controlling’ the motivation. Herzberg’s Two-Factor theory focused on two categories of motives, namely satisfiers or motivators and dis-satisfiers or hygiene factors. Hygiene factors include elements like company policies, salary and work conditions while satisfiers refer to achievement, recognition and the work itself. His critical insight was that the presence of hygiene factors prevent dis-satisfaction but will not lead to satisfaction; however, if hygiene and satisfiers are present then there will be motivation and hence job satisfaction. Another contribution from Herzberg was job enlargement and enrichment to increase the presence of satisfiers; Hackman & Oldman (1976) extended this work with their job characteristics model of work motivation which proffered that individuals are internally motivated when they experience meaning, responsibility for outcomes and knowledge of the results of their work.

Grant and Shin (2012) maintain that the five core theories of work motivation today are expectancy theory, equity theory, goal-setting theory, job design theory and self-determination theory. Interestingly, Latham and Pinder (2005) did not mention self-determination theory in their review of work motivation, while Steers et al (2004) only briefly cited it. Vroom’s (1964) Expectancy Theory which focused on the importance of
expectations to motivation, that is, an employee will assess can he perform the action (expectancy), would performing the action lead to identifiable outcomes (instrumentality) and does he want or value the outcome (valence) while Equity Theory (Adams, 1963 cited in Grant & Shin, 2012) maintains that employees are motivated by their sense of fairness. Goal-Setting Theory (Locke & Latham, 1984) built upon aspects of Bandura’s self-efficacy beliefs and proposed that motivation was facilitated from focused effort and action to achieve goals. Significant research supports this behavioural model of motivation and where a goal is specific and difficult, the employee accepts and is committed to the goal and gets feedback then their performance and persistence improves. For practical applications of these theories in the workplace the most common interventions appear to be reinforcement, goal-setting and job design as they are all ‘tangible’ in terms of their implementation and measurement. Needs theories and cognitive theories on the other hand have been criticised for lack of empirical support and the ability to measure the success of the intervention. Even though SDT is a humanistic theory in terms of its psychological needs focus, it is unlike the traditional need theories in that it is supported by many hundreds of empirical studies across different fields.

On reviewing work motivation theories the contention of this study is that SDT has potential as a unifying macro-theory of work motivation that complements the most practical theories. For example, when using reinforcement theory SDT could bring an understanding that motivation is not just extrinsic and when designing reward programmes one needs to be careful not to thwart the very reason for putting the rewards in place. In terms of goals, SDT supports goal setting’s concepts of the importance of job rationale and challenge, however, it proposes that these goals can be intrinsic or extrinsic in nature which goal setting does not differentiate; hence, the important question from an SDT perspective is; is the goal autonomous or controlled? An employee goal may be challenging, have their commitment
and the necessary competence, and be aligned to the company goal but the individual may feel controlled by their manager and hence potentially less motivated. Thus, the satisfaction of the core psychological need of autonomy is potentially an essential prerequisite for the successful application of goal setting.

In summary, SDT differs from other work motivation theories through the concept of the ‘motivation continuum’; the fact that intrinsic and extrinsic motivation are not necessarily additive and it is focused not on the amount of motivation but rather the relative strength of controlled versus autonomous motivation. This research will assess the impact of an employee’s perception of autonomy on the relationship between their motivation and their job satisfaction, organisational commitment, performance and well-being.

3.6 Project Rationale

Most work organisations and their managers still equate motivation with money and other extrinsic rewards despite the evidence to the contrary (e.g., Dewhurst et al., 2009). SDT offers a persuasive view on how and why individuals are motivated across multiple domains. Many SDT empirical studies from economics and psychology support autonomous motivation yet controlled motivation remains the dominant approach in practice (Pfeffer & Sutton, 2006). While there have been many studies of SDT in the field of work motivation (e.g., www.selfdeterminationtheory.org); this research aims to test a significant part of the SDT ‘work organisation research agenda’ suggested by Gagne & Deci (2005) in order to further assess SDT as a credible work motivation theory. This will be the first time that SDT is tested in Irish work organisations and more critically, while SDT has been tested in both public and private sector companies, this project will look for differences across a public and
private company as part of the same study. The research is concerned with autonomous motivation which can come from both intrinsic, or well-internalised extrinsic sources; each of which should have a similar propensity to satisfy the individual psychological needs of autonomy, competence and relatedness.

The reason why this study is important is that in today’s business environment jobs require more and more creative and non-algorithmic thinking and companies require a more engaged and committed workforce for success. Despite this companies continue to use traditional motivation techniques which can be counter-productive and unnecessarily costly (Pfeffer & Sutton, 2006). The aim of this study was to assess the importance of satisfying an employee’s psychological needs in order to be autonomously motivated and evaluate the significance of autonomous motivation to job satisfaction, organisational engagement, performance and well-being. In addition, it will attempt to understand the differences associated with an employee’s organisation type, age and gender and the moderating effect of an employee’s personal causality orientation and perceived autonomy-support. If satisfying an employee’s psychological needs can be accepted as beneficial to the employee and the organisation then there is potential to further validate SDT in different organisation types and locations; develop targeted management intervention programmes that promote autonomous motivation and finally design reward programmes that support, rather than hamper, motivation. In summary, the rationale was to test an approach to motivation that has the potential to support happier, healthier, more engaged and better performing employees, which in the longer term could help improve not only company performance but also citizen well-being and economic performance.
3.7 Hypotheses

The study attempted to determine the major influences on employee motivation using questionnaires from Self-Determination Theory and other reliable and validated sources. The study is a variant of the proposed ‘SDT work organisation research agenda’ (Figure 2) and was applied within two Irish commercial organisations; one public and one private.

![The Social Environment Diagram]

Figure 2. Proposed Work Organisation Research Agenda – Gagne & Dec (2005)

The hypotheses tested in the study were:

H1 – There is a positive correlation between Satisfaction of Psychological Needs and Autonomous Motivation

H2 – There is a positive correlation between Autonomous Motivation and Job Satisfaction
H3 – There is a positive correlation between Autonomous Motivation and Organisational Commitment

H4 – There is a positive correlation between Autonomous Motivation and Performance

H5 – There is a positive correlation between Autonomous Motivation and Well-being

H6 – Explore the relationship of an individual employee’s Causality Orientation to the outcome variables

H7 – Explore the relationship of an employee’s Perceived Autonomy Support to the outcome variables

H8 – Explore differences associated with an employee’s Organisation Type

H9 – Explore differences associated with an employee’s Gender

H10 – Explore differences associated with an employee’s Age
4 Methods

4.1 Participants

The participants in the study were drawn from two Irish commercial organisations; a privately owned IT Services company (Private Company) that provides IT services to Financial Services, Government and Utilities sectors; and a large state-owned utility organisation (Public Company). The targeted personnel were full-time employees, (i.e., not independent contractors). Job type was controlled for by drawing participants from the Public Company’s IT Department only, thus, those targeted from both companies were involved in designing, developing, implementing and supporting IT systems for enterprise-class businesses.

4.2 Design and Materials

The research design employed for the study was a mixed quantitative design. The first part of the study planned to test the hypotheses within each company using a Correlational Design to examine the strength of variable relationships and the second part planned to use a Cross Sectional Design to check for differences across the companies. The predictor variables measured to test the hypotheses included Satisfaction of Psychological Needs and Autonomous Motivation, while the criterion variables were employee Job Satisfaction, Organisation Commitment, Well-being and Performance. In addition, the study planned to explore the relationship of an individual’s Perceived Autonomy Support and Causality Orientation to these variables and finally test for differences associated with an individual’s organisation type, gender and age. The instruments used in the study were sourced from
previous SDT studies and other validated and reliable sources and are described below. See Appendix 1 for full details of the questionnaires used.

4.2.1 Basic Psychological Needs Satisfaction

Central to SDT is the idea that human beings have universal and innate psychological needs. These psychological needs for competence, autonomy, and relatedness were measured using a 7-point scale which has 21 items (Deci, Ryan, Gagne, Leone, Usunov & Kornazheva, 2001). Participants were asked how true each of the statements is for them given their experience in their job; responses are from 1 (not true at all) to 7 (very true). Seven of the items measure autonomy (e.g., “I feel I can make a lot of inputs into how my job gets done”), six items measure competence (e.g., “Most days I feel a sense of accomplishment from working”) and finally eight assess relatedness (e.g., “I get along with people at work”). A composite score was derived for each subscale; Satisfaction of Autonomy Needs, Competence Needs and Relatedness Needs, by averaging the relevant item responses.

4.2.2 Autonomous Motivation

The Motivation at Work Scale (Gagne’, M., Forest, J., Gilbert, M., Aube’, C., Morin, E., & Malorni, A., 2010) was used to evaluate Autonomous Motivation related to the employee’s work. Participants rated on a 7-point scale to what degree certain reasons corresponded to them doing their specific job and ranged from 1 (not at all) to 7 (exactly). It is 12-item questionnaire with six items evaluating Autonomous Motivation and six evaluating Controlled Motivation. Autonomous Motivation is further broken down to three items for Intrinsic Motivation (e.g., “Because I enjoy the work very much”) and three for Identified Motivation (e.g., “Because my job fits my personal values”). Similarly, Controlled Motivation is divided into three items for Introjected Motivation (e.g., “Because my reputation depends on it”) and three items for Extrinsic Motivation (e.g., “I do this job for the
paycheck”). A composite score for each subscale was created by averaging the responses. Composite scores for Autonomous and Controlled Motivation were created by averaging their subscales.

