Are committed employees more likely to exhibit innovative behaviour: a social exchange perspective

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ARE COMMITTED EMPLOYEES MORE LIKELY TO EXHIBIT INNOVATIVE

BEHAVIOUR: A SOCIAL EXCHANGE PERSPECTIVE

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ABSTRACT

This thesis comprises an examination of some organisational factors and workplace relationships that can be used to develop commitment and an environment that fosters the innovative behaviour of nursing employees working within Australian health care. Specifically, this thesis aims to provide insight into the relationship between several organisational factors (organisational justice, innovative organisational culture, perceived organisational support, leader-member exchange and tie strength) and their impact upon affective organisational commitment and innovative behaviour.

This study proposes a model that outlines and tests the impact of these organisational factors upon the perceptions and behaviour of nursing employees. In order to address the primary research questions and hypotheses, data was gathered utilising a quantitative approach within a post-positivist paradigm. The research model and the quantitative data were tested using covariance-based structural equation modelling, which was also confirmed using partial least squares. The research method included a self-report survey where one thousand nursing employees working within three Australian hospitals were selected to participate in this study, of which 210 nurses responded with useable surveys.

The main findings of this study confirm and contribute a new understanding about the research model proposed. The findings confirm that several organisational factors tested directly affect the affective organisational commitment (tie strength, interactional justice, leader-member exchange, perceived organisational support) and innovative behaviour (tie strength, affective organisational commitment) of nursing employees. The findings also confirm that all of
the organisational factors tested indirectly affected the innovative behaviour of nursing employees, except for affective organisational commitment, which had a direct effect. The implication of the findings is that this study provides new knowledge about how workplace social exchange can foster perceptions of organisational support, affective organisational commitment and the innovative behaviour of nursing employees. Hence, the research findings add to the body of knowledge about the impact of several organisational factors upon the affective organisational commitment and innovative behaviour of nursing employees. The main contribution to Social Exchange Theory is that workplace social relationships can be used to foster the innovative behaviour of employees. Consequently, this new knowledge is one attempt to address the paucity of research about the innovation of nursing employees, particularly in relation to gaining a better understanding of the factors affecting innovative behaviour of nursing employees. Such information about innovative behaviour provides an understanding about one way of developing the efficiency of nursing employees within Australia.
STATEMENT OF ORIGINALITY

I certify that the work presented in this thesis is, to the best of my knowledge and belief, original, except as acknowledged in the text, and that the material has not been submitted, either in whole or in part, for a degree at this or any other university.

I acknowledge that I have read and understood the University's rules, requirements, procedures and policy relating to my higher degree research award and to my thesis. I certify that I have complied with the rules, requirements, procedures and policy of the University (as they may be from time to time).

Mr Matthew John Xerri       Date
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### Glossary

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<td>Social Exchange Theory</td>
<td>Social Exchange Theory suggests that social exchange involves a series of interactions that over a period of time generate obligations and liberties between workplace social network members (Cook &amp; Whitmeyer, 1992; Cropanzano &amp; Mitchell, 2005; Jones, Hesterly, &amp; Borgatti, 1997; Maurer, Pierce, &amp; Shore, 2002).</td>
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<tr>
<td>Organisational Commitment</td>
<td>Landry and Vandenberghe (2009) suggest that organisational commitment is a global psychological state that defines the correlation between employees and the organisation.</td>
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<td>Affective organisational commitment</td>
<td>Affective organisational commitment can be described as an emotional attachment to the organisation which means that employees remain with the organisation because they want to (Shore, Bommer, &amp; Shore, 2008).</td>
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<tr>
<td>Innovative behaviour</td>
<td>Innovative behaviour refers to identifying workplace problems, creating new solutions or ideas for the problems and creating support so the new ideas are embedded into the organisation (Carmeli, Meitar, &amp; Weisberg, 2006).</td>
</tr>
<tr>
<td>Tie strength</td>
<td>Tie strength is referred to as the level of proximity between two workplace social network members.</td>
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<td>Perceived Organisational Support</td>
<td>Eisenberger, Huntington, Hutchinson, and Sowa (1986) postulated that POS refers to an employee's collective attitude pertaining to the extent which their employing organisation values their contributions and is concerned with their overall well-being.</td>
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<tr>
<td>Organisational justice</td>
<td>An employee's perception of fairness in the organisation is said to form the basis of organisational justice.</td>
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<tr>
<td>Procedural justice</td>
<td>Procedural justice is associated with an employee's perception of the organisation's formalised procedures and policies and can provide</td>
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### Interactional justice

Interactional justice refers to an employee’s perception about the fairness and quality of social exchanges in the workplace (Luo, 2007).

### Leader-Member Exchange

Leader-Member Exchange theory describes how leaders develop differential working relationships with followers within organisations (Hackman & Johnson, 2004, p. 76).

### Organisational culture

A basic and well known premise of organisational culture is that it forms the shared values, beliefs and practices of people within the organisation (Schein, 1990).

### Professionals

Professionals are considered to be respected members of the community who can be set apart from other employees, because of their possession and use of expert knowledge, collegiality, autonomy, and accountability.
Publications

Related refereed journal publications


Refereed conference papers

Xerri, M., Brunetto, Y. and Shacklock, K. (2009). The innovative behaviour of employees within SMEs: A social capital perspective, in proceedings of the Australian and New Zealand Management Conference (ANZAM), 2-4 December, Melbourne, Australia.


Xerri, M., Brunetto, Y., & Farr-Wharton, R. (2011). Examining the role of workplace social network relationships in providing nurses’ and engineers' the information, knowledge and resources to be able to effectively and efficiently solve work-based problems, Academy of Management Conference, 12-16 August, San Antonio, Texas.


wellbeing, commitment and turnover intentions for nurses in Australia and the USA, in proceedings of the Australian and New Zealand Management Conference (ANZAM), 5-7 December, Perth, Australia.

I would like to thank all the people who have helped me in the preparation of this thesis. I cannot thank enough my mentor and academic supervisor, Professor Yvonne Brunetto. Yvonne’s constant encouragement and dedication to developing my skills has been the greatest motivator of all. I would also like to thank Professor Neal Ryan, Professor Stephen Teo and Associate Professor Kate Shacklock for their assistance at various times throughout my PhD journey. Without the great support and sometimes a push in the right direction, I would not have been able to complete this journey, thank-you.

Just as research requires a good framework and foundation, so too must a researcher, so I would like to thank my wife, Marissa for all her support, encouragement and helping me get through each day. Without your constant love and support I would not have been able to complete this thesis with such thoroughness. I am also very grateful to my family Mum, Dad and James, thanks for the support, words of encouragement and most of all believing that I could achieve this great milestone.
1.0 CHAPTER ONE: INTRODUCTION

1.1 Overview

An important issue for Australia and other countries around the world is the performance and behaviour of skilled employees, because this is a key factor contributing to organisational effectiveness (Hartog & Verburg, 2004). This is particularly the case for health care employees because there are numerous studies suggesting that around the world there are not enough nurses (Buchan & Calman, 2004; Doiron, Hall, & Jones, 2008; Duffield & O'Brien-Pallas, 2002; Leiter & Maslach, 2009; O'Brien-Pallas, Duffield, & Alksnis, 2004). In particular, there are not enough nurses due to a number of factors, including an increased demand for hospital services (aging population), few good substitutes for registered nurses, decreasing enrolment in nurses education (Doiron et al., 2008), the nursing workforce is aging (Buerhaus, Staiger, & Auerback, 2000), inadequate numbers of skilled employees to fill current roles and the high turnover of nursing employees (Buerhaus, 2002). The shortage of nurses highlights the importance and urgency for hospitals to examine and understand nursing employee perceptions and behaviour.

To add to the severity of the shortage there is an indication that there may be a problem with nurses leaving the profession. The AIHW (2004) reported that 19.8 per cent of Australian born registered nurses aged between 18 and 64 were no longer working within the Australian nursing workforce. Additionally, 14.3 per cent of non-Australian born registered nurses living in Australia were no longer in the Australian nursing workforce. The problems facing current nursing employees have been well examined, but the simple fact is that the problem is expected to get worse. For example, it was estimated that by 2012 Australia could be short as many as 61 000 nurses (Twigg, Duffield, Thompson, & Rapley, 2010).
Additionally, the nursing shortages, amongst other things, mean that nurses are working extended and unpredictable hours (Dorrian et al., 2006) and often with low nurse-to-patient ratios (Rothberg, Abraham, Lindenauer, & Rose, 2005), which are not ideal for maintaining or improving patient outcomes and safety.

Therefore, based on the shortage of nursing employees it is in the best interests of health care organisations to know more about what factors affect nurses (Chang, 2005). The current shortage of nursing employees and problems with retention are having a significant impact on Australia, because both public and private hospital wards are on occasion forced to close due to the current lack of health care professionals (Duffield & O’Brien-Pallas, 2003). For that reason, increasing the commitment of employees and their efficiency is a major challenge facing the Australian health system. As a result, this study will examine nursing employees to provide insight into the factors impacting on their work perceptions, behaviour and commitment to the organisation.

Landry and Vandenberghe (2009) suggest that organisational commitment is a global psychological state that defines the correlation between employees and the organisation. The main behaviour linked to organisational commitment is the decision to remain with the organisation. A significant amount of research has been conducted about the organisational commitment of employees and how they become committed to the organisation. Allen and Meyer (1990) suggested that there were three facets of organisational commitment including affective, continuance and normative commitment. To ensure clarity with regards to the introduction of organisational commitment, the three facets of organisational commitment will now be briefly discussed. Affective organisational commitment can be described as an emotional attachment to the organisation which means that employees remain with the organisation because they want to (Shore et al., 2008). Employees high in continuance
commitment stay with the organisation because of the high costs associated with leaving the organisation. Finally, employees high in normative commitment feel they should remain with the organisation because of the benefits involved.

Moreover, within this study it is important to examine which organisational factors impact upon the emotional attachment of nursing employees. Specifically, affective organisational commitment will be examined because there is a current body of literature suggesting that the organisational and social factors that will be examined within this study may not impact on the costs associated with leaving an organisation; however, may increase their emotional attachment to the organisation (Allen & Meyer, 1990; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Rhoades, Eisenberger, & Armeli, 2001). Therefore, this study aims to provide insight and add to the current body of knowledge about the affective organisational commitment and innovative behaviour of nursing employees. As a result, this study will provide new implication for managers about what is required to foster, amongst other things, the commitment of nursing employees.