### 4.2.3 Job Satisfaction

Employee Job Satisfaction was measured using the Job Descriptive Index (Smith, Kendall, & Hulin, 1969). Two parts of the scale were employed in this study, namely, Work on Present Job and Job in General. Work on Present Job asks participants to rate how closely a word describes their work (e.g. “Fascinating”, “Routine”, “Creative”) and Job in General asks to rate against the job (e.g., “Pleasant”, “Rotten”, “Enjoyable”). There are 18 such words in each section and participants rate ‘Yes’, ‘No’ or ‘Can’t Decide’. A ‘Yes’ scores ‘3’, a ‘No’ scores ‘0’ and a ‘Can’t Decide’ scores ‘1’. A composite satisfaction score is derived by first reversing negative words (“e.g., ‘N’ for ‘Boring’ is reversed to ‘3’) and summing the scores across both scales.

### 4.2.4 Organisational Commitment

An individual’s commitment to the organisation was measured using the Organisational Commitment Scale (Meyer, Allen & Smith, 1993). The scale is a 7-point scale which asks participants to rate the degree to which they agree with 18 work related statements (e.g., “This organisation has a great deal of personal meaning for me”). The responses range from 1 (strongly disagree) to 7 (strongly agree). The scale is further divided into three types of commitment, namely, Affective, Continuance and Normative where six items relate to each type. The affective component of organisational commitment refers to employees' emotional attachment and identification with the organisation (e.g., “I would be happy to spend the rest of my career with this organisation”). The continuance component captures commitment that is based on the cost to the employee of leaving the organisation
(e.g., “I feel that I have too few options to consider leaving this organisation”). Finally, the normative element of the scale points to the employees' feelings of obligation to stay with the organisation (e.g., “I owe a great deal to my organisation). Scores for each subscale are averaged to yield a composite commitment score for each type.

4.2.5 Well-being

To measure well-being the shortened version of the General Health Questionnaire (GHQ-12) was used (Goldberg & Williams, 1988). The questionnaire consists of 12 items which asks the participants whether they have recently experienced a particular symptom or behaviour (e.g., “been able to concentrate on whatever you’re doing?”). The respondent uses a 4-point scale of ‘better than usual’, ‘same as usual’, ‘less than usual’ and ‘much less than usual’ and responses are scored 0, 1, 2 and 3 respectively. Scores are then added across the 12 items and the lower the score the better the indicator of well-being.

4.2.6 Performance

Employee performance was captured by asking employees to give the result of their last performance review based on a 3-point scale of ‘less than satisfactory’, ‘satisfactory’ and ‘greater than satisfactory’. Where employees had not had a performance review they were asked to rank themselves on the scale.

4.2.7 Perceived Autonomy Support

To assess an employee’s Perception of Autonomy Support the Work Climate Questionnaire was used (Baard, Deci & Ryan, 2000). The instrument uses 15 items and asks participants to assess them related to their direct experience with their immediate manager or supervisor (e.g., “I feel understood by my manager”). Each item is rated using a 7-point scale
from 1 (strongly disagree) to 7 (strongly agree). Scores are calculated by averaging individual items. Higher average scores represent higher levels of Perceived Autonomy Support.

**4.2.8 General Causality Orientation**

To assess the personality aspects of an individual’s motivation orientation the General Causality Orientation Scale was used (Deci & Ryan, 1985a). The scale is divided into three subscales of Autonomy Orientation, Controlled Orientation, and Impersonal Orientation and assesses the strength of each orientation. The scale consists of situations or vignettes, such as; “You have been offered a new position in a company where you have worked for some time. The first question that is likely to come to mind is:” and participants are asked to rate the likelihood of them selecting each of the response choices (e.g., 1.”What if I can’t live up to the new responsibility?”), 2. “Will I make more at this position?”, 3. “I wonder if the new work will be interesting”. A 7-point scale is used and the respondent rates from 1 (very unlikely) to 7 (very likely) for each item. In total there are 12 situations and 36 items. The Autonomy Orientation assesses the extent to which a person is oriented toward aspects of their job that stimulate intrinsic motivation. The Controlled Orientation considers the extent to which a person leans toward being controlled by external factors such as rewards and deadlines. Finally, the Impersonal Orientation gauges the extent to which a person believes that attaining desired outcomes is beyond their control. Scores are calculated for the three subscales of autonomy (A), controlled (C) and impersonal (I) by summing each individual’s 12 responses across the subscale, for example, in the three questions above 1 = I, 2 = C, 3 = A. Higher scores indicate higher amounts of that particular orientation represented by the response.
4.3 Procedure

These instruments were combined into a single questionnaire and entered into Survey Monkey. In the private organisation a senior executive sent an email to 69 employees requesting assistance for the project. In the public company a senior manager in the IT department sent emails to 5 reporting managers and the email was then forwarded to their staff; approximately 120 received the request to participate. Participants were pointed to Survey Monkey electronic link in the email to complete the questionnaire. The questionnaire was completed on an anonymous basis and each participant was offered, through their company, feedback on the results of the study.
5 Results

Table 1 Respondent Demographics

<table>
<thead>
<tr>
<th></th>
<th>Private Company</th>
<th>Public Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Responses</td>
<td>53</td>
<td>47</td>
</tr>
<tr>
<td>Female</td>
<td>16</td>
<td>29</td>
</tr>
<tr>
<td>Male</td>
<td>37</td>
<td>18</td>
</tr>
<tr>
<td>Female (%)</td>
<td>30.2%</td>
<td>61.7%</td>
</tr>
<tr>
<td>Male (%)</td>
<td>69.8%</td>
<td>38.3%</td>
</tr>
<tr>
<td>Age &lt; 35</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Age 35 to 49</td>
<td>29</td>
<td>26</td>
</tr>
<tr>
<td>Age 50+</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>Age 50+ (%)</td>
<td>17%</td>
<td>34%</td>
</tr>
</tbody>
</table>

The demographic information for employees who responded to the questionnaire is shown in the table above. The response rate was 77% for the Private Company and 39% for the Public Company. While the number of respondents from each company is similar there were almost twice as many female respondents in the Public Company compared to the Private one. There were also three times as many under-35 year old respondents in the Private Company compared to the Public Company and conversely, there were almost twice as many 50+ respondents in the public organisation. The individual performance ratings for each company are shown in Table 2. In the Private Company 46 respondents (87%) indicated that the performance measure was from their last annual review as opposed to self-assessment, while in the public organisation only 13 respondents (28%) indicated the score was from their last review.
The means, standard deviations and the number of completed responses for each of the tested variables are presented in the Table 3 below for each organisation type.

### Table 2 Performance Rating

<table>
<thead>
<tr>
<th>Less than Satisfactory</th>
<th>Private Company</th>
<th>Public Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>26</td>
<td>49.1%</td>
</tr>
<tr>
<td>Greater than Satisfactory</td>
<td>27</td>
<td>50.9%</td>
</tr>
</tbody>
</table>

### Table 3 Means and Standard Deviation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Private Company</th>
<th>Public Company</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Basic Psychological Needs Satisfaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction of Autonomy Needs</td>
<td>5.30</td>
<td>.55</td>
</tr>
<tr>
<td>Satisfaction of Competence Needs</td>
<td>5.62</td>
<td>.66</td>
</tr>
<tr>
<td>Satisfaction of Relatedness Needs</td>
<td>5.66</td>
<td>.61</td>
</tr>
<tr>
<td>Autonomous Motivation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsically Motivation</td>
<td>4.48</td>
<td>1.2</td>
</tr>
<tr>
<td>Identified Motivation</td>
<td>4.19</td>
<td>1.2</td>
</tr>
<tr>
<td>Introjected Motivation</td>
<td>3.22</td>
<td>1.45</td>
</tr>
<tr>
<td>Extrinsic Motivation</td>
<td>4.12</td>
<td>1.16</td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>83.28</td>
<td>17.35</td>
</tr>
<tr>
<td>Organisational Commitment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affective Commitment</td>
<td>4.85</td>
<td>.78</td>
</tr>
<tr>
<td>Continuance Commitment</td>
<td>4.40</td>
<td>1.19</td>
</tr>
<tr>
<td>Normative Commitment</td>
<td>4.41</td>
<td>1.07</td>
</tr>
<tr>
<td>Performance</td>
<td>2.51</td>
<td>.50</td>
</tr>
<tr>
<td>Well-being</td>
<td>8.80</td>
<td>4.72</td>
</tr>
<tr>
<td>Perceived Autonomy Support</td>
<td>5.51</td>
<td>.72</td>
</tr>
<tr>
<td>Causality Orientation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Orientation</td>
<td>49.07</td>
<td>5.62</td>
</tr>
<tr>
<td>Impersonal Orientation</td>
<td>38.2</td>
<td>9.63</td>
</tr>
<tr>
<td>Autonomy Orientation</td>
<td>69.47</td>
<td>5.24</td>
</tr>
</tbody>
</table>
In order to test the study’s hypotheses inferential statistics were employed to assess the soundness of each premise. To simplify the presentation of results the hypotheses outlined on page 23 were grouped as follows: H1, H2 – H5, H6 & H7 and finally H8 – H10. Prior to testing the hypotheses normality tests were carried out in SPSS to designate the use of parametric or non-parametric testing.

**5.1 Hypothesis 1 – Satisfaction of Psychological Needs & Autonomous Motivation**

Hypothesis 1 stated “there is a positive correlation between Satisfaction of Psychological Needs and Autonomous Motivation”. To test the relationship a bivariate correlation was carried out in SPSS and the results are presented in the Tables 4 and 5 below for each organisation.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Autonomy Needs</th>
<th>Competence Needs</th>
<th>Relatedness Needs</th>
<th>Autonomous Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy Needs</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competence Needs</td>
<td>.55***</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relatedness Needs</td>
<td>.45*</td>
<td>.64**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Autonomous Motivation</td>
<td>.47**</td>
<td>.67***</td>
<td>.58***</td>
<td>1</td>
</tr>
</tbody>
</table>

* p significant at .05 level, ** p significant at .01 level, *** p significant at .001 Level.

In the Private Company the mean scores for Satisfaction of Autonomy Needs was 5.30 (SD = 0.55) and for Autonomous Motivation was 4.33 (SD = 1.12). A 1-tailed Pearson correlation coefficient found that there was a significant positive relationship between Satisfaction of Autonomy Needs and Autonomous Motivation (r (44) = 0.47, p < .01).
mean scores for Satisfaction of Competence Needs was 5.62 (SD = 0.66) and for Autonomous Motivation was 4.33 (SD = 1.12). A 1-tailed Pearson correlation coefficient found that there was a significant strong positive relationship between Satisfaction of Competence Needs and Autonomous Motivation (r (44) = 0.67, p < .001). The mean scores for Satisfaction of Relatedness Needs was 5.66 (SD = 0.61) and for Autonomous Motivation was 4.33 (SD = 1.12). A 1-tailed Pearson correlation coefficient found that there was a significant strong positive relationship between Satisfaction of Relatedness Needs and Autonomous Motivation (r (44) = 0.58, p < .001).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Autonomy Needs</th>
<th>Competence Needs</th>
<th>Relatedness Needs</th>
<th>Autonomous Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy Needs</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competence Needs</td>
<td>.72***</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relatedness Needs</td>
<td>.73***</td>
<td>.62***</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Autonomous Motivation</td>
<td>.59***</td>
<td>.70***</td>
<td>.53***</td>
<td>1</td>
</tr>
</tbody>
</table>

*p significant at .05 level, ** p significant at .01 level, *** p significant at .001 Level.

In the Public Company the mean scores for Satisfaction of Autonomy Needs was 5.33 (SD = 0.70) and for Autonomous Motivation was 4.10 (SD = 1.37). A 1-tailed Pearson correlation coefficient found that there was a significant strong positive relationship between Satisfaction of Autonomy Needs and Autonomous Motivation (r (45) = 0.59, p < .001). The mean scores for Satisfaction of Competence Needs was 5.67 (SD = 0.78) and for Autonomous Motivation was 4.10 (SD = 1.37). A 1-tailed Pearson correlation coefficient found that there was a significant strong positive relationship between Satisfaction of Competence Needs and Autonomous Motivation (r (45) = 0 .70, p < .001). The means scores for Satisfaction of Relatedness Needs was 5.59 (SD = .71) and for Autonomous Motivation
was 4.10 (SD = 1.37). A 1-tailed Pearson correlation coefficient found that there was a significant strong positive relationship between Satisfaction of Relatedness Needs and Autonomous Motivation ($r(45) = 0.53$, $p < .001$).

Figure 3 below shows the comparison of the correlation coefficients for both companies in terms of how the Satisfaction of Psychological Needs relates to Autonomous Motivation.

![Correlation Coefficient Chart](image)

**Figure 3: Satisfaction of Psychological Needs and relationship to Autonomous Motivation**

In addition, to the correlations a linear regression was carried out on the variables and found that for both the private and public companies Satisfaction of Competence Needs is a predictor of Autonomous Motivation. In the Private Company Satisfaction of Competence Needs significantly predicted Autonomous Motivation ($F(1,44) = 35.74$, $p < .001$, $R^2 = .45$) (Satisfaction of Competence Needs, beta = .70, $p < .001$). Confidence limits were narrow, showing that 95% of the population slope is between 0.78 and 1.58. In the public company Satisfaction of Competence Needs significantly predicted Autonomous Motivation ($F(1,45) =$
23.59, p < .001, R² = .34) (Satisfaction of Competence Needs, beta = .59, p < .001). Confidence limits were narrow, showing that 95% of the population slope is between 0.85 and 1.59.

5.2 Hypotheses 2 to 5 – Autonomous Motivation

Hypotheses 2 to 5 proffered that there was a positive relationship between Autonomous Motivation and Job Satisfaction, Organisational Commitment, Performance and Well-being respectively. Bivariate correlations were run in SPSS to test each hypothesis and the results are shown in Table 6 for the Private Company and Table 7 for the Public Company. All coefficients shown were generated using a Pearson Correlation except for Performance which used the Spearman Rho method. To avoid confusion the measure for Well-being was reverse-signed in the table as the measure used for Well-being indicates better Well-being at lower scores, hence, a positive correlation would show as a negative if left unchanged.

Table 6: Autonomous Motivation - Private Company

<table>
<thead>
<tr>
<th>Variable</th>
<th>Autonomous Motivation</th>
<th>Job Satisfaction</th>
<th>Affective Commitment</th>
<th>Continuance Commitment</th>
<th>Normative Commitment</th>
<th>Performance</th>
<th>Well Being</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomous Motivation</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>.56***</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affective Commitment</td>
<td>.55***</td>
<td>.39**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuance Commitment</td>
<td>.01</td>
<td>.19</td>
<td>.06</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normative Commitment</td>
<td>.51***</td>
<td>.47***</td>
<td>.69***</td>
<td>.22</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>.24</td>
<td>.19</td>
<td>.24</td>
<td>-.01</td>
<td>.25**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Well Being</td>
<td>.47**</td>
<td>.37**</td>
<td>.16</td>
<td>.05</td>
<td>.19</td>
<td>.08</td>
<td>1</td>
</tr>
</tbody>
</table>

*p significant at .05 level, ** p significant at .01 level, *** p significant at .001 Level.
5.2.1 H2 – Autonomous Motivation & Job Satisfaction: Private Company

In the Private Company mean scores for Autonomous Motivation was 4.33 (SD = 1.12) and for Job Satisfaction was 83.28 (SD = 17.35). A 1-tailed Pearson correlation coefficient found that there was a significant strong positive relationship between Autonomous Motivation and Job Satisfaction (r (44) = 0.56, p < .001). In addition, a linear regression analysis found that Autonomous Motivation significantly predicted Job Satisfaction (F(1,44) = 20.56, p < .001, R² = .31) (Autonomous Motivation, beta = .56, p < .001). Confidence limits were narrow, showing that 95% of the population slope is between 4.80 and 12.58.

5.2.2 H2 – Autonomous Motivation & Job Satisfaction: Public Company

In the public company mean scores for Autonomous Motivation was 4.10 (SD = 1.37) and for Job Satisfaction was 81.55 (SD = 23.00). A 1-tailed Pearson correlation coefficient found that there was a significant strong positive relationship between Autonomous Motivation and Job Satisfaction (r (45) = 0.76, p < .001). In addition, a linear regression analysis found that Autonomous Motivation significantly predicted Job Satisfaction (F(1,45)
= 62.06, p < .001, R² = .58) (Autonomous Motivation, beta = .76, p < .001). Confidence limits were narrow, showing that 95% of the population slope is between 9.61 and 16.21.

Figure 4 below compares the correlation coefficients of both companies for the different types of motivation, Intrinsic, Identified, Introjected and Extrinsic, described in Section 3.3, and how each relates to Job Satisfaction.

![Figure 4: Job Satisfaction and relationship to Motivation Types](image)

5.2.3 H3 - Autonomous Motivation & Commitment: Private Company

Mean scores for Autonomous Motivation was 4.33 (SD = 1.12) and for Affective Commitment was 4.85 (SD = 0.78). A 1-tailed Pearson correlation coefficient found that there was a significant strong positive relationship between Autonomous Motivation and Affective Commitment (r (44) = 0.55, p < .001). Additionally, a linear regression analysis found that Autonomous Motivation significantly predicted Affective Commitment (F(1,44) =
18.97, p < .001, R² = .30) (Autonomous Motivation, beta = .55, p < .001). Confidence limits were narrow, showing that 95% of the population slope is between 0.21 and 0.56. Mean scores for Autonomous Motivation was 4.33 (SD = 1.12) and for Normative Commitment was 4.41 (SD = 1.07). A 1-tailed Pearson correlation coefficient found that there was a significant strong positive relationship between Autonomous Motivation and Normative Commitment (r (44) = 0.51, p < .001). Moreover, a linear regression analysis found that Autonomous Motivation significantly predicted Normative Commitment (F(1,44) = 15.59, p < .001, R² = .26) (Autonomous Motivation, beta = .51, p < .001). Confidence limits were narrow, showing that 95% of the population slope is between 0.24 and 0.74.