Due to the shortage of nursing and health care employees it is also imperative that employees are as efficient and productive as possible. As well, the need to do more with less is further exacerbated by the reduced spending and funding for healthcare (Åmo, 2006). Current research suggests that such effectiveness and efficiency can be achieved by encouraging and developing the innovative behaviour of employees (Carmeli et al., 2006; Scozzi, Carvelli, & Crowston, 2005). Innovative behaviour is referred to as the process of facilitating new problem solving ideas into organisational practice (Carmeli et al., 2006). Jafri (2010) suggests that knowledge can be used to create new ideas and that these ideas can be used as the building blocks from which to provide excellence in service and/or solve workplace problems innovatively.
There have been very few studies that have adequately examined the innovative behaviour of nursing employees. For example, from a review of the extant literature three studies were found that examined the innovative behaviour of nurses, two examined the impact of empowerment on innovative behaviour (Åmo, 2006; Knol & van Linge, 2009), and another examined the impact of transformational leadership on innovative behaviour (Reuvers, van Engen, Vinkenburg, & Wilson-Evered, 2008). Moreover, to date nursing management literature has focused primarily on how to attract and retain nursing employees (Andrews & Dziegielewski, 2005; Brewer & Lok, 1995; Gambino, 2010; Hayes et al., 2006; Hutchinson & Purcell, 2010; O’Brien-Pallas et al., 2004; Rowe & Calnan, 2006). Furthermore, there is a lack of empirical research about an innovative environment that is rich in innovative behaviour, and whether affective organisational commitment influences nursing employees’ innovative behaviour (Jafri, 2010).

To provide an understanding into the thinking underlying this thesis, the concept will now be discussed in more detail. The development of the commitment of nursing employees is imperative for organisations aiming to maximise effectiveness and efficiency and to facilitate organisational development. Effective management of knowledge facilitates organisational development and provides a foundation to develop innovative behaviour (Maqsood, Walker, & Finegan, 2007; Subramaniam & Youndt, 2005). Therefore, it is imperative to ensure that knowledge is developed and employees are committed to foster innovation, thus contributing to overall organisational development (Maqsood et al., 2007). An organisation that possesses employees that are committed to the organisation is also better equipped to facilitate the development of quality relationships between employees. Past literature suggests that it is the quality of the workplace relationships that affect the transfer of work-based information between workplace network members, which is essential for
knowledge development (Baron & Markman, 2000; Molm, Collett, & Schaefer, 2007; Tsai & Ghoshal, 1998).

There are many concepts that have been found to predict affective organisational commitment and innovative behaviour. This study aims to confirm such parameters and contribute new knowledge to the understanding about affective organisational commitment and innovative behaviour of nursing employees. As mentioned, this study will examine the impact of a number of organisational factors on affective organisational commitment and innovative behaviour. More specifically, affective organisational commitment and innovative behaviour will be examined in relation to organisational culture [A basic and well known premise of organisational culture is that it forms the shared values, beliefs and practices of people within the organisation (Schein, 1990)], tie strength [Tie strength is referred to as the level of proximity between two workplace social network members (Granovetter, 1973)], leader-member exchange (LMX). [Leader-Member Exchange is referred to as the exchange that takes place between a supervisor and their subordinates, and the quality of such relationships (Wang, Law, Hackett, Wang, & Chen, 2005)], perceived organisational support (POS) [Eisenberger, Huntington, Hutchinson, and Sowa (1986) postulated that POS refers to an employee’s collective attitude pertaining to the extent which their employing organisation values their contributions and is concerned with their overall well-being], and procedural and interactional justice (organisational justice) [An employee’s perception of fairness with regards to the organisation is said to form the basis of organisational justice (Colquitt, 2001)].

This research will use two theoretical frameworks, including theory about professionals and Social Exchange Theory (SET) as lenses to conduct this research. In particular, the two theoretical frameworks will be used because the research is concerned
with workplace exchange relationships (SET) and examines nursing employees working within the Australian nursing profession (professionals).

Social exchange theorists argue that when employees develop good workplace relationships, a reciprocal arrangement develops that not only benefits the individuals involved, it also benefits the organisation as a whole (Cole, Schaninger, & Harris, 2007). Such theory provides the impetus for justifying the concepts previously mentioned that may influence affective organisational commitment and innovative behaviour. For example, based on SET it is expected that as workplace relationships develop information, benefits, support and knowledge will be transferred between those who share a workplace relationship (Cropanzano & Mitchell, 2005). To provide a specific example, if nursing employees’ perceive that the organisation is supportive and care about their well-being (POS), they are more likely to feel obligated to reciprocate such benefits and support, and such reciprocation may take the form of commitment to the organisation and/or the propensity to be innovative in the workplace. A similar argument and justification can be used for the inclusion of the other concepts in this study.

For example, applying the original notion of reciprocity (Gouldner, 1960), if nursing employees’ perceive that their interactions in the workplace are equitable (interactional justice), organisational policies and procedures are equitable (procedural justice), they have a good relationship with their supervisor (LMX), the strength of such relationships is adequate (tie strength), and/or a culture has been developed that is supportive of innovative behaviour (innovative organisational culture); then, all other things aside, nursing employees are likely to feel obligated to provide some return for the benefits and support derived from the workplace relationships. In particular, it is expected that if ideal workplace social exchange conditions are provided, then nurses are likely to engage in innovative behaviour.
On the other hand, literature about professionals suggests that professional employees are often uniquely different from other occupations and even other professions (Badcott, 2010; Farr-Wharton, Brunetto, & Shacklock, 2011). Therefore, to provide insight into workplace relationships, affective organisational commitment and innovative behaviour of Australian nursing employees, a professional theoretical lens will also be used to frame this research.

According to social exchange theorists, when effective workplace relationships are developed the organisation benefits in a number of different ways, because effective relationships amongst employees at different levels of the organisation can result in reciprocal information-sharing and trusting relationships, so that employees feel empowered to and are accountable for undertaking their roles efficiently and effectively. As a side note, trust in this context is inherent in the social relationships (e.g. the supervisor-nurse relationship), thus quality social relationships in the workplace would be expected to possess high levels of trust. Based on this reasoning, trust as a construct will not be included in the concepts to be examined in this study.

The development of trusting relationships should optimise an employee’s perception of supervisor and organisational support, as well as increasing their affective organisational commitment (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). However, this has yet to be examined within the context of nursing employees. The importance of an employee’s perception of organisational support is invaluable because it reflects employees’ beliefs about how committed the organisation is to them (Rhoades & Eisenberger, 2002; Wayne, Shore, Bommer, & Tetrick, 2002). In particular, if the employee considers such commitment as a fair trade for the benefits they have provided to the organisation, then POS can be thought of as a resource that can be exchanged through social relationships in the workplace. To add to
this argument, if employees’ perceive that the organisation is committed to them, the response may be that they feel obligated to be committed to the organisation or, put another way, that they feel emotionally attached to the organisation because the organisation is supportive and committed to them. Additionally, increasing the affective organisational commitment of nursing employees should assist health care organisations in reducing the gap between what they aspire to achieve and the practice they actually achieve. It is therefore the aim of this study to examine a number of organisational factors that may impact on the affective organisational commitment and innovative behaviour of nursing employees.

To ensure clarity, a number of key points are explained and depicted in Table 1.1.

**Table 1.1 Key points of this study**

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<tbody>
<tr>
<td><strong>1</strong></td>
<td>Use Social Exchange Theory and literature about professionals as two theoretical lenses for examining a conceptual model</td>
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<tr>
<td><strong>2</strong></td>
<td>At this stage, it is important to note that LMX is a term commonly used to refer to the supervisor-subordinate relationship or in the context of this study the supervisor-nurse relationship. With this in mind, in this thesis the LMX term/ concept will be used to refer to and examine the supervisor-nurse relationship.</td>
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<tr>
<td><strong>3</strong></td>
<td>Examine the impact of workplace relationships upon the affective organisational commitment and innovative behaviour of nursing employees.</td>
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<tr>
<td><strong>4</strong></td>
<td>Examine the correlation between the relationships possessed by nurses and their innovative behaviour. More specifically, this examination will focus on the impact of organisational justice (interactional and procedural), organisational culture, tie strength, perceived organisational support and LMX on innovative behaviour.</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td>By examining the above factors this will provide insight into the affective organisational commitment and innovative behaviour of nursing employees. Such insight will provide an</td>
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understanding about current issues and create a foundation for processes that will increase the commitment of nursing employees and their propensity to be innovative and exhibit behaviour desired by the organisation.

Due to the current shortage of nursing and health care professionals there is a need to ensure that employee efficiency is maximised, to ensure a high standard of health care is provided. Therefore, a need arises to develop the innovative behaviour of nursing employees to maximise the capability of existing resources and to improve overall organisational efficiency and patient outcomes.

Based on these key points, this study sought to address the following primary research questions:

1.1.1 **Primary Research Questions (PRQ)**

**PRQ 1:** What is the impact of some organisational factors (procedural and interactional justice, organisational culture, tie strength, LMX and POS) upon work-related outcomes (affective organisational commitment and innovative behaviour) of nursing employees working within Australian healthcare?

**PRQ 2:** What are the similarities and differences in behaviour with regards to some organisational factors (procedural and interactional justice, organisational culture, tie strength and LMX) and work-related outcomes (POS, affective organisational commitment and innovative behaviour) for public and private sector nursing employees working within Australian healthcare?

1.2 **Context of examination: nursing employees**

The context of this study includes Australian healthcare employees from both the public and private sector, in particular focusing on nursing employees within three Australian
hospitals. The service provided by public sector nurses implies that they can be considered to be street-level bureaucrats; a term coined by Michael Lipsky (1980). Street-level bureaucrats are often referred to as public sector employees who as part of their job directly interact with society and are said to possess authority in the workplace (Bovens & Zouridis, 2002). Street-level bureaucrats include employees who work in schools, police departments, welfare departments, public hospitals and other public organisations that deal directly with individual citizens. The authority possessed by street-level bureaucrats is thought not to come from their ranking, because they are positioned at the bottom of the organisational hierarchy. Instead, Lipksy (1980) suggests that street-level bureaucrats have a considerable amount of discretion when undertaking their role and interacting with the public society and this is where their authority is gained. The authority possessed means that street-level bureaucrats are, more often than not, required to use discretion when determining whether or not to apply policies and/or laws. Street-level bureaucrats can also face unique situations, so their role requires that at times they interpret how policies, rules or laws should be implemented in that particular situation or case, which in turn affect the services offered to the public (May & Winter, 2009).

In contrast, government reforms in public healthcare management, over the past few decades, aimed at increasing accountability, effectiveness and efficiency have reduced the authority and autonomy once possessed by street-level bureaucrats. In addition, the changes to accountability were deployed based on a study by Hughes (1994) who suggested that bureaucratic operations focused on processes and therefore this meant that public employees were often not held accountable for the outcomes of their actions. The changes in public management reflected a private management approach, focusing on cost effectiveness and efficiency (Dunleavy & Hood, 1994). Additionally, there are three main methods in which
public organisations or bureaucracies have attempted to change their organisational structures to ensure a higher level of accountability and efficiency.