5.2.4 H3 – Autonomous Motivation & Commitment: Public Company

Mean scores for Autonomous Motivation was 4.10 (SD = 1.37) and for Affective Commitment was 5.26 (SD = 0.86). A 1-tailed Pearson correlation coefficient found that there was a significant strong positive relationship between Autonomous Motivation and Affective Commitment (r (45) = 0.57, p < .001). Furthermore, a linear regression analysis found that Autonomous Motivation significantly predicted Affective Commitment (F(1,45) = 21.26, p < .001, R² = .32) (Autonomous Motivation, beta = .57, p < .001). Confidence limits were narrow, showing that 95% of the population slope is between 0.20 and 0.52. Mean scores for Autonomous Motivation was 4.10 (SD = 1.37) and for Continuance Commitment was 4.41 (SD = 1.34). A 1-tailed Pearson correlation coefficient found that there was a significant negative relationship between Autonomous Motivation and Continuance Commitment (r (45) = -0.39, p < .01). Additionally, a linear regression analysis found that Autonomous Motivation significantly predicted negative Continuance Commitment (F(1,45) = 8.06, p < .001, R² = .15) (Autonomous Motivation, beta = -0.39, p < .01). Confidence limits
were narrow, showing that 95% of the population slope is between -0.66 and -0.11. Mean scores for Autonomous Motivation was 4.10 (SD = 1.37) and for Normative Commitment was 4.05 (SD = 1.05). A 1-tailed Pearson correlation coefficient found that there was a significant positive relationship between Autonomous Motivation and Normative Commitment (r (45) = 0.44, p < .01). Furthermore, a linear regression analysis found that Autonomous Motivation significantly predicted Normative Commitment (F(1, 45) = 10.68, p < .01, R² = .19) (Autonomous Motivation, beta = .44, p < .01). Confidence limits were narrow, showing that 95% of the population slope is between 0.13 and 0.55.

Figure 5 below compares the correlation coefficients for companies in terms of how Autonomous Motivation relates to each type of organisation commitment.

![Figure 5: Relationship of Autonomous Motivation to Commitment Type](image)
5.2.5  H4 – Autonomous Motivation & Performance

There was no significant relationship between Autonomous Motivation and Performance in the Private or Public Company. However, in the Public Company Intrinsic Motivation showed a significant weak but positive correlation at 0.26 (p < .05).

5.2.6  H5 – Autonomous Motivation & Well-being: Private Company

Mean scores for Autonomous Motivation was 4.33 (SD = 1.12) and for Well-being was 8.80 (SD = 4.72). A 1-tailed Pearson correlation coefficient found that there was a significant positive relationship between Autonomous Motivation and Well-being (r(43) = 0.47, p < .01). Additionally, a linear regression analysis found that Autonomous Motivation significantly predicted Well-being (F(1,43) = 11.96, p < .01, R² = .22) (Autonomous Motivation, beta = 0.47, p < .01). Confidence limits were narrow, showing that 95% of the population slope is between -3.08 and -0.81.

5.2.7  H5 – Autonomous Motivation & Well-being: Public Company

There was no significant relationship between Autonomous Motivation and Well-being in the public company. Figure 6 below compares how Autonomous and Controlled Motivation relates to Well-being in both companies.
5.3 Hypotheses 6 and 7 – Personal Orientations

Hypotheses 6 and 7 attempted to explore the relationship between the measured variables and an employee’s Causality Orientation and Perceived Autonomy Support respectively. Bivariate correlations were run in SPSS to test each hypothesis against the variables; results are shown in Table 8 for the Private Company and Table 9 for the Public Company. All coefficients shown were generated using a Pearson Correlation.
### Table 8: Causality Orientation & Perceived Autonomy Support Correlations - Private Company

<table>
<thead>
<tr>
<th>Variable</th>
<th>Autonomy Orientation</th>
<th>Impersonal Orientation</th>
<th>Perceived Autonomy Support</th>
<th>Autonomous Motivation</th>
<th>Affective Commitment</th>
<th>Continuance Commitment</th>
<th>Normative Commitment</th>
<th>Well Being</th>
<th>Job Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled Orientation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autonomy Orientation</td>
<td>.43**</td>
<td></td>
<td>.22</td>
<td>.28*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impersonal Orientation</td>
<td>.10</td>
<td></td>
<td>.12</td>
<td>.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affective Commitment</td>
<td>- .21</td>
<td>- .12</td>
<td>.01</td>
<td>.27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuance Commitment</td>
<td>-.11</td>
<td>.08</td>
<td>-.20</td>
<td>-.02</td>
<td>.02</td>
<td>.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normative Commitment</td>
<td>-.15</td>
<td>-.03</td>
<td>-.10</td>
<td>.40</td>
<td>.51**</td>
<td>.69**</td>
<td>.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well Being</td>
<td>-.19</td>
<td>-.31**</td>
<td>-.20</td>
<td>-.16</td>
<td>.47**</td>
<td>.16</td>
<td>.05</td>
<td>.19</td>
<td></td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>-.12</td>
<td>-.05</td>
<td>-.01</td>
<td>.27</td>
<td>.56**</td>
<td>.39**</td>
<td>.19</td>
<td>.47**</td>
<td>.37**</td>
</tr>
</tbody>
</table>

* p significant at .05 level, ** p significant at .01 level, *** p significant at .001 Level.

#### 5.3.1 Causality Orientation Correlations – Private Company

In the Private Company mean scores for Impersonal Orientation was 38.20 (SD = 9.63) and for Affective Commitment was 4.85 (SD = 0.78). A 1-tailed Pearson correlation coefficient found that there was a significant weak negative relationship between Impersonal Orientation and Affective Commitment (r (43) = -0.25, p < .05). Mean scores for Impersonal Orientation was 38.20 (SD = 9.63) and for Well-being was 8.80 (SD = 4.72). A 1-tailed Pearson correlation coefficient found that there was a significant negative relationship between Impersonal Orientation and Well-being (r (43) = -0.31, p < .05). Mean scores for Autonomy Orientation was 69.47 (SD = 5.24) and for Perceived Autonomy Support was 5.51 (SD = 0.72). A 1-tailed Pearson correlation coefficient found that there was a significant weak positive relationship between Autonomy Orientation and Affective Commitment (r (43) = 0.28, p < .05).
5.3.2 Perceived Autonomy Support Correlations – Private Company

Mean scores for Perceived Autonomy Support was 5.51 (SD = 0.72) and for Autonomous Motivation was 4.33 (SD = 1.12). A 1-tailed Pearson correlation coefficient found that there was a significant weak positive relationship between Perceived Autonomy Support and Autonomous Motivation (r (43) = 0.27, p < .05). Mean scores for Perceived Autonomy Support was 5.51 (SD = 0.72) and for Affective Commitment was 4.85 (SD = 0.78). A 1-tailed Pearson correlation coefficient found that there was a significant positive relationship between Perceived Autonomy Support and Affective Commitment (r (43) = 0.34, p < .05). Mean scores for Perceived Autonomy Support was 5.51 (SD = 0.72) and for Normative Commitment was 4.41 (SD = 1.07). A 1-tailed Pearson correlation coefficient found that there was a significant positive relationship between Perceived Autonomy Support and Normative Commitment (r (43) = 0.40, p < .05). Mean scores for Perceived Autonomy Support was 5.51 (SD = 0.72) and for Well-being was 8.80 (SD = 4.72). A 1-tailed Pearson correlation coefficient found that there was a significant weak positive relationship between Perceived Autonomy Support and Job satisfaction (r (43) = 0.27, p < .05).
5.3.3 Causality Orientation Correlations – Public Company

In the public company mean scores for Controlled Orientation was 48.59 (SD = 8.42) and for Autonomous Motivation was 4.10 (SD = 1.37). A 1-tailed Pearson correlation coefficient found that there was a significant weak negative relationship between Controlled Orientation and Autonomous Motivation (r (44) = -0.25, p < .05). Mean scores for Controlled Orientation was 48.59 (SD = 8.42) and for Continuance Commitment was 4.41 (SD = 1.34). A 1-tailed Pearson correlation coefficient found that there was a significant weak positive relationship between Controlled Orientation and Continuance Commitment (r (44) = 0.27, p < .05).

Mean scores for Impersonal Orientation was 37.85 (SD = 9.29) and for Autonomous Motivation was 4.10 (SD = 1.37). A 1-tailed Pearson correlation coefficient found that there was a significant negative relationship between Impersonal Orientation and Autonomous Motivation (r (44) = -0.37, p < .01). Mean scores for Impersonal Orientation was 37.85 (SD = 9.29) and for Continuance Commitment was 4.41 (SD = 1.34). A 1-tailed Pearson correlation coefficient found that there was a significant weak negative relationship between Impersonal Orientation and Continuance Commitment (r (44) = -0.33, p < .01).
coefficient found that there was a significant positive relationship between Impersonal Orientation and Continuance Commitment ($r (44) = 0.33, p < .05$).

Mean scores for Autonomy Orientation was 70.74 (SD = 6.13) and for Perceived Autonomy Support was 5.08 (SD = 1.35). A 1-tailed Pearson correlation coefficient found that there was a significant positive relationship between Autonomy Orientation and Perceived Autonomy Support ($r (44) = 0.36, p < .05$). Mean scores for Autonomy Orientation was 70.74 (SD = 6.13) and for Affective Commitment was 5.26 (SD = 0.86). A 1-tailed Pearson correlation coefficient found that there was a significant positive relationship between Autonomy Orientation and Affective Commitment ($r (44) = 0.39, p < .01$). Mean scores for Autonomy Orientation was 70.74 (SD = 6.13) and for Wellbeing was 10.45 (SD = 3.78). A 1-tailed Pearson correlation coefficient found that there was a significant positive relationship between Autonomy Orientation and Wellbeing ($r (44) = 0.34, p < .05$).

### 5.3.4 Perceived Autonomy Support Correlations – Public Company

In the public company mean scores for Perceived Autonomy Support was 5.08 (SD = 1.35) and for Autonomous Motivation was 4.10 (SD = 1.37). A 1-tailed Pearson correlation coefficient found that there was a significant positive relationship between Perceived Autonomy Support and Autonomous Motivation ($r (44) = 0.49, p < .001$). Mean scores for Perceived Autonomy Support was 5.08 (SD = 1.35) and for Affective Commitment was 5.26 (SD = 0.86). A 1-tailed Pearson correlation coefficient found that there was a significant strong positive relationship between Perceived Autonomy Support and Affective Commitment ($r (44) = 0.51, p < .001$). Mean scores for Perceived Autonomy Support was 5.08 (SD = 1.35) and for Normative Commitment was 4.05 (SD = 1.05). A 1-tailed Pearson correlation coefficient found that there was a significant positive relationship between
Perceived Autonomy Support and Normative Commitment \((r (44) = 0.33, p < .05)\). Mean scores for Perceived Autonomy Support was 5.08 \((SD = 1.35)\) and for Well-being was 10.45 \((SD = 3.78)\). A 1-tailed Pearson correlation coefficient found that there was a significant positive relationship between Perceived Autonomy Support and Well-being \((r (44) = 0.30, p < .05)\). Mean scores for Perceived Autonomy Support was 5.08 \((SD = 1.35)\) and for Job Satisfaction was 81.55 \((SD = 23.00)\). A 1-tailed Pearson correlation coefficient found that there was a significant positive relationship between Perceived Autonomy Support and Job Satisfaction \((r (44) = 0.34, p < .05)\).

### 5.4 Hypotheses 8 to 10 – Differences

Hypotheses 8, 9 and 10 attempted to explore differences associated with an employee’s organisation type, gender and age respectively. An independent sample t-test was used to test Hypotheses 8 and 9 while an Anova was used to test Hypothesis 10. The results of the tests run in SPSS are shown in the tables below.

### 5.4.1 Differences – Organisation Type

<table>
<thead>
<tr>
<th>Variables</th>
<th>Groups</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective Commitment</td>
<td>Private Company</td>
<td>4.85</td>
<td>0.78</td>
<td>-2.37</td>
<td>91</td>
<td>.02</td>
</tr>
<tr>
<td></td>
<td>Public Company</td>
<td>5.26</td>
<td>0.86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuance Commitment</td>
<td>Private Company</td>
<td>3.40</td>
<td>1.19</td>
<td>-3.81</td>
<td>91</td>
<td>.00**</td>
</tr>
<tr>
<td></td>
<td>Public Company</td>
<td>4.41</td>
<td>1.34</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* *p* significant at .05 level, **p** significant at .01 level, ***p** significant at .001 level.

Employees in the Public Company \((mean = 5.26, SD = 0.78)\) were found to have higher Affective Commitment than the Private Company \((mean = 4.85, SD = 0.86)\). The 95%
confidence limits shows that the mean difference of the variables lies somewhere between -0.74 and -0.07. An independent sample t-test found that there was a statistically significant difference between Affective Commitment levels of the Public and Private companies (t (91) = -2.37, p = .02). Employees in the Public Company (mean = 4.41, SD = 1.19) were found to have higher Continuance Commitment than the Private Company (mean = 3.41, SD = 1.34). The 95% confidence limits shows that the mean difference of the variables lies somewhere between -1.52 and -0.48. An independent sample t-test found that there was a statistically significant difference between Continuance Commitment levels of the Public and Private companies (t (91) = -3.81, p < .001).

5.4.2 Differences – Gender

Males in the Public Company (mean = 90.34, SD = 12.14) were found to have higher Job Satisfaction levels than Females (mean = 76.10, SD = 26.44). The 95% confidence limits shows that the mean difference of the variables lies somewhere between -25.70 and -2.76. An independent sample t-test found that there was a statistically significant difference between Job Satisfaction levels of Males and Females in the Public Company (t (45) = -2.50, p = .02).

Table 11: Independent Samples T-test table displaying any significant differences between Females & Males – Public Company only

<table>
<thead>
<tr>
<th>Variables</th>
<th>Groups</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Satisfaction</td>
<td>Females</td>
<td>76.10</td>
<td>26.44</td>
<td>-2.50</td>
<td>45</td>
<td>.016*</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>90.34</td>
<td>12.14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p significant at .05 level, **p significant at .01 level, ***p significant at .001 level.

Table 12: Independent Samples T-test table displaying any significant differences between Females & Males – Companies combined

<table>
<thead>
<tr>
<th>Variables</th>
<th>Groups</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extrinsic Motivation</td>
<td>Females</td>
<td>3.60</td>
<td>1.21</td>
<td>-2.74</td>
<td>91</td>
<td>.007*</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>4.30</td>
<td>1.24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controlled Motivation</td>
<td>Females</td>
<td>3.20</td>
<td>1.00</td>
<td>-3.81</td>
<td>91</td>
<td>.02**</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>3.71</td>
<td>1.10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p significant at .05 level, **p significant at .01 level, ***p significant at .001 level.
When the employees in both companies were combined together as a single sample the Males (mean = 4.30, SD = 1.24) were found to have higher Extrinsic Motivation levels than Females (mean = 3.60, SD = 1.21). The 95% confidence limits show the mean difference of the variables lies somewhere between -1.21 and -0.19. An independent sample t-test found that there was a statistically significant difference between Extrinsic Motivation levels as a combined sample across the companies (t (91) = -2.74, p < .01). Males (mean = 3.71, SD = 1.10) were found to have higher Controlled Motivation levels than Females (mean = 3.20, SD = 1.00). The 95% confidence limits shows that the mean difference of the variables lies somewhere between -0.94 and -0.08. An independent sample t-test found that there was a statistically significant difference between Extrinsic Motivation levels as a combined sample across the companies (t (91) = -3.81, p = .02).

5.4.3 Differences – Age

A one-way Anova analysis of variance showed that the level of Continuance Commitment differed across the three age groups in the Private Company (F(2,43) = 4.68, p = .01). More specifically Tukey HSD post hoc analysis highlighted that the older age group (mean = 3.98, SD 1.24) showed a significantly higher level of Continuance Commitment compared to the younger age group (mean = 2.68, SD 1.16, p = .03) and the middle age group (mean = 3.64, SD = 1.01) also showed significantly higher levels than the younger age group.
A one-way Anova analysis of variance showed that the level of Autonomy Orientation differed across the three age groups in the Public Company (F(2,43) = 4.62, p = .01). More specifically Tukey HSD post hoc analysis highlighted that the younger age group (mean = 75.80, SD 4.97) possessed a significantly higher level of Autonomy Orientation compared to the older age group (mean = 67.68, SD 5.06, p = .02).

When the employees in both companies were combined together as a single sample, a one-way Anova analysis of variance showed that the level of Continuance Commitment differed across the three age groups in the Private Company (F(2,90) = 7.21, p = .001). More specifically Tukey HSD post hoc analysis highlighted that the older age group (mean = 4.31, SD 1.51) showed a significantly higher level of Continuance Commitment compared to the younger age group (mean = 2.94, SD 1.22, p = .01) and the middle age group (mean = 4.09, SD = 1.17) also showed significantly higher levels than the younger age group.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Groups</th>
<th>Mean</th>
<th>SD</th>
<th>F</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy Orientation</td>
<td>&lt;35</td>
<td>75.80</td>
<td>4.97</td>
<td>4.62</td>
<td>43</td>
<td>.01*</td>
</tr>
<tr>
<td></td>
<td>35 to 49</td>
<td>71.68</td>
<td>6.16</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>50+</td>
<td>67.68</td>
<td>5.06</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* *p* significant at .05 level, **p* significant at .001 level, ***p* significant at .001 level.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Groups</th>
<th>Mean</th>
<th>SD</th>
<th>F</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuance Commitment</td>
<td>&lt;35</td>
<td>2.94</td>
<td>1.22</td>
<td>7.21</td>
<td>90</td>
<td>.001*</td>
</tr>
<tr>
<td></td>
<td>35 to 49</td>
<td>4.09</td>
<td>1.17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>50+</td>
<td>4.31</td>
<td>1.51</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* *p* significant at .05 level, **p* significant at .001 level, ***p* significant at .001 level.
6 Discussion

The essence of Self Determination Theory is that individuals have three innate psychological needs of autonomy, competence and relatedness. The central hypothesis is that by satisfying these needs individuals will be more satisfied in their job, more committed to their organisation, perform better and have better well-being (Gagné & Deci, 2005). The purpose of this study was to test these principles in Irish workplaces against a background where the vast majority of work organisations still rely on extrinsic incentives, particularly money, to motivate employees (Pfeffer & Sutton, 2006). The following sections discuss the results presented in Section 5.