The three factors in which public management has changed include top management systems, budgetary controls and performance appraisals (Hood, 1995). The top management systems now provide senior management with information and knowledge about junior managers, including information about performance expectations and costs. In addition, budgetary controls have been decentralised and performance appraisals are now used to evaluate performance of both managers and employees in relation to achieving expected outcomes (Gruening, 2001). As a result, the introduction of a private sector style of management has seen an increase in the power that managers have over street-level bureaucrats. As such, this has seen a decrease in the autonomy and discretion of street-level bureaucrats in undertaking their roles (Feldman, 1992).

It could be argued with a degree of certainty that nursing employees are expected to undertake their role with a high level of discretion, although accountability and control has reduced this somewhat in the past few decades (Taylor & Kelly, 2006). However, the nature of a nurse’s role infers an unpredictable and chaotic work environment, which means a level discretion is required if problems are to be solved efficiently and effectively (Hudson, 2002; Rowe & Calnan, 2006). Past literature suggests that such a chaotic environment is a major contributing factor causing nurses to leave the nursing profession (Stolte & Myers, 1995; Unruh, 2008). Overall, it can be said that nursing employees whether in the private or public sector will face many of the same difficult to solve work-based problems. Therefore, to assist the solving of work-based problems, the Australian health sector may benefit from facilitating an environment where information, knowledge and resources are shared. Such an environment should provide a framework (tool-kit) for employees to use when attempting to
solve work-based problems (second-step of innovative behaviour). This issue, therefore, highlights the requirement of research that provides insight into the organisational factors that contribute to improving nursing employees’ commitment and innovative behaviour.

As previously mentioned, this study will examine both public and private hospitals in an Australian context. Public and private hospitals will be examined for two reasons. First, Australian health care consists of both public and private hospitals; 60 per cent of hospital beds are operated by the public sector and 40 per cent are operated by the private sector (Gee, 2007). Second, some literature suggests that, amongst other reasons, public sector reforms have seen a blurring between public and private health care, particularly within Australia (Baxter & Kroll-Smith, 2005; Brown & Barnett, 2004; Brunetto, Farr Wharton, & Shacklock, 2010; Flood & Thomas, 2010). In addition, the changes to hospital care in Australia have seen an increase in private sector hospitals (not for profit and for-profit), public-private partnerships (including the outsourcing of public sector operations and hospital co-location) and changes in public sector governance (Grimsey & Lewis, 2007). As such, the outcomes of public sector reforms and the rise of private health care have blurred the once clear distinction between public and private health care in Australia. Therefore, to provide an accurate examination of nursing employees within an Australian context, both the public and private sector will be examined.

1.3 The nursing profession

Nursing employees are part of a group referred to as the nursing profession. Over the past century nursing has strived to be known as a profession that operates in conjunction with other medical professionals. As such, because nursing employees are part of a profession they can be considered to be professionals, as well as street-level bureaucrats. In addition to SET, this thesis will use theory about professionals as a secondary lens for examining nursing
employees’ affective organisational commitment and their innovative behaviour. Professionals, professionalism and professions will be discussed in further detail in Chapter two. Nurses are considered to be part of a profession because they possess a unique body of knowledge, have to complete a university qualification, have to apply for acceptance into the profession and can undertake their role with some degree of autonomy (Liaschenko & Peter, 2004). However, as discussed this autonomy has decreased due to health reforms over the past few decades (Brunetto & Farr-Wharton, 2004a). In summary, this study examines nursing employees within the nursing profession and as mentioned will use theory about professionals to frame the research.

1.4 Justification for research

Although there is vast body of literature that has separately examined affective organisational commitment (Shore et al., 2008) and innovative behaviour (Åmo, 2006); there are a few gaps within the literature that justify the contribution of this study. As previously discussed, the extant literature examining nursing management has been pre-occupied with how to attract and retain nursing employees (e.g. Andrews, & Dziegielewski, 2005; Doiron et al., 2008; Gambino, 2010; O’Brien-Pallas et al., 2004; Stolte, & Myers, 1995). The issue is that while such studies are important they do not provide information about developing the efficiency and effectiveness of nursing employees. Therefore, although attraction and retention are vital during times of severe nursing shortages, it is just as important to improve the efficiency and effectiveness of current and prospective nursing employees. There are very few studies that have examined the organisational factors that are required to develop an environment that fosters the innovative behaviour of nursing employees (e.g. Åmo, 2006; Knol, & van Linge, 2009; Reuvers et al., 2008), which is known as one way to improve the
efficiency and effectiveness of employees. As such, the study aims to contribute new knowledge about fostering the innovative behaviour of nursing employees.

There is also a lack of empirical research examining the relationship between affective organisational commitment and innovative behaviour (Jafri, 2010). There were also no studies found that examined the impact of the affective organisational commitment of nursing employees upon their innovative behaviour. Additionally, Wagner (2007) outlined that there was a lack of research that has examined the organisational commitment of nursing employees. Therefore, the paucity of research provides a justification for this research and outlines that this study will contribute new knowledge about the relationship between the affective organisational commitment of nursing employees and their innovative behaviour.

There were no studies found that examined the relationship between tie strength and the innovative behaviour of nursing employees. In fact, following a review of the extant literature there were no studies found, with the exception of Xerri and Brunetto (2011), that examined the relationship between tie strength and innovative behaviour. In particular, there is research which suggests that knowledge and workplace relationships are vital in fostering innovative behaviour (Carbonell & Rodriguez-Escudero, 2009; Carmeli & Spreitzer, 2009; Maqsood et al., 2007; Xerri & Brunetto, 2011). Therefore, it is important to develop an understanding about the impact of the strength of workplace network ties upon innovative behaviour. As mentioned in section 1.1.1, this study will examine the relationship between the tie strength of nurses and their innovative behaviour. As such, this is one contribution to the literature and provides another justification for the research, because the relationship between tie strength and innovative behaviour is considered to be important and there is a lack of research examining this relationship.
A further review of the literature revealed another contribution this study makes to the literature and provides an additional justification for the research. For example, it is expected that interactional justice would be in some way related to innovative behaviour. Interactional justice can be explained as an employee’s perception about the fairness and quality of their workplace relationships (Luo, 2007). Interactional justice is thought to be important because workplace relationships can be used to transfer information, knowledge and resources, which are considered to be vital for fostering innovative behaviour in the workplace. However, following a review of the literature, there were no studies found that have examined the relationship between interactional justice and innovative behaviour. In summary, examining the relationship between the interactional justice of nursing employees and their innovative behaviour is another contribution this study makes to the literature and provides further justification about the importance of this research.

Janssen (2004) examined the impact of distributive and procedural fairness (justice) on the innovative behaviour of nurses. However, the study examined the perceptions of nurses from the perspective of their supervisors. Therefore, this study proposes to contribute to the literature and extend Janssen’s study by examining the relationship between procedural justice and the innovative behaviour of nursing employees from the perspective of the nurses themselves.

1.5 Articulation of methodology

The methodological process for this study will be applied within a post-positivist paradigm and will be designed to maximise the quality of data used for addressing the research questions. Past literature explains post-positivism as a conceptual framework created in a moderately controlled environment that produces replicable and generalisable data (Delarue, Van Hootegem, Procter, & Burridge, 2008). In order to create such an
environment and be able to generalise results to predict human behaviour, positivists abide by strict scientific guidelines when conducting research. Specifically, this study will be conducted within a post-positivist framework using a quantitative approach to data collection.

Quantitative methods are used within this study to gather data addressing the research questions and to confirm and extend the current body of knowledge (Creswell, 2009). This study is applying an explanatory design because, as a general rule of thumb, the study is attempting to test or confirm a theory (deductive), which implies a quantitative approach to data collection and analysis (Creswell, 2009). In particular, this thesis will be operationalised using self-report surveys; this will inform the study and provide information to address the research questions. As previously mentioned, the target survey participants will be nursing employees from three Australian hospitals, including both the public and private sector.

1.6 Plan of thesis

This research is deductive in approach, beginning with a detailed review of the literature about SET and professionals. This is followed by a detailed analysis of relevant concepts, including a review of the variables selected for testing that also evidently relate to the transfer of knowledge and the fostering of a committed and innovative workforce. This literature will be reviewed in detail because the variables selected for testing were identified as the gaps in the literature. These identified gaps are used to focus the study and create a conceptual model that can be empirically tested. An examination of the proposed conceptual model will be undertaken based on the perceptions of nursing employees. An examination of this model within a health care context, focusing on street-level bureaucrats (nursing employees) offers an in-depth insight about the impact of key organisational factors upon affective organisational commitment and innovative behaviour.
More specifically, this thesis contains seven chapters. Chapter one outlines the research topic, the context of the study, justification for the research, articulation of the methodology, a plan of the thesis and key definitions associated with the research. Chapter two reviews the theoretical frameworks (SET and professionals) that will be used as a lens to examine the organisational factors and outcomes proposed for testing. Chapter three begins by analysing the extant literature regarding workplace social exchange relationships and the impact that these relationships have upon affective organisational commitment and innovative behaviour. This analysis includes the bodies of literature about organisational justice, LMX, organisational culture, tie strength, POS, affective organisational commitment and innovative behaviour. Following the literature review, emerging gaps in the body of literature are discussed along with the hypotheses to be examined.

Chapter four describes several research paradigms and the research design to be utilised in this study. Chapter five describes the data gathering process, compilation and data analysis methods used. Chapter six outlines the results of the research undertaken, specifying and analysing a structural equation model to examine the data collected. The results from the structural equation model are also confirmed using partial least squares modelling. Chapter seven depicts the discussion and conclusion of the research in more depth. Pattern-matching is discussed in chapter seven and is utilised as a tool to show similarities with and differences from the body of literature examined and the results from this study (Yin, 2003). The conclusion includes a discussion about the studies limitations and suggested areas for future research.

1.7 Conclusion

This chapter has presented an overview of this thesis. The overview included a synopsis discussing the justification for the research along with the methodological paradigm
that will be used to operationalise the research. This thesis adds to the body of literature by examining the role of workplace social exchange relationships in developing committed and innovative nursing employees. This study is important because it seeks to address current issues within nursing management and aims to fill some gaps within the current body of knowledge. As previously mentioned, the organisational factors that will be examined include procedural and interactional justice, LMX, organisational culture, POS, tie strength, affective organisational commitment and innovative behaviour. In addition, the context of the study was explored and the research questions under examination were provided in order to reveal the goals of the research. The next chapter will introduce and review the relevant extant literature about the theoretical frameworks that will be used when examining the organisational factors and work-related outcomes proposed to be tested.
2.0 **CHAPTER TWO: THEORETICAL FRAMEWORK**

2.1 **Introduction**

This chapter reviews the current published literature about SET and professionals; both theories will be used as a theoretical lens for examining the proposed research model, although the professional literature is used as a secondary lens. As such, the chapter begins by explaining SET and then uses the theory to operationalise the research. This is followed by a description of the foundations and historical context of SET. Once the historical foundations are explained the differences between social and economic exchange are clarified. Further explanation is then given about sub-categories explaining the different types of social exchange relationships and the different factors that influence these relationships. This is then followed by an examination of some of the organisational factors that have used SET as a lens for examining workplace social relationships.