6.1 Hypothesis 1 – Satisfaction of Psychological Needs & Autonomous Motivation

The results presented in Section 5.1 indicate there is strong support for the hypothesis that psychological needs have a strong positive relationship with Autonomous Motivation in both companies albeit marginally less strong in the Private Company. Across both companies the Satisfaction of Competence Needs had the strongest correlation values and showed that where employees have a high perception of competence it predicts higher Autonomous Motivation. These results support previous SDT research which pointed to the satisfaction of an individual’s psychological needs as necessary antecedents of Autonomous Motivation. (Deci & Ryan, 2000). These results indicate that managers should focus on providing an environment that supports the satisfaction of these psychological needs and in particular, supporting competence needs of employees in the IT domain.
6.2 Hypotheses 2 to 5 – Autonomous Motivation

The major concentration of the study was to assess the importance of Autonomous Motivation to employee Job Satisfaction, Organisation Commitment, Performance and Well-being. Leveraging results of previous SDT research (Gagné & Deci, 2005) the study hypothesised that there would be a positive relationship between Autonomous Motivation and the variables. Each hypothesis is discussed separately below.

6.2.1 Autonomous Motivation & Job Satisfaction

In both the Private and Public company the results (Section 5.2) strongly supported the hypothesis that Autonomous Motivation is positively related to Job Satisfaction. Additionally, the results showed that Autonomous Motivation predicts Job Satisfaction in both companies. Furthermore, when one reviews the principles of SDT in the context of the ‘self-determination continuum’ (Section 3.3); an individual intrinsically interested in their work or who can internalise aspects of their job should have higher levels of job satisfaction. The results presented in Table 4 (p. 38) show correlation coefficients for the different motivation types and Job Satisfaction and these strongly support the self-determination continuum proposition. In both companies Intrinsic and Identified Motivation had higher correlations, with a higher degree of significance, than Introjected Motivation; while there was no relationship between Extrinsic Motivation and Job Satisfaction. These results support the SDT principle that the strength of the relationship increases as the motivation becomes more internalised. Moreover, these results resonate the questions raised in the Introduction (Section 3) of why do companies continue to use extrinsic motivation to increase job satisfaction, when it is intrinsic and well-internalised motivation that predicts higher levels of job satisfaction?
6.2.2 Autonomous Motivation & Organisation Commitment

The results presented in Sections 5.2.3 and 5.2.4 showed that there is a strong positive relationship between Autonomous Motivation, and Affective and Normative Commitment across both companies, as hypothesised. Affective Commitment measures an employee’s emotional attachment to the company while Normative Commitment assesses an employee’s feelings of obligation to stay with the company. Furthermore, the results show that Autonomous Motivation is a predictor of both commitment types, in both companies. The last type of commitment measured was Continuance Commitment, which measures the ‘cost’ of leaving the organisation to the individual. There was no relationship between Autonomous Motivation and Continuance Commitment in the private organisation, but there was a moderate negative relationship in the Public Company. These results are consistent with previous research (Meyer & Allen, 1991) that argued that the reason for distinguishing among the different forms of organisational commitment was that each has different implications for behaviour. Although all three forms tend to tie employees to the organisation, and therefore relate positively to retention, their relations with other types of work behaviour can be quite different. Affective and Normative Commitment tend to be strongly correlated with positive job outcomes such as attendance and performance, while Continuance Commitment tends to be unrelated, or negatively related, to these behaviours. Employees in the Public Company work in the ‘state-sector’ where conditions of employment such as pay, vacation time and pension provision tend to be very good compared to many private sector companies, hence, it is not surprising that there is a negative correlation to Autonomous Motivation as the employees may feel ‘controlled’ by the fact that they ‘have to’ remain in the company; even though these benefits are good. Additionally, as will be
discussed further in Section 6.4.3, the middle and older age categories show a higher Continuance Commitment level than the younger age group; and within the Public Company 90% of the respondents were 35 years of age or older which indicates a higher level of Continuance Commitment irrespective of company type. However, because these employees also have high Affective and Normative commitment to the organisation there should not be a negative impact on desired behaviours and this is what is seen from the overall results.

6.2.3 Autonomous Motivation & Well-being

The results presented in Section 5.2.6 supported the hypothesis that Autonomous Motivation was positively related to Well-being in the private company; moreover the results also showed that Autonomous Motivation predicts Well-being. In the public company there was no significant relationship between the two variables. Previous SDT studies have noted a positive relationship between Autonomous Motivation and Well-being (Ilardi et al, 1993) and particularly for more complex roles (Baard et al, 2004). This is consistent with the results from the Private Company, however, both sets of employees are engaged in IT roles which tend to be more complex roles; so why was there no relationship in the Public Company? The sample sizes used in previous studies were significantly larger than that used in this study and previous work has alluded to the fact that the relationship between motivation and psychological health is not a simple one with many other variables inside and outside the workplace playing a part (Deci et al, 2001).
6.2.4 Autonomous Motivation & Performance

Previous research has demonstrated positive correlations between Autonomous Motivation and Performance (e.g., Baard et al., 2004), however, this study failed to support the hypothesis other than partially in the Public Company where there was a weak positive correlation with Intrinsic Motivation. There are a number of reasons that may explain this; firstly, the sample size in this study was smaller by a factor of 5 to 10 compared to previous studies. Secondly, the measure used for Performance was a 3-point scale which did not provide the necessary variance for such a small sample as all responses were either satisfactory or greater than satisfactory. In addition, over 70% of the Public Company employees self-assessed the rating versus their annual review rating which may be related to the high ratings (see Table 2, p. 32). A more complete measure of performance could be incorporated in future work which should include a 360-type self-assessment, plus manager and colleague assessment to form a combined measure of performance over a 7-point scale. This would require significant effort and commitment from the target company which was outside the scope of this study.

6.3 Hypotheses 6 and 7 – Personal Orientations

SDT addresses individual differences through how an individual orients themselves towards autonomous or controlled environments. There were three orientations measured in the study, namely; Autonomy Orientation, Controlled Orientation and Impersonal Orientation. The purpose of this part of the study was to explore how an employee’s orientation related to the various outcome variables. In addition to personal orientation, the study also explored how the level of Perceived Autonomy Support affects the relationship to
the outcome variables. Previous research has strongly supported that a high perception of autonomy support leads to better outcomes (Deci et al, 1989, Baard et al, 2004).

The results from both companies are presented in Section 5.3 and highlight the interesting relationships among the variables. The relationships that were common across companies included that Autonomy Orientation was positively correlated with Affective Commitment and an employee’s Perceived Autonomy Support was positively related to Autonomous Motivation, Affective Commitment, Normative Commitment and Job Satisfaction. This result gives direction to managers and organisations that providing an environment that increases autonomy support could provide better outcomes for employees and the organisation. Such an intervention was carried out by Deci and colleagues (1989) where the outcome variables were measured before and after the training of managers to improve their autonomy support of employees and the results showed a significant improvement after the intervention.

In the public company Controlled Motivation and Impersonal Orientation were significantly correlated with Continuance Commitment and negatively correlated with Autonomous Motivation. These results are consistent with the results in Section 6.2.2 where Continuance Commitment is interpreted as controlling, and hence reduces motivation. In the Private Company there was a weak negative correlation between Impersonal Orientation and Affective Commitment and Well-being. Based on previous research, and SDT theory, these are expected results in that such an orientation is likely to increase anxiety and dampen emotional commitment to the organisation.
6.4 Hypotheses 8 to 10 – Differences

6.4.1 Organisation Type

An important element of the study was to look for differences between the Private and Public company. Results in Section 5.4 show statistically significant differences between the two organisations included the Public Company having higher levels of Continuance Commitment which would be expected given the results already presented (Sections 5.4.1 & 6.2.2). Higher Continuance Commitment was negatively correlated with Autonomous Motivation the Public Company and should have a negative effect on motivation; however, this was not the case as there was also a significantly higher level of Affective Commitment in the Public Company, compared to the Private Company, which was strongly related to Autonomous Motivation. Thus, the results suggest that the strong Affective Commitment and Autonomous Motivation of the public company employees easily counter-balanced any negative effect from the controlling aspects of high Continuance Commitment.

6.4.2 Gender

Gender differences were also analysed as part of the study, however, the samples were quite mixed in terms of gender balance with the Private Company having over twice as many males as females and the Public Company having nearly twice as many females as males (Table 1, p. 31). Within companies the only significant difference found was in the Public Company where females had lower levels of Job Satisfaction than males. However, by combining the companies together there was roughly an equal gender split and the major difference highlighted was that males had higher levels of Controlled Motivation, and in particular higher levels of Extrinsic Motivation, than females. This result supports previous
research from many sources that suggests that males are more extrinsically motivated than females (Bénabou & Tirole, 2006).

6.4.3 Age Category

Similar to looking for differences across gender, when the sample sizes were reviewed across age categories (see Table 1, p. 31) there were only 5 (out of 47) employees under 35 in the Public Company and only 9 (out of 53) 50 or over in the Private Company, hence, the companies were combined to give total numbers of 20 under 35 years old, 55 between 35 and 49 and 25 aged 50 or above. The only significant difference found across age categories was that the middle-aged and older-age categories had higher Continuance Commitment levels than the younger-age group. This difference should not be unexpected given that the older the employee the more time they have probably spent in the company; and the longer one’s tenure the higher the ‘cost’ of leaving, whether it is in terms of pension, job prospects or emotional attachment.

6.5 General Discussion

The main reason for carrying out this study was because as jobs become more complex and competition for talent increases, companies need to ensure that they focus on the factors that will help them to have satisfied, engaged, commitment and performing employees, in order to retain staff and remain competitive in this current marketplace. The SDT hypothesis is that by focusing on satisfying an employee’s psychological needs, employees will be more autonomously motivated and will in turn lead to higher levels of job satisfaction, organisation commitment, performance and well-being.
The strength of this study is that the results have generally supported the hypotheses and show that the satisfaction of an employee’s Psychological Needs correlated strongly with Autonomous Motivation which in turn predicted higher levels of Job Satisfaction and Organisation Commitment; and Well-being in the case of the Private Company. The results also emphasised the importance of an employee’s Perceived Autonomy Support; as higher perceived support indicates higher levels of Autonomous Motivation, Organisation Commitment and Job Satisfaction. Finally, the results strongly supported the SDT hypothesis that the more ‘internalised’ the type of motivation, the better the expected outcomes. On the negative side the results failed to support a relationship between Autonomous Motivation and Performance, despite previous research strongly supporting this relationship (e.g., Baard et al., 2004). As suggested in Section 6.4.2 a more rigorous analysis of the various components of performance should be carried out the re-test this hypothesis.

6.5.1 Limitations and Future Research

While the results broadly supported the Hypotheses posed along with the principles of SDT, there were a number of inherent limitations in the study that need to be raised and addressed in future studies. The first issue is participants were all from IT-related job types, and these jobs tend to require more creativity and problem solving skills than many other jobs; thus, the results are not necessarily ‘transferable’ to other job types and it would be important that different job types are evaluated in future studies in Ireland. In addition, the nature of the study was limited to only 2 companies and the sample size was quite small; hence, future work should assess more Irish based companies, across industry types with larger sample sizes. Finally, this study used self-report instruments, which albeit well validated from previous research, only capture an individual employee’s attitude to the questions and there is no guarantee that these attitudes will actually be ‘behaviouralised’ in
practice. Similarly, the results presented in the report reflect correlations and predictions rather than reflect any causation. In order to reduce this limitation undertaking more longitudinal studies where questionnaires are completed pre and post an intervention may offer a better prediction of the outcomes; similar to what Deci and colleagues (1989) did when training managers to be more autonomy-supportive.

6.5.2 Application

By combining the results of previous SDT studies with the outcomes of this research there is a strong case to be made for organisations to shift their concentration from being predominantly focused on extrinsic motivation to considering intrinsic and well-internalised versions of motivation. Specifically, this research provides direction to companies to attend to the psychological needs of employees in terms of their autonomy – giving employees a voice in decision making and how they do their job; competence – providing an environment where employees are challenged and can perform at a high level, and finally, relatedness – providing an environment that is genuinely supportive rather than competitively pitting employees against each. The output of this research suggests that by attending to these needs companies and managers will have more committed and satisfied employees. Furthermore, the use of extrinsic motivators could also be reduced with the potential to save money on unnecessary bonuses.

6.5.3 Conclusion

This study was undertaken because today’s jobs require more creative thinking and companies require more engaged and committed employees to succeed. Despite this companies continue to use traditional extrinsic motivation techniques which can be counter-
productive (Pfeffer & Sutton, 2006). The theme of the study was to assess the importance of satisfying an employee’s underlying psychological needs as antecedents to autonomous motivation; and measure the significance of this autonomous motivation to job satisfaction, organisational engagement, performance and well-being. The results strongly supported the hypothesis that satisfying an employee’s psychological needs are precursors to being autonomously motivated; and in turn being autonomously motivated predicts higher levels of job satisfaction and organisation commitment. Additionally, an employee’s perception of autonomy is positively related to Autonomous Motivation, Organisation Commitment and Job Satisfaction. In conclusion, companies that reduce their dependency on extrinsic motivators and focus instead on supporting employees’ underlying psychological needs are more likely to retain talented employees, who are happier and healthier, as well as potentially better performing (Baard et al, 2004); positioning them to compete more effectively in the 21st Century work environment
7 References


8 Appendix 1 – Instruments

My name is John Sexton and I am conducting research in the Department of Psychology at the Dublin Business School that is exploring employee attitudes to their work and environment. This research is being conducted as part of my studies and will be submitted for examination.

You are invited to take part in this study and participation involves completing an online survey. Participation is completely voluntary and so you are not obliged to take part.

Participation is anonymous and confidential, thus responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been completed.

The responses will be securely stored in electronic format and stored on a password protected computer. It is important that you understand that by completing and submitting the questionnaire that you are consenting to participate in the study.

There are nine (9) Sections to this questionnaire and it should take approximately 15 minutes to complete.

Thank you for taking the time to complete this survey as it is very important to my research.

John Sexton

Should you require any further information about the research, please contact 1642807@mydbs.ie or 086 251 2892. My supervisor can be contacted at Barbara.caska@dbs.ie
SECTION 1

Gender: M □ F □

Age: < 35 □ 35 - 49 □ 50 + □

Date:

Last Performance Rating:

1  2  3
Less than Satisfactory  Satisfactory  Greater than Satisfactory

(If no formal rating please ‘Rate your yourself on the above scale’ and Tick here □)
SECTION 2 - BPNS

The following questions concern your feelings about your job during the last year. (If you have been on this job for less than a year, this concerns the entire time you have been at this job.) Please indicate how true each of the following statements is for you given your experiences on this job.

Please use the following scale in responding to the items.

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<tr>
<td></td>
<td>not at all true</td>
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1. I feel like I can make a lot of inputs to deciding how my job gets done.
   1 2 3 4 5 6 7

2. I really like the people I work with.
   1 2 3 4 5 6 7

3. I do not feel very competent when I am at work.
   1 2 3 4 5 6 7

4. People at work tell me I am good at what I do.
   1 2 3 4 5 6 7

5. I feel pressured at work.
   1 2 3 4 5 6 7

6. I get along with people at work.
   1 2 3 4 5 6 7

7. I pretty much keep to myself when I am at work.
   1 2 3 4 5 6 7

8. I am free to express my ideas and opinions on the job.
   1 2 3 4 5 6 7

9. I consider the people I work with to be my friends.
   1 2 3 4 5 6 7
10. I have been able to learn interesting new skills on my job.

11. When I am at work, I have to do what I am told.

12. Most days I feel a sense of accomplishment from working.

13. My feelings are taken into consideration at work.

14. On my job I do not get much of a chance to show how capable I am.

15. People at work care about me.

16. There are not many people at work that I am close to.

17. I feel like I can pretty much be myself at work.

18. The people I work with do not seem to like me much.

19. When I am working I often do not feel very capable.

20. There is not much opportunity for me to decide for myself how to go about my work.

21. People at work are pretty friendly towards me.
Section 3 - MAWS

Using the scale below, please indicate for each of the following statements to what degree they presently correspond to one of the reasons for which you are doing this specific job.

Please use the following scale in responding to the items.

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1. Because I enjoy this work very much

2. Because this job fits my personal values

3. For the moments of pleasure that this job brings me

4. I chose this job because it allows me to reach my life goals

5. Because I have to be the best in my job, I have to be a “winner”

6. Because this job fulfills my career plans

7. I do this job for the paycheck

8. Because my work is my life and I don’t want to fail

9. Because my reputation depends on it
10. Because this job affords me a certain standard of living
   1  2  3  4  5  6  7

11. Because it allows me to make a lot of money
   1  2  3  4  5  6  7

12. Because I have fun doing my job
   1  2  3  4  5  6  7
SECTION 4 - JDI

Think of the work you do at present. How well does each of the following words or phrases describe your work? In the blank beside each word or phrase below, write Y for “Yes” if it describes your work, N for “No” if it does not describe it, ? for “?” if you cannot decide.

__ Fascinating
__ Routine
__ Satisfying
__ Boring
__ Good
__ Gives sense of accomplishment
__ Respected
__ Exciting
__ Rewarding
__ Useful
__ Challenging
__ Simple
__ Repetitive
__ Creative
__ Dull
__ Uninteresting
__ Can see results
__ Uses my abilities

Think of your job in general. All in all, what is it like most of the time? In the blank beside each word or phrase below, write Y for “Yes” if it describes your job, N for “No” if it does not describe it, ? for “?” if you cannot decide.

__ Pleasant
__ Bad
__ Great
__ Waste of time
__ Good
__ Undesirable
__ Worthwhile
__ Worse than most
__ Acceptable
__ Superior
__ Better than most
__ Disagreeable
__ Makes me content
__ Inadequate
__ Excellent
__ Rotten
__ Enjoyable
__ Poor
SECTION 5 - OCS

This questionnaire contains items that are related to your experience within your company.

Please use the following scale in responding to the items.

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<td>Strongly Disagree</td>
<td>Neutral</td>
<td>Strongly Agree</td>
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AC1. I would be very happy to spend the rest of my career with this organisation.

1 2 3 4 5 6 7

AC2. I really feel as if this organisation's problems are my own.

1 2 3 4 5 6 7

AC3. I do not feel a strong sense of belonging to my organisation. (R)

1 2 3 4 5 6 7

AC4. I do not feel emotionally attached to this organisation. (R)

1 2 3 4 5 6 7

AC5. I do not feel like part of the family at my organisation. (R)

1 2 3 4 5 6 7

AC6. This organisation has a great deal of personal meaning for me.

1 2 3 4 5 6 7

CC1. Right now, staying with my organisation is a matter of necessity as much as desire.

1 2 3 4 5 6 7

CC2. It would be very hard for me to leave my organisation right now, even if I wanted to.

1 2 3 4 5 6 7

CC3. Too much of my life would be disrupted if I decided to leave my organisation now.

1 2 3 4 5 6 7
CC4. I feel that I have too few options to consider leaving this organisation.

1 2 3 4 5 6 7

CC5. If I had not already put so much of myself into this organisation, I might consider working elsewhere.