Additionally, literature about professionals is also reviewed; in particular this provides a secondary lens for examining the conceptual model (Chapter three, figure 3.1) and the results derived from testing the conceptual model. The literature review examining professionals begins by defining a professional and deciphers between terms used within the existing body of knowledge, including professionals, professions and professionalism. To provide a contextual understanding about professionals in the workplace and concepts associated with professional employees, in particular nurses, factors such as professional collegiality, autonomy and accountability of nurses are examined. The review also focuses on organisational-professional conflict with regards to current nursing workloads and the difference that has formed between organisational and professional goals. In summary, literature about SET and professionals are examined focusing on developments to the current
body of literature about the role of workplace relationships in contributing to the development of a committed and innovative nursing workforce.

2.2 The historical context of social exchange theory

Social exchange as a theory has been developed over the past 50 years by researchers. The theory began with the seminal work of Thibaut and Kelly (1959), Homans (1961) and Blau (1964). Homans (1961) explained social exchange as the exchange, between two or more people, whether it be tangible or intangible and that it could be rewarding and costly for those involved. Homans’ work was predominantly built on the notion of dyadic exchange (exchange between two people), which formed the basis for his consideration of other sociological constructs, including distributive justice, balance, status, leadership, authority, power and solidarity. The critics of Homans’ work suggest that his line of research blatantly used psychological principles as the basis of psychological theory and that it undervalued the importance of the institution, social processes, and structures in relation to the exchange process (Makoba, 1993).

Blau (1964) furthered the understanding of social exchange in relation to rewards and costs. He proposed that people are either forward looking (Utilitarianism), so they act in terms of the rewards they anticipate, or they are backward looking (reinforcement theory), that is, they look to what has rewarded them in the past. Blau also introduced the importance of the group into social exchange, thus adding to Homans dyadic conceptualisation of social exchange. There is, however, some concern regarding Blau’s propositions. For example, although Blau introduced the notion of grouped social exchange, his conceptions were still very much dyadic in nature, that is, the group was made up of people in linked dyadic relationships (Uehara, 1990). The main issue is that while social exchange theorists have
since acknowledged the importance of groups, their structure and processes in social exchange research has still predominantly only examined the workplace social relationships between dyads.

Nevertheless, SET was first made popular with Blau’s addition to Gouldner’s (1960) theory about the norm of reciprocity. The norm of reciprocity is based on two main concepts. First, people should help others who in the past have helped them and second, people should not harm or plan to harm those who have helped them in the past. Gouldner (1960) postulates that social exchange is a fundamental form of social interaction learned in childhood, as well social exchange is reciprocal in nature and grows in frequency and value over time, provided that both parties feel the exchanges balance with regards to reciprocity. Moreover, SET outlines the circumstances that must be met whereby people feel indebted when they benefit from the actions of others or from the organisation that employs them. Paese and Gilin (2000) argue that reciprocity applies its power of persuasion through feelings of obligations imparted on a person preceding the benefit they received from a particular social exchange. The feelings of obligation are said to occur fairly quickly and at times are considered almost automatic, whether or not the action was requested.

Malinowski (1932) postulates that reciprocity is a social derivative that can be used to explain the theory of conformity. It is suggested that conforming to rules and norms is developed from obligations, and in the context of this study, obligatory feelings are developed by employees on the premise that they owe one another. More specifically, the obligatory feelings are directed at workplace social network members that usually exchange directly or indirectly with other workplace social network members. Sahlins (1972) added to the seminal work of Malinowski (1932) and Gouldner (1960) to provide insight into the process of reciprocity. Sahlins suggested that reciprocity is best explained as a continuum
and further suggests that at one end of the continuum is balanced reciprocity, which can be characterised by the fact that there is no expectation with regards to the timing or the quality of the reciprocation. In contrast, and at the other end of the continuum, balanced reciprocity refers to a more direct exchange with a clear set of parameters. Such an exchange can be attributed to the likeliness of an economic exchange, where reciprocation usually takes the form of some type of repayment that is expected to be received within an agreed time frame. Therefore, Sahlins’s (1972) reciprocity continuum provides a clear theoretical underpinning to explain the differences between social and economic exchange.

Building on Gouldner’s work, Blau (1964) found that social exchange differs from purely economic exchange in two important respects: the concepts of ‘discharge’ and ‘unspecified returns’. Blau (1964) contends that the provision of something of value puts the recipient under an obligation to reciprocate (i.e., the need to discharge the ‘debt’). However, repeated failure to reciprocate (or chronic under-reciprocation) leads to fewer offers in the future and a sense of disrupted expectations on the part of the giver, which impacts upon the quality of the relationship (Blau, 1964; Gouldner, 1960). The concept of ‘unspecified returns’ refers to the undefined nature of social exchanges; that is the exact nature, value and timing of any return are left to the discretion of the recipient (Blau, 1964). Notwithstanding this, there is research suggesting that exchange relationships are more stable and satisfying if the perceived ‘rewards’ are approximately equal for each partner (Bernerth, Armenakis, Feild, Giles, & Walker, 2007). Therefore, mutuality and reciprocity are considered as important components of successful social exchange (Dienesch & Liden, 1986). Social exchange theorists contend that reciprocity and mutuality are principles of social exchange that promote order and stability in social and organisational life (Bernerth et al., 2007).
Past literature has since outlined several other principles and values that can influence workplace social relationships and the reciprocity or outcomes of such relationships. In particular, when examining social interaction it is expected that the outcomes of workplace social relationships will be subject to the social values of the individuals involved in the relationship. Maki and McClintock (1983), in early research, outline that social value with regards to social exchange can be considered as an individual’s preference about outcomes of the exchange. Therefore, the ideal social value would be dependent on the particular situation and/or the perspective of the people involved. However, organisations seeking to foster an environment where employees’ possess an adequate number of social network ties, should facilitate a culture founded upon social cooperation and network development (McClintock & Liebrand, 1988). While the importance of social values when examining social exchange relationships are undoubtedly important, it is imperative to understand the foundation from which individual social values are developed.

For example, past literature suggests that cultural values influence the perception and behaviour of individuals with regards to their workplace social exchange relationships. Cultural values encompass regional, national and organisational cultures. Past literature while acknowledging the importance of organisational culture has focused on the impact of regional and national cultural values on an individual’s social values and the workplace social network relationships they develop (McDermott & O’Dell, 2001; Unruh, 2008). There is however, a lack of empirical research examining the role of organisational culture in developing workplace social relationships (Lizardo, 2006), particularly which supports the facilitation of a committed and innovative workforce.

Sanders, Moorkamp, Torka, Groeneveld and Groeneveld (2010) suggest that high quality relationships between supervisors and subordinates should have a positive influence
on employee innovative behaviour. There is however a paucity of empirical research that has used SET as a framework for examining employee innovative behaviour, although there are a few studies that will be briefly discussed. For example, Janssen (2000) examined the impact of employee perceptions about effort-reward fairness on innovative work behaviour. Ishak (2005) studied the impact of individual innovativeness on the supervisor-subordinate relationship and organisational citizenship behaviour. More recently, Sanders and Shipton (2012) proposed that SET can be used as a framework for examining the relationship between transformational leadership and innovative behaviour. Sanders et al. (2010) used SET as a framework for examining the impact of LMX and satisfaction with HR practices on employee innovative behaviour. Shih and Susanto (2011) examined the moderating effect of perceived distributive justice with the relationship between conflict with co-workers, turnover intentions and innovative work behaviour.

The literature reviewed in the previous paragraph provides support that SET is an appropriate framework for examining innovative behaviour. However, gaps still remain in the understanding about how social exchange relationships influence employee innovative behaviour, particularly for nurses. As such, this thesis aims to contribute to SET in two ways. The first contribution will provide insight into the use of SET as a framework for examining the innovative behaviour of nursing employees. The second contribution is derived from the use of a unique combination of social exchange factors for examining innovative behaviour. Specifically, this thesis uses a unique combination of social exchange factors and will simultaneously (using structural equation modelling) examine the impact of such factors on the affective organisational commitment and innovative behaviour of nursing employees.
2.3 Social Exchange Theory

Social exchange theorists suggest that social exchange involves a series of interactions that over a period of time generate obligations and liberties between workplace social network members (Åmo, 2006; Cook & Whitmeyer, 1992; Cropanzano & Mitchell, 2005; Maurer et al., 2002). The social interactions tend to be mutually dependent and contingent upon the actions of another person. The term mutuality is not commonly used; however, it has been used in the past to refer to a reciprocal relationship between two entities (Dabos & Rousseau, 2004). In addition, reciprocity within an organisation refers to the cooperative exchange between employees or between employees and the organisation. More specifically, the theory of reciprocity is based on the assumption that one good deed or exchange from one entity will be returned at some point by the receiver of the good deed or exchange. Additionally, these mutually dependent or reciprocal interactions under the right circumstances are able to generate high quality relationships in the workplace (Maurer et al., 2002). This means within organisations, if employees are satisfied with the outcomes of their workplace exchanges, they are more inclined to respond with greater performance in the workplace (Shaw, Dineen, Fang, & Vellella, 2009). When employees are satisfied with the outcomes of their workplace relationships, they are more likely to respond by fulfilling obligations they have to their supervisor and/or employing organisation. Reciprocal social exchange relationships are said to develop only if all parties involved consider the exchange as valuable and feel as if they can contribute.

SET researchers have examined exhaustively the exchanges between employees and the organisation, as well as, between employees and their supervisors (Cropanzano & Mitchell, 2005; Griffith, Harvey, & Lusch, 2006; Konovsky & Pugh, 1994; Paillé, 2009; Shaw et al., 2009; Whitener, Brodt, Korsgaard, & Werner, 1998). However, there has been
minimal research about the social interaction and exchange between colleagues or work based teams (Paillé, 2009). Wayne, Shore and Liden (1997) suggest SET researchers have been interested in the role of exchange processes when attempting to foster an improvement in organisational effectiveness. Therefore, this study aims to confirm, amongst other things, literature about the role of exchange processes and contribute new knowledge about social exchange between nursing employees (colleagues).

One of the main assumptions of SET outlines that relationships evolve over a period of time into trusting, loyal, and mutual commitments. However, while the effective development of workplace social network ties can be developed over a period of time, social exchange theorists suggest that such relationships will only be fostered under ideal conditions (Cole et al., 2007). What this means is that to facilitate an environment that fosters workplace relationships, it is imperative that employees abide and follow the rules and norms of exchange as guidelines to the exchange process. By abiding with the rules and norms of the exchange process, employees are more likely to share in positive exchanges with other employees (Cook & Whitmeyer, 1992; Gefen & Ridings, 2002). In particular, past literature suggests that under ideal conditions for developing workplace social exchange relationships, organisational culture (unwritten rules and norms) will be developed once mutual trust and respect has been established (Cropanzano & Mitchell, 2005; Whitener et al., 1998). Past literature suggests that an organisation’s culture is shaped by the organisation’s workplace social networks (Lizardo, 2006). However, there is no literature with the exception of Lizardo (2006) that examines the impact of an organisation’s culture upon workplace networks and relationships.

Obstfeld (2005) suggests that an employee’s knowledge of organisational culture will impact upon the effectiveness of workplace social network exchange. As such, to develop
innovative behaviour it is imperative that an organisational culture is developed that supports innovation in the workplace. Therefore, it is important to determine which management practices and organisational values, rules and norms will promote and support the development of workplace relationships and innovative behaviour (Åmo, 2006). With this said, past literature about SET suggests that trust must first be developed before sustainable workplace social relationships can be created (Blau, 1964).

Furthermore, because it is difficult to determine what a workplace social network member may consider as an appropriate return for their actions, it is essential that workplace social network members reciprocate appropriately with one another. Such reciprocation is extremely complicated and only after several interactions will workplace social network members be able to determine appropriate forms of reciprocation for different exchange situations (Cole et al., 2007; Griffith et al., 2006; Julian & Fiona, 2005; Lavelle, Rupp, & Brockner, 2007; Molm et al., 2007). The main issue to consider is that the workplace social network members involved in the exchange need to perceive that they can contribute adequately in the exchange process (Cropanzano & Mitchell, 2005) and that all members perceive that the exchange is fair (Walster, Walster, & Berscheid, 1978). In addition, if one party trusts that another will reciprocate suitably and they consider the benefit provided in the reciprocation to be fair in relation to what they have already provided in the exchange process, then this provides impetus for sustained reciprocal social relationships in the workplace.

Organisations seeking to successfully facilitate reciprocity and the transfer of information between employees will develop a platform or mechanism to support the development of workplace relationships (Cross, Parker, Prusak, & Borgatti, 2001; Marouf, 2007). Such mechanisms include a supportive organisational culture, as well as supervisor
and organisational support. Evidence suggests that organisations can encourage the development of workplace networks when appropriate policies and procedures are implemented, which govern and facilitate the development of workplace relationships (Dobni, 2008; Kotter, 1995). This is important because organisational policies and goals are useless if they are not effectively communicated, implemented and embedded throughout the organisation. Therefore, supervisor support is pivotal in ensuring organisational goals are realised, or in the context of this study that nursing employees have access to support, information and resources through a vast workplace network. This way nursing employees will have access to the resources they require, supporting innovative behaviour in the workplace.

SET research implies that an exchange relationship exists between an employee and their employing organisation, as a result of the employment contract. Konovsky and Pugh (1994) suggest that the supervisor is an agent of the organisation. Therefore, because a supervisor has their own exchange relationship with employees and they can influence the relationship an employee has with the organisation, supervisors are considered to be a pillar that supports the social exchange framework. For example, the relationship that an employee has with the supervisor, if built upon mutual trust and fairness is suggested to impact positively on the obligations and liberties developed between an employee and their supervisor, as well as their employing organisation. As such, the supervisor undertakes a central position when considering a mechanism for facilitating workplace social exchanges and developing an environment that fosters commitment and innovative behaviour.

Additionally, such workplace social exchanges over a period of time are thought to develop either positive or negative relationships. More specifically, when employees interact several times with each other they learn whether or not they can trust one another. Blau...
(1964) refers to trust as developing mutually between workplace social network members and also suggests that trust is developed over several interactions, which take place over a period of time. Effectively managed social relations can facilitate a culture of trust successfully leveraging the knowledge of the network members (Das & Teng, 1998; Droege, Anderson, & Bowler, 2003; McKnight, Cummings, & Chervany, 1998; Van Dyne, Vandewalle, Kostova, Latham, & Cummings, 2000). When members develop trusting relationships, an environment is created to effectively transfer and leverage relevant knowledge, information and support (Barnir & Smith, 2002; Hoang & Antoncic, 2003). Therefore, trust is an important facet impacting upon the effectiveness of workplace social exchange relationships.

However, to facilitate an environment where nursing employees possess an appropriate number of workplace social relationships, requires the combination of several factors and cannot be promoted simply with a supportive environment. Literature about SET suggests that employee behaviour is often manipulated by rewards, benefits and social obligations, which are thought to impact on trust, organisational norms and the underlying characteristics of the relationship (Cropanzano & Mitchell, 2005; Wagner, 2007). On the other hand, Maurer et al. (2002) postulated that supervisor-subordinate exchanges encompass different conditions to that of workplace social relationships between employees. Supervisor-subordinate exchange is suggested to be beneficial to the organisation, as well as to the supervisor. This can be attributed to the fact that while the employee may have undertaken a task to provide an obligatory return to the supervisor, there may also be a benefit to the organisation, especially if the supervisor’s goals are aligned with organisational goals. Therefore, due to the complexity of workplace social exchange and developing workplace social networks, the theory of social exchange will be discussed further in the following section.
2.3.1 The differences and similarities between social and economic exchange

Past literature suggests that SET was constructed to provide insight into social interaction and the optional exchange of benefits between those involved with the social exchange or interaction. The overarching methodology of SET is based on self-interest, what this means is that individuals are often motivated by the benefits they are expected to receive (Cropanzano & Mitchell, 2005; Julian & Fiona, 2005). As previously mentioned, the expectation of receiving a benefit is similar between social and economic exchanges. Predominantly, economic exchanges are considered to be short-term exchanges, because often the benefit is paid prior to or immediately after the transaction has been completed. Social exchanges, in contrast to economic exchanges, are developed around the notion of individuals trusting that the other members involved in the social exchange will reciprocate the behaviour or benefit received at some point in time in the future. Social exchanges when compared to economic exchanges are considered as long-term, because the reciprocation is not guaranteed and can take place at any time in the future.

According to SET, interpersonal exchanges can be viewed as valuable if the cost is less than the benefit of the exchange. This is similar to an economic exchange, except for a social exchange the intangible social costs and benefits are compared (respect, honour, friendship and caring) instead of monetary gains (Cropanzano & Mitchell, 2005; Konovsky & Pugh, 1994). Similar to an economic exchange, a social exchange presumes that employees will enter into an exchange only when they expect that the benefit of the exchange will outweigh the cost. There is one main factor that sets apart social from economic exchange, a social exchange gives no guarantee that the benefit provided in an exchange will be reciprocated by the other party. More specifically, there are no written rules and norms or policies that manage or control the social exchanges between employees.
This factor highlights the importance of an organisational culture that clearly articulates the intangible rules and norms for exchange and for the development of workplace social network relationships (ties) (Granitz, 2003). As a result, this should reduce the ambiguity associated with the expectations and common practice of social exchanges in the workplace (Cole et al., 2007). However, it would be naive to think that to influence or clearly articulate organisational cultural values is by any means a simple task. Nevertheless, the importance of supporting and facilitating workplace social relationships is pivotal in providing an environment that fosters commitment and the innovative behaviour of employees (Maqsood et al., 2007; Martins & Treblanche, 2003; Williams & Anderson, 1991).

Past literature suggests that social exchange relationships are essential in today’s organisations, because employees that enter into such relationships with other employees and their employing organisation are more likely to feel obligated or committed to the organisation and other employees within the organisation (Brunetto, Farr-Wharton, Nelson, & Shacklock, 2008). On the other hand, economic exchanges which are associated with remuneration, bonuses and benefit schemes and which are also referred to in past literature as negotiated exchanges are considered to be less risky, but are not developed on experiences of trust between members and therefore are not linked with any behaviour associated with organisational commitment. Furthermore, it is the feelings of trust, obligation and commitment that have led researchers to term social exchange relationships as ‘high quality’ (Graen & Uhl-Bien, 1995).

However, economic or negotiated exchanges tend to be referred to as ‘low quality’ with regards to their ability to in-part feelings of obligation or commitment from employees’ toward their employing organisation. Economic exchanges are said to not impact on
employee’s affective organisational commitment, because such exchanges are undertaken following clear contractual guidelines that direct both parties and therefore do not require one party to trust the other (Åmo, 2006). For that reason, economic exchanges are consider to be low quality with regards to developing trust and organisational commitment, because they do not develop mutual trust between the parties involved in the exchange (Graen & Uhl-Bien, 1995). As a result, no social relationship is formed and no obligatory feelings are in-parted that goes beyond the contractual obligations. This is not to say that economic exchanges overall are low quality, it is obvious that employees will not remain with their employing organisation if they are not renumerated appropriately or according to contractual agreement. As mentioned, when considering the development of workplace social exchange, economic exchanges are considered as ‘low quality’. However, economic and social exchange are not the only two factors to considered when using SET, because there are different types of social exchange relationships.

### 2.3.2 Different types of social exchange relationships

Past literature has tended to categorise social exchanges as either being generalised (direct) or restricted (indirect). The restriction categorisation suggests that within a dyadic relationship the two parties will directly exchange favours with one another. The generalised category, on the other hand, takes place among a group of three parties or more and there is considered to be no direct reciprocity between the parties (Molm et al., 2007). In particular, what this means is that if one person receives a favour or some form of benefit from another person this is not contingent on what they have received from this person in the past. Molm et al. (2007) suggest that there is a lack of past literature that examines social exchange within the context of generalised or restricted reciprocity. Although there are several past studies that have examined relationships associated with generalised exchange, there has been
little to no mention about the differences and similarities between generalised and restricted exchange.

For example, Molm et al. (2007) examined the prediction that a collective system of generalised exchange generated greater bonds and relationships (solidarity) compared to restricted exchange. While the study by Molm and colleagues did address a gap within the literature, it also had limitations of its own. For example, the study addressed the process of generalised exchange, that is, they examined how the risk of non-reciprocity, expressive value and the salience of control impact on social solidarity. However, a gap in the literature still remains with regards to the factors that influence the generalised exchange and whether this is similar or different compared to restricted exchange. To summarise, although an examination between generalised and restricted exchange is beyond the scope of this thesis, such thinking highlights some areas for future research.

On a more critical note, Zafirovski (2005) suggests restricted and generalised exchange appears inadequate and contradictory. Zafirovski outlines that social exchange theorists propose that restricted exchange is primary when compared to generalised exchange based on the notion that restricted exchange is centred on mutual rewards, compared with generalised exchange which is based on social norms and obligations. Considering that restricted exchanged is associated predominantly with dyads, and generalised exchange on social systems and/ or networks of social exchange, the claim about restricted exchange being primary breaches modern social exchange theory, which is predominantly focussed on social exchange networks as opposed to dyadic relationships.

The conceptualisations (generalised and restricted exchange) discussed in the previous paragraph are the main types of exchange that have been echoed throughout SET
literature. It therefore becomes apparent that there is no one unified theory of social exchange; instead there are a number of different theoretical and conceptual approaches (Uehara, 1990). As a result of the various theoretical and conceptual underpinnings, the research applications of SET may be limited in their utility, particularly for analysing the structure and dynamics of workplace social relationships. Cropanzano and Mitchell (2005) suggest that although SET is a useful theory, it is not without its limitations. For example, they outline that ‘…the core ideas that comprise SET are yet to be adequately articulated and integrated’ (p.875). While there are countless studies that have contributed to the understanding of SET, Jepsen and Rodwell (2007) agree with Cropanzano and Mitchell suggesting that the framework is deficient in many ways, but nonetheless is still the foremost used theory for examining social relationships in the workplace.

To add to the depth of understanding about SET, Ekeh (1974) further breaks down generalised social exchange stipulating that it can be either ‘chain’ or ‘net-based’. A generalised chain implies a link from one party involved in the set of social exchanges to the next and so forth. For example, person ‘A’ exchanges with person ‘B’, who exchanges with person ‘C’, who exchanges with person ‘A’. As a result, a generalised social exchange chain has been formed between the three parties. In contrast, a generalised net-based exchange proposes that individuals contribute to a group as a whole, not simply to individuals within the group. Therefore, people involved in a generalised net-based social exchange are said to benefit directly from the group and not separately from individuals within the group.

Additionally, the disparity between a generalised chain and net of social exchanges can be outlined by examining whether the individual members exchange one on one with each other or with the group as a whole. Early literature about social exchanges predominantly examined the interaction between dyads or generalised chains (Molm, 2006).
In contrast, contemporary studies consider that social exchanges take place as part of a larger social network, which investigate how in this case employee’s structural opportunities for a number of different exchange partners’ impacts upon processes, such as power, coalitions, commitment and trust (Molm, 2006).

Research findings suggest that positive and favourable actions directed at employees by their employing organisation and/or the people that represent the organisation is the foundation from which to build high quality workplace exchange relationships (Cole et al., 2007; Julian & Fiona, 2005; Maurer et al., 2002). As previously mentioned, the establishment of high quality workplace social relationships creates obligatory feelings for employees to reciprocate the positive and favourable actions they have received. Past literature converges on the notion that employees that possess and engage in several different social exchanges within the workplace will each have a different structure (rules and norms) and set of benefits attached (Maurer et al., 2002; Wayne et al., 1997).

Schaefer (2009) identifies two dimensions of resources that trigger or control workplace social exchange relationships, including duplicability and transferability. Duplicability refers to the actual exchange and whether the receiver of the information, knowledge or resource retains control of the property following the exchange. For example, assistance and information can be shared between many because they are easily duplicable. However, some commodities and trade goods that are not able to be duplicated usually only have one exchange partner for each particular good. Although many of one particular good can be manufactured, that good only has one exchange partner. Transferability refers to whether the receiver of the information, knowledge or resource is free to exchange the property in other exchanges. For instance, information can be easily transferred from one
person to next, while it is much more difficult to transfer assistance, especially if the assistance requires the transfer of tacit knowledge.

Lin and Huang (2010) suggest that social exchange relationships are developed based on the theory of equity. The development of equity theory can be traced back to the seminal work of Adams (1965; 1963), who proposed that equity can be explained from theories such as exchange, dissonance, and social comparison. Equity theory refers to the fact that employees can become unsatisfied if they perceive that another employee is receiving the same or a similar remuneration package, reward or bonus for less effort or value adding qualities. If an employee perceives inequity, this is thought to cause greater distress and the employee will work harder to restore equity. The idea of distress is based on the fact that, in an organisational context, employees are similarly sensitive to equity, so it is important that they perceive input-to-outcome as being fair when compared to others. This notion has been referred to as the “norm of equity” (Walster et al., 1978). The problem with this is that employees’ may reduce their level of effort or reciprocal behaviour based on their perceptions. Therefore, in the context of this study nursing employees’ may exhibit behaviours associated with reduced on the job effort, lower commitment and a reduced propensity to be innovative, if they perceive the procedures and polices within their organisation as being unfair (Luo, 2007). As a result, if employees’ perceive procedures and policies to be unfair (low procedural justice), such perceptions will in-turn strain the social exchange relationship that employees’ have with their organisation, supervisors and possibly their colleagues. This is why the formal policies and procedures that govern the formal organisational networks and the overall operations of the organisation directly impact upon the informal social interactions that take place within organisations.
However, the alignment of employee behaviour and actions with the vision and goals of the organisation has proven to be a major challenge facing organisations. This is because while the construction of a logical policy that in theory seems fair is easy enough for organisations, the implementation of the policies in a way that is perceived as being fair by employees is often where the issues arise (Bortheridge, 2003; Luo, 2007). Therefore, when examining social exchange factors such as procedural justice, it is not only the content of the policy that is important, but the practice in which the policy is implemented that impact upon employee behaviour, organisational outcomes and the perception of fairness (Konovsky, 2000). Furthermore, the formal policies and procedures developed within organisations can be used as the mechanism or platform from which to develop generalised: chain or net, or restricted social exchange relationships (Molm et al., 2007). As a result, the proposed research questions provide direction for examining social exchange factors (procedural and interactional justice, organisational culture, tie strength, LMX and POS) to determine the extent of their impact upon an organisation’s ability to successfully foster employee commitment and innovative behaviour for private and public sector nursing employees.

2.3.3 **Current limitations of SET**

There are many studies that have used social exchange as a theory for understanding relationships in organisations. In particular, SET is considered to be the dominant theory for examining workplace relationships (Shore, Coyle-Shapiro, Chen, & Tetrick, 2009) and more broadly for examining organisational behaviour (Cropanzano & Mitchell, 2005). For example, Shore et al. (2009) suggest that there are a number of unaddressed issues in the studies that have developed SET, because there is a lack of longitudinal and experimental studies within the literature. As such, the predominance of cross-sectional research in SET
has limited the causation that can be drawn from such studies (Bowen & Wiersema, 1999) and thus highlights a gap in the current body of knowledge.

At this stage, it is also important to acknowledge issues within the current understanding of SET. Specifically, Blau (1964) postulated that SET and the norm of reciprocity were theories with universal applicability. While in this study it is not the intention to dispute such claims, it should be recognised that there is limited empirical research to substantiate the universality of the theory. Shore et al. (2009) suggest that SET is applicable, for example, within a Chinese context, but that there are clearly differences in how SET is applied in such contexts. Cropanzano (2005) adds to the argument suggesting that the way in which reciprocity is applied will vary between people and culture. As such, although SET may be considered to be universal, the differences associated with national cultural contexts indicate that the notion of universality requires further empirical testing. To address the limitations within this study is beyond the scope of this thesis; however, highlighting such limitations provides one way forward for future research. With this said, there may be limitations currently associated with SET, some of which can be addressed, nonetheless SET is an appropriate framework for examining organisational factors and workplace relationships associated with nursing employees.

Cropanzano and Mitchell (2005) also propose that the basic concepts that underpin SET have not been completely identified. The main area that is lacking in empirical understanding is the rules of exchange. More to the point, Liden, Sparrowe and Wayne (1997) suggest that there is a paucity of research that has empirically examined the social exchange process, and we therefore have a limited understanding of the social exchange processes. Cropanzano and Mitchell (2005) outline that there are different resources that can be exchanged (e.g. love, status, information, money, goods, and services), but due to a lack of
research we know little about the rules that govern the exchange of such resources. Cropanzano and Mitchell also call for more research into the types of resources exchanged and the different types of relationships in which they are exchanged.

2.3.4 Social exchange of nursing employees

Past literature suggests strong or close workplace social relationships can increase an employee’s commitment to the organisation (Julian & Fiona, 2005; Neves & Caetano, 2006). As a result, employees’ that are committed to the organisation are more inclined to undertake practices associated with innovative behaviour. However, it is important to determine if this is the case with employees that form the nursing profession. There have been few studies that have examined nursing employees using a SET lens. Schaufeli, Van Dierendonck, and Van Gorp (1996) suggest that a lack of reciprocity with regards to workplace social exchange between nurses, as well as the relationship nurses have with their employing organisation implies inequality in the relationship. More specifically, inequality in workplace relationships has been suggested to lead to the burnout or reduced organisational commitment of nurses (over a period of time) (Gruening, 2001). However, the generalisability of the study by Schaufeli et al. (1996) is limited because the model was only tested on nursing students and not nursing employees. Therefore, a review of nursing management literature highlights the requirement for further empirical research into the workplace social relationships of nursing employees.

At this stage, it is important to discuss the existing literature about social exchange in a nursing context. However, due to the large volume of studies that apply a social exchange framework in a nursing context; the research listed below (see Table 2.1) is limited to the concepts proposed to be examined within this thesis. A review of the literature revealed that supervisor-nurse relationships (leader-member exchange) are of particular importance in
relation to a nurse’s commitment to their employing organisation and their perception of organisational support. Nurses’ perception of interactional and procedural justice also appeared to be related to organisational commitment and nurses’ perception of organisational support. Although, there seemed to be more empirical support that interactional justice was a predictor of the supervisor-nurse relationship, and that procedural justice was a predictor of a nurse’s perception of organisational support. Nurses’ perception of organisational support was also found to positively influence their affective organisational commitment.

Table 2.1 Social exchange concepts in a nursing context

<table>
<thead>
<tr>
<th>Author</th>
<th>Sample size</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunetto et al. (2012)</td>
<td>N =1283</td>
<td>Psychological empowerment and supervisor-nurse relationships positively influence nurses’ affective organisational commitment.</td>
</tr>
<tr>
<td>Gellatly (1995)</td>
<td>N = 166</td>
<td>Nurses’ perception of interactional justice is positively related to their affective organisational commitment.</td>
</tr>
<tr>
<td>Tremblay, Cloutier, Simard, Chênevert and Vandenberghe (2010)</td>
<td>N = 1219</td>
<td>Nurses’ perception of procedural justice indirectly and positively influences affective organisational commitment through trust. As well, procedural justice was positively related to nurses’ perception of organisational support.</td>
</tr>
<tr>
<td>Armstrong-Stassen and Schlosser (2010)</td>
<td>N = 974</td>
<td>Nurses’ perception of procedural justice is positively and significantly related to their perception of organisational support.</td>
</tr>
<tr>
<td>Al-Hussami (2009)</td>
<td>N = 192</td>
<td>Nurses’ perception of organisational support is positively related to their affective organisational commitment.</td>
</tr>
<tr>
<td>Laschinger (2004)</td>
<td>N = 285</td>
<td>Interactional justice was a strong predictor of nurses’ perception of how they are respected by their supervisor.</td>
</tr>
<tr>
<td>Study Authors and Year</td>
<td>Sample Size</td>
<td>Findings</td>
</tr>
<tr>
<td>------------------------</td>
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</tr>
<tr>
<td>Squires, Tourangeau, Laschinger and Doran (2010)</td>
<td>N = 600</td>
<td>Interactional justice is positively related to leader-nurse relationship.</td>
</tr>
<tr>
<td>Gillet, Colombat, Michinov, Pronost, Fouquereau, (2013)</td>
<td>N = 500</td>
<td>Procedural justice positively and significantly influenced nurses’ perception of organisational support.</td>
</tr>
<tr>
<td>Lavelle, McMahan and Harris (2009)</td>
<td>N = 50</td>
<td>Organisational procedural justice positively influences nurses’ perceived organisational support. Supervisor procedural justice positively influences nurses’ perception of supervisor support.</td>
</tr>
<tr>
<td>Hicks-Clarke and Iles (2000)</td>
<td>N = 245</td>
<td>Organisational justice is positively related to organisational commitment.</td>
</tr>
<tr>
<td>O’Donohue, Donohue and Grimmer (2007)</td>
<td>N = 156</td>
<td>Interactional, procedural and distributive justice were positively correlated with nurse students perception of organisational support.</td>
</tr>
</tbody>
</table>

2.3.5 **Examining workplace relationships, behaviour and organisational commitment using SET as a theoretical lens**

In addition, past literature suggests that SET is an appropriate lens to examine workplace relationships, attitudes and behaviours (Gruening, 2001; Julian & Fiona, 2005; Molm et al., 2007). The prominence of SET is derived from the fact that in contrast to monetary benefits or gains implicated in an economic exchange, the benefits associated with social exchanges are dependent upon mutual support and effort that is exerted during the exchange. As an example, considering the employment relationship, if an organisation's exchange with employees is founded upon the premise of fair treatment a positive social exchange relationship may be developed that facilitates positive attitudes, work behaviours, and provides an environment where employees are committed to the organisation.
SET literature postulates that employees are more likely to exhibit lower levels of organisational commitment when they perceive that their overall effort exceeds the remuneration or benefits they receive (Julian & Fiona, 2005; Taylor & Pillemer, 2009). More specifically, employees are less inclined to be committed to the organisation if they perceive there to be inequality in their workplace relationships or a lack of reciprocity between themselves and their supervisor or organisation (Moideenkutty, Blau, Kumar, & Nalakath, 2001). This theory is further supported by literature about interactional justice, which suggests that employees are more likely to exhibit attitudes and behaviour that is not desired by the organisation if they perceive that the interaction/exchange with their employing organisation or supervisor is not fair (Gruening, 2001).

2.3.6 Examining nursing employees’ perceptions of organisational justice using SET as a theoretical lens

Current theory about the fair treatment of employees has been developed from current organisational justice literature. Organisational justice refers to both an individual and a group’s perception of the fairness of interactions between themselves and the organisation and the behaviours that is a result of their perceptions (Erdogan, 2006). The fair treatment of employees suggests that the organisation is prepared to work with their employees, which should instil obligatory behaviour for the employee to reciprocate with behaviours associated with organisational goals. Research to date, has found that the dimensions of organisational justice are all related differently to an employee’s work behaviour, attitudes and perceptions (Ansari, Hund, & Aafaqi, 2007; Judge & Colquitt, 2004; Konovsky & Pugh, 1994; Stinglhamber, Cremer, & Mercken, 2006). It is therefore important to examine the specific impact of organisational justice dimensions upon the organisational factors examined within this study (POS, affective organisational commitment and innovative behaviour). As well,
while the significance of an employee’s perception of fairness with regards to their colleagues and supervisor has been discussed, it is also important to look at the actual supervisor-subordinate relationships.

### 2.3.7 Examining supervisor-subordinate relationships using a SET lens

As previously mentioned, employees develop social exchange relationships with both the organisation that employs them and supervisors that manage them. The exchange between an employee and their supervisor is commonly referred to as LMX (Landry & Vandenberghe, 2009). As discussed previously, this thesis will use the term LMX to refer to the supervisor-nurse relationship. Literature about LMX proposes that an interpersonal relationship is developed between a supervisor and a subordinate through several exchanges over a period of time and is impacted on by formal organisational structure, policies and procedures (Wayne et al., 1997). As well, it is considered that the relationship between a supervisor and subordinate is constructed from a series of social interactions, where each member participating in the exchange must provide something that the other party considers to be a fair and reasonable exchange. Therefore, the quality of LMX is linked to the amount of information, resources and support exchanged during interactions between supervisors and subordinates.

### 2.3.8 Examining perceived organisational support through a SET lens

SET literature suggests that an employee will only be committed to their supervisor and to the organisation, if they perceive that the organisation and their supervisor are supportive of their actions and behaviour. As such, the supportive role that the supervisor and the organisation undertake can be considered as a benefit that comes from the reciprocal relationship they enter into with their employees (Babin & Boles, 1996). Moreover, going
back to the theory of reciprocity, if employees’ perceive there to be an inequality in their workplace exchanges they are less likely to develop reciprocal workplace social exchange relationships (Gruening, 2001; Wagner, 2007). The same basic premise of reciprocity can be applied to the theory of perceived supervisor and organisational support and to this study; that is, if employees perceive that their supervisor or employing organisation do not support and value their work they will be less inclined to be committed to the organisation and have less of a desire to approach workplace problems innovatively. To add to this argument, if nursing employees’ perceive that their organisation or supervisor does not support them when they try to be innovative then they may not try and be innovative again in the future. In the next section, professional literature will be reviewed and discussed to provide further understanding about the impact of workplace relationships (social exchange factors) upon the affective organisational commitment and innovative behaviour of nursing employees.

2.4 Professionals, professionalism and professions

Literature about professionals in the workplace provides a secondary lens for examining the organisational factors that impact on nursing employees’ (as previously mentioned nursing employees form a professional group referred to as the nursing profession) affective organisational commitment and the impact that affective organisational commitment has on employee innovative behaviour. Using the theory about professionals as a secondary lens means that in this thesis no professional concepts will be examined (e.g. collegiality, autonomy and accountability). However, it is important to include theory about professionals because it provides further understanding about the workplace relationships that may form between professionals in a hospital context. The theory about professionals also provides valuable information for interpreting the results that will be derived from testing the conceptual model.
Professionals are considered to be respected members of the community who can be set apart from other employees, because of their possession and use of expert knowledge. As such, due to this expert knowledge, the profession manages standards of training and entry, which is controlled by professional associations that determine who may gain the knowledge, skills and accreditation into the profession (Evetts & Buchner-Jeziorska, 1997). An earlier definition provided by Friedson (1977) refers to a profession as body that controls a particular occupation; with the possession of knowledge, which forms a position of power and superiority. Professions are considered to be predominantly knowledge-based and acceptance into a profession will, more often than not, follow the attainment of university qualifications, vocational training and a particular level of experience (Brunetto, 2002; Evetts, 2006b).

To gain acceptance as a professional into a particular profession the individual is said to require a certain level of ‘professionalism’. Professionalism can be broken down into three main categories, including the possession and use of technical knowledge and skills, good ethical principles (respectful, reliable, honest and trustworthy), and a high level of altruism (maximising outcomes for others) (Irvine, 1997). However, since the 1990’s public trust in professionals has been decreasing, particularly with regards to health professionals. The concern about the trustworthiness of professionals and, as such public perceptions about professionalism in the medical industry can be attributed to medical and professional scandals laden with negligence, misconduct and malpractice (Evetts, 2006a).

The suggested solution to issues related to professional misconduct, negligence or malpractice is to increase the accountability of professionals within the particular profession in question. Accountability is referred to as being either a virtue or mechanism (Bovens, 2010). Accountability as a virtue is referred to as a set of standards in which behaviour can
be evaluated. On the other hand, accountability as a mechanism refers to institutional relations or arrangements which can be used, for example, to hold an employee accountable. Evetts (2006a) suggests that increasing accountability is in fact part of the problem, because it is a form of control and control is said to at times inhibit the development of trust, autonomy and innovation in the workplace. In contrast, Das and Teng (1998) suggest that controls (policies and regulations) can be used to increase the confidence that a workplace social network member has with other network members. To explain, controls in the workplace can help to minimise the risk of another party acting opportunistically when trusted by another party. To initially build trusting relationships within a social network and to improve the confidence that network members have in one another, it may be important to first have organisational controls in place. However, the question arises as to whether such rules will add to bureaucratic red tape within hospitals.

2.4.1 Professional organisations in a health care context

Hospital design and administration is said to be based on a classical bureaucratic model. Bureaucracy is referred to as an organisational model that promotes a rational organisation, administrative efficiency, and a pure form of legal authority (Friedman, 2001; Lega & DePietro, 2005). In particular, a bureaucratic organisation can be characterised by the expertise of employees (who are expected to continually attain and develop knowledge), the stability of organisational operations and a clearly defined formal organisational hierarchy. Additionally, a bureaucracy adheres to a set of clearly defined rules that govern and control the organisation’s operations. Brewer and Walker (2010) suggest that the rules in bureaucratic organisations can be either good or bad. They also suggest that bad rules are often associated with ‘red tape’. Red tape is referred to as “rules, regulations, and procedures
that remain in force and entail a compliance burden but do not advance the legitimate purposes the rules were intended to serve” (Bozeman, 2000, p. 12).

As such, it is clear that there is a major issue with bureaucratic models in a health care context, mainly because bureaucracies are thought to not be ideal for rapidly changing environments that consist predominantly of professional employees. Also within the context of innovation in the workplace, Cameron and Quinn (1999) suggest that a bureaucratic culture is not ideal for fostering flexibility, creativity or innovation. Moreover, the bureaucratic rules and routines that are associated with red tape and which create delays in organisational processes may reduce individual and organisational performance (Brewer & Walker, 2010). Parker and Bradley (2000) suggest that to overcome such issues, during the past three decades there have been a series of policy changes linked to New Public Management (NPM) and managerial reforms. The public policy changes were designed to maximise cost efficiency, organisational flexibility, adaptability, budget accountability and to improve customer focus and service delivery. The strategy and changes were aimed at meeting the requirements of a rapidly changing environment and were more reflective of a private style of management.

However, Farr-Wharton et al. (2011) suggest that the changes associated with the managerial reforms have increased bureaucracy and red tape within a health care context. The increase in bureaucracy is said to be caused by increased public demand that hospitals and their employees be held more accountable for their actions. The increase in accountability in a health care context is suggested to, amongst other things, have a negative impact on organisational flexibility and the autonomy of nurses. The issue of professional autonomy will be discussed in the following section.
2.4.2 Professional autonomy and collegiality

Early research suggests that one of the key characteristics of being a professional is the freedom that autonomy (having the freedom to make decisions) brings (Freidson, 1977, 1994). According to Kennerley (1993) autonomy amongst professionals is the freedom of being able to use knowledge to make decisions without hierarchical authority. These characteristics of professionals produce the character and ethos of the profession. It also results in professionals making their own decisions rather than being told what to do by others (Boyt, Lusch, & Naylor, 2001). Therefore, professionals are a distinct group of employees who have the expert knowledge to belong to a professional association and culture that gives them autonomy to make decisions in the workplace.

Wade (1999) defines professional nurse autonomy as “belief in the centrality of the client when making responsible discretionary decisions, both independently and interdependently, that reflect advocacy of the client” (P. 311). Furthermore, the development of autonomy in the workplace may reflect an increase in the sharing of decision-making with employees and as such may manifest as increased participation and involvement of employees in the workplace. Additionally, while nurses are suggested to have a moderate level of autonomy, it is considered to be lower than other professions (Bonell, 1999). The lower autonomy can be predominantly attributed to the relationship that nurses have with doctors and, as previously mentioned, the increase in accountability of the entire medical profession. The reduction in autonomy of nurses has been found to reduce job satisfaction and the commitment of nurses (Rafferty, Ball, & Aiken, 2001).

Professionals are also frequently characterised by their level of collegiality, that is, they share a commitment to achieve the goals of the profession. For example, if hospitals in a particular region are high in collegiality they are more likely to share patients with nearby
hospitals when their beds are full, instead of overloading the hospital. As such, the theory of collegiality proposes that professionals will also often share power, authority and, more often than not, values with other professionals in their profession. This forms a unique culture where professionals are loyal to their field and colleagues rather than their employing organisation (Cruess, Cruess, & Johnston, 2000; Wallace, 1995).

Collegiality is considered to be a multi-dimensional concept that can be examined using three dimensions: culture, structure and behaviour (Mangiardi & Pellegrino, 1992). To explain, the cultural dimension of collegiality is considered to be the shared values and beliefs of professionals within a particular profession. On the other hand, the structural dimension refers to the policies, regulations and rules that are used as a framework for making decisions within the profession and about collegiality. Finally, the behavioural dimension indicates that employee behaviour and workplace exchange relationships between professional members are influenced by the cultural and structural dimensions of collegiality. Therefore, the shared values and beliefs of professionals and the policies, regulations and rules are indicators of professional behaviour and workplace social exchange relationships.

Collegiality and the relationships developed within professional groups are heavily relied upon in times of crisis or uncertainty. This is because environments that are rich in collegiality are more likely to produce greater outputs (performance), have open communication and a willingness to share knowledge, information and resources (Mangiardi & Pellegrino, 1992; Petro, 1992). Chaboyer, Najman, and Dunn (2001) concluded that their examination of Australian nurses found moderate levels of collegiality between nurses, which was suggested to reflect a professional level of collegiality. Furthermore, because literature about professionals suggests that a professional may be more committed to their colleagues than their employing organisation, it is imperative that workplace relationships be developed
between employees (Wallace, 1995), and between employees and their direct supervisors (Brunetto et al., 2010). Developing workplace social relationships should provide a foundation from which to increase trust, reciprocity and collegiality (Butt & Retallick, 2002). This is because literature about affective organisational commitment outlines that workplace relationships are essential in developing a committed workforce (Meyer et al., 1990; Meyer et al., 2002; Rhoades et al., 2001). Therefore, according to social exchange literature, organisations that are able to facilitate employee trust, workplace relationships and reciprocity between employees, their direct supervisors and the organisation will have provided employees with a framework of resources that they can access within the workplace.

As already stated, professional organisations are usually knowledge-based practices, which require the generation and use of knowledge to improve organisational performance and gain a competitive advantage (Evetts, 2006a; Pellegrino, 2002). In the context of this study, the development, transfer and use of knowledge will provide nurses with the required access to information, knowledge and resources to solve work-based problems and to improve overall organisational efficiency. Nevertheless, Vaughan and Fitzgerald (1992) suggest (as cited in Bonell, 1999) there are a lack of incentives for nurses to seek out new knowledge and skills. Additionally, they suggest this is because nurses’ autonomy with regards to being able to use this information is limited by the doctor-nurse relationship and the increased accountability associated with national health reforms.

2.4.3 Organisational-professional conflict

Past literature has agreed that a gap has formed between the values and goals of an organisation and that of the professionals that work within the organisation (Kippist & Fitzgerald, 2009). For example, Wallace (1995) suggests that the conflict of interests that
form between a professional and their employing organisation contributes to the lack of commitment a professional has to their organisation, especially when compared to their profession and colleagues. More specifically, within nursing this gap is between the professional values associated with patient care and hospital reforms (New Public Management) that have focused on budgetary controls, accountability and improving organisational efficiency. In addition, this has effectively developed an organisational-professional conflict where nursing employees feel that they cannot provide complete care to their patients (Irvine, 2004). The organisational-professional conflict is also evident in newly qualified nurses, where it was found that there was a gap between what student nurses described as the level of patient care they were taught within their tertiary education and the level of patient care they are able to provide in practice (Maben, Latter, & Clark, 2006). The issue was outlined that there were too many patients compared to nurses (poor nurse to patient ratio) and this means that nurses are often time poor when it comes to providing a holistic approach to patient care.

The poor reports from nurses and the public about patient care, also compounded by recent cases of negligence and malpractice has had a detrimental impact on the publics’ trust of the health profession, including both doctors and nurses. Evetts (2006a) outlines that trust, discretion and competence are required for effective professional practice. However, within Australian health care trust is seemingly being eroded due to the volume of patients that nurses are expected to care for (excluding intensive care units and high dependency units where there is, more often than not, a one to one nurse: patient ratio) (Doiron et al., 2008). The issue is that the increased amount of patients nurses are expected to care for is increasing the severity of organisational-professional conflict within Australian healthcare.
Therefore, to provide the care that nursing employees feel they should be providing their patients, the New South Wales Nurses Association (NSWNA) Australia have been lobbying the Australian government to attain more funding for nurses to improve nurse-to-patient ratios. The negotiations between the NSWNA and the Australian government resulted in no appropriate agreement. As a result, the NSWNA decided to close one in four hospital beds to improve the nurse-to-patient ratios (NSWNA, 2011). The NSWNA suggests that with current budgetary constraints this is the only way to provide a safe patient to nurse ratio of one nurse to four patients, which they have labelled ‘The way to safe patient care campaign’. In addition, the NSWNA has assured the New South Wales (NSW) public that emergency and critical-service beds will not be closed. Moreover, it would seem that this may be a good strategy to reduce the current organisational-professional conflict between nursing employees and hospital management.

2.5 Conclusion

This chapter began with a summary of SET, which informed the researcher about the concepts to be examined. It was outlined from a review of the literature that SET is about examining relationships and as such this study will examine relationship concepts. The relationship concepts include factors, such as LMX, tie strength and the perceptions and behaviour that can result from such relationships. For example, the perceptions of organisational support can be developed as a result of workplace relationships. Moreover, literature about professionals provided a second lens for examining the proposed organisational concepts and their impact upon the affective organisational commitment of nursing employees, and as such the impact that the affective organisational commitment of nursing employees has on the innovative behaviour of nurses.
In conclusion, this study will apply SET and theory about professionals as two theoretical frameworks to examine the role of organisational factors in facilitating and developing appropriate workplace relationships amongst nursing employees. Specifically, this study seeks to examine, amongst other things, the quality of workplace relationships and the impact the relationships have upon two employee work-related outcomes (affective organisational commitment and innovative behaviour). Therefore, this study aims to provide insight into SET and theory about professionals within a nursing context, adding to the current body of knowledge by examining the impact of social exchange factors upon affective organisational commitment and the innovative behaviour of nursing employees. Additionally, this thesis aims to provide insight into gaps within SET and professional literature.

As previously mentioned, this study makes two separate contributions to SET. For example, a review of the extant literature found no studies that have used SET as a framework for examining the innovative behaviour of nursing employees. Hence, this study aims to address the gap about using SET within a nursing context. Also no studies were located that have used all of the variables proposed in this study and to add to this no studies have simultaneously examined the impact of such factors upon innovative behaviour. Therefore, the second contribution to SET is derived from using a unique combination of social exchange factors and to simultaneously examine their impact on innovative behaviour.

As discussed, over the past few decades there have been numerous changes that have occurred within healthcare and public management to improve efficiency and effectiveness. However, there is evidence to suggest that hospitals are still being underpinned by a bureaucratic system, which may be working against the development of an efficient and effective workforce. As such, theory about professionals provides a way of looking at these
issues. As well, this study provides implications for hospital management and contributes to the theory about professionals, particularly within the nursing profession, by providing an examination into one way of fostering the efficiency and effectiveness of nursing employees. The next chapter focuses on reviewing the extant literature about the organisational factors proposed to be examined, as well as affective organisational commitment and innovative behaviour.
3.0 CHAPTER THREE: LITERATURE REVIEW

3.1 Introduction

This chapter reviews the existing literature about the concepts listed in section 1.1.1 (Primary research questions). First, the literature about public and private sector health care in Australia is reviewed. Second, the current published literature is reviewed about the operationalised concepts selected for testing, including organisational justice, LMX, organisational culture, tie strength, POS and their impact upon affective organisational commitment and innovative behaviour. In addition, when discussing each concept; first a definition and the history of the concept will be provided, this will then be followed by an examination of how the concepts are used and this is followed by an outline of how the concept will be used in this thesis.

To provide a framework of information from which to answer the overarching research questions, an in-depth analysis is conducted into affective organisational commitment and the factors affecting the quality of the relationships between workplace social network members of nursing employees. Innovative behaviour is then defined and discussed along with several factors that impact upon the transfer of knowledge and facilitate the development of workplace social relationships. Finally, a model is proposed based on the literature reviewed, which will be used to examine nursing employees’ affective organisational commitment and innovative behaviour.
Figure 3.1: Conceptual Framework

Theoretical Framework

- Social exchange theory
- Professional culture

Predictors

- Perceived organisational support
- Procedural justice
- Interactional justice
- Leader-member exchange
- Innovative organisational culture
- Tie strength

Outcomes

- Affective organisational commitment
- Innovative behaviour
3.2 Innovative behaviour

Seminal work on innovation can be traced back to the work of Schumpeter (Schumpeter, 1971). According to Schumpeter ‘The theory of economic development’ focussed on the interaction between innovative individuals whom he called ‘entrepreneurs’. Hence, the seminal work on innovation is particularly important for the development of research on innovative behaviour. For example, innovation in the workplace is derived from interaction between innovative employees. Therefore, organisations that have the aim to improve efficiency and effectiveness through the development of innovation should develop a framework that can be used to foster the innovative behaviour of employees. Innovative behaviour has been referred to as the process of bringing new problem solving ideas into use, thereby enhancing a product, service or process (Carmeli et al., 2006). Specifically, research has attempted to simplify the complexity of innovative behaviour