1 2 3 4 5 6 7

CC6. One of the few negative consequences of leaving this organisation would be the scarcity of available alternatives.

1 2 3 4 5 6 7

NC1. I do not feel any obligation to remain with my current employer. (R)

1 2 3 4 5 6 7

NC2. Even if it were to my advantage, I do not feel it would be right to leave my organisation now.

1 2 3 4 5 6 7

NC3. I would feel guilty if I left this organisation now.

1 2 3 4 5 6 7

NC4. This organisation deserves my loyalty.

1 2 3 4 5 6 7

NC5. I would not leave my organisation right now because I have a sense of obligation to the people in it.

1 2 3 4 5 6 7

NC6. I owe a great deal to my organisation.

1 2 3 4 5 6 7

Scoring:

AC=affective commitment; CC=continuance commitment; NC=normative commitment;

Responses are made on 7-point scales and are reversed where indicated and averaged to yield composite commitment scores.
SECTION 6 - WCQ

This questionnaire contains items that are related to your experience with the manager who is your most immediate supervisor.

Please use the following scale in responding to the items.

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<td>Strongly Disagree</td>
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<td>Neutral</td>
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<td>5</td>
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<tr>
<td></td>
<td>6</td>
<td>Strongly Agree</td>
<td>7</td>
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1. I feel that my manager provides me choices and options.
   1 2 3 4 5 6 7

2. I feel understood by my manager.
   1 2 3 4 5 6 7

3. I am able to be open with my manager at work.
   1 2 3 4 5 6 7

4. My manager conveyed confidence in my ability to do well at my job.
   1 2 3 4 5 6 7

5. I feel that my manager accepts me.
   1 2 3 4 5 6 7

6. My manager made sure I really understood the goals of my job and what I need to do.
   1 2 3 4 5 6 7

7. My manager encouraged me to ask questions.
   1 2 3 4 5 6 7

8. I feel a lot of trust in my manager.
   1 2 3 4 5 6 7

9. My manager answers my questions fully and carefully.
   1 2 3 4 5 6 7
10. My manager listens to how I would like to do things.
   1 2 3 4 5 6 7

11. My manager handles people's emotions very well.
   1 2 3 4 5 6 7

12. I feel that my manager cares about me as a person.
   1 2 3 4 5 6 7

13. I don't feel very good about the way my manager talks to me.
   1 2 3 4 5 6 7

14. My manager tries to understand how I see things before suggesting a new way to do things.
   1 2 3 4 5 6 7

15. I feel able to share my feelings with my manager.
   1 2 3 4 5 6 7

Scores are calculated by averaging the individual item scores, before averaging the item scores, you must first ‘reverse’ the score of item 13 (i.e., subtract the score on item 13 from 8 and use the result as the item score for this item—for example, the score of 3, when reversed would become 5).

Higher average scores represent a higher level of perceived autonomy support.
SECTION 7 - GHQ

In terms of your general medical health over the last few weeks, please answer ALL the questions simply by checking the answer which you think most applies to you. Remember that we want to know about present or recent complaints, not those that you had in the past. HAVE YOU RECENTLY:

1 - been able to concentrate on whatever you're doing?
   Better than usual  Same as usual  Less than usual  Much less than usual

2 - lost much sleep over worry?
   Not at all  No more than usual  Rather more than usual  Much more than usual

3 - felt constantly under strain?
   Not at all  No more as usual  Rather more than usual  Much more than usual

4 - felt you couldn't overcome your difficulties?
   Not at all  No more as usual  Rather more than usual  Much more than usual

5 - been able to enjoy your normal day-to-day activities?
   More so than usual  Same as usual  Less so than usual  Much less than usual

6 - been able to face up to your problems?
   More so than usual  Same as usual  Less able than usual  Much less able than usual

7 - felt that you are playing a useful part in things?
   More so than usual  Same as usual  Less useful than usual  Much less useful

8 - felt capable of making decisions about things?
   More so than usual  Same as usual  Less so than usual  Much less capable

9 - been feeling unhappy and depressed?
   Not at all  No more than usual  Rather more than usual  Much more than usual

10 - been losing confidence in yourself?
   Not at all  No more than usual  Rather more than usual  Much more than usual

11 - been thinking of yourself as a worthless person?
   Not at all  No more than usual  Rather more than usual  Much more than usual

12- been feeling reasonably happy, all things considered?
   More so than usual  About same as usual  Less so than usual  Much less than usual
SECTION 8 - GCOS

On these pages you will find a series of questions. Each one describes an incident and lists three ways of responding to it. Please read each question and then consider the responses in turn. Think of each response in terms of how likely it is that you would respond in that way.

Please indicate how likely it is for you to respond to each item by selecting one number for each of the three responses to each question.


1 2 3 4 5 6 7

Very Likely

Unlikely Moderately

Very Likely

1. You have been offered a new position in a company where you have worked for some time. The first question that is likely to come to mind is:

a) What if I can't live up to the new responsibility?

1 2 3 4 5 6 7

b) Will I make more at this position?

1 2 3 4 5 6 7

c) I wonder if the new work will be interesting.

1 2 3 4 5 6 7

2. You have a school-age daughter. On parents' night the teacher tells you that your daughter is doing poorly and doesn't seem involved in the work. You are likely to:

a) Talk it over with your daughter to understand further what the problem is.

1 2 3 4 5 6 7

b) Scold her and hope she does better.

1 2 3 4 5 6 7

c) Make sure she does the assignments, because she should be working harder.

1 2 3 4 5 6 7
3. You had a job interview several weeks ago. In the mail you received a form letter which states that the position has been filled. It is likely that you might think:

a) It's not what you know, but who you know.

b) I'm probably not good enough for the job.

c) Somehow they didn't see my qualifications as matching their needs.

4. You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. You would likely handle this by:

a) Telling the three workers the situation and having them work with you on the schedule.

b) Simply assigning times that each can break to avoid any problems.

c) Find out from someone in authority what to do or do what was done in the past.

5. A close (same-sex) friend of yours has been moody lately, and a couple of times has become very angry with you over "nothing." You might:

a) Share your observations with him/her and try to find out what is going on for him/her.

b) Ignore it because there's not much you can do about it anyway.

c) Tell him/her that you're willing to spend time together if and only if he/she makes more effort to control him/herself.
6. You have just received the results of a test you took, and you discovered that you did very poorly. Your initial reaction is likely to be:

a) "I can't do anything right," and feel sad.
   1 2 3 4 5 6 7

b) "I wonder how it is I did so poorly," and feel disappointed.
   1 2 3 4 5 6 7

c) "That stupid test doesn't show anything," and feel angry.
   1 2 3 4 5 6 7

7. You have been invited to a large party where you know very few people. As you look forward to the evening, you would likely expect that:

a) You'll try to fit in with whatever is happening in order to have a good time and not look bad.
   1 2 3 4 5 6 7

b) You'll find some people with whom you can relate.
   1 2 3 4 5 6 7

c) You'll probably feel somewhat isolated and unnoticed.
   1 2 3 4 5 6 7

8. You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterized as:

a) Take charge: that is, you would make most of the major decisions yourself.
   1 2 3 4 5 6 7

b) Follow precedent: you're not really up to the task so you'd do it the way it's been done before.
   1 2 3 4 5 6 7

c) Seek participation: get inputs from others who want to make them before you make the final plans.
   1 2 3 4 5 6 7
9. Recently a position opened up at your place of work that could have meant a promotion for you. However, a person you work with was offered the job rather than you. In evaluating the situation, you're likely to think:

a) You didn't really expect the job; you frequently get passed over.

1 2 3 4 5 6 7

b) The other person probably "did the right things" politically to get the job.

1 2 3 4 5 6 7

c) You would probably take a look at factors in your own performance that led you to be passed over.

1 2 3 4 5 6 7

10. You are embarking on a new career. The most important consideration is likely to be:

a) Whether you can do the work without getting in over your head.

1 2 3 4 5 6 7

b) How interested you are in that kind of work.

1 2 3 4 5 6 7

c) Whether there are good possibilities for advancement.

1 2 3 4 5 6 7

11. A woman who works for you has generally done an adequate job. However, for the past two weeks her work has not been up to par and she appears to be less actively interested in her work. Your reaction is likely to be:

a) Tell her that her work is below what is expected and that she should start working harder.

1 2 3 4 5 6 7

b) Ask her about the problem and let her know you are available to help work it out.

1 2 3 4 5 6 7

c) It's hard to know what to do to get her straightened out.

1 2 3 4 5 6 7
12. Your company has promoted you to a position in a city far from your present location. As you think about the move you would probably:

a) Feel interested in the new challenge and a little nervous at the same time.

   1  2  3  4  5  6  7

b) Feel excited about the higher status and salary that is involved.

   1  2  3  4  5  6  7

c) Feel stressed and anxious about the upcoming changes.

   1  2  3  4  5  6  7

Scoring

Each question describes a typical social or achievement oriented situation (e.g., applying for a job or interacting with a friend) and is followed by three types of responses--an autonomous, a controlled, and an impersonal type. Respondents indicate, on 7-point Likert-type scales, the extent to which each response is typical for them. Higher scores indicate higher amounts of the particular orientation represented by the response.

Thus, the scale has three subscales--the autonomy (A), the controlled (C), and the impersonal (I) subscales--and subscale scores are generated by summing the individual's 12 responses on items corresponding to each subscale.
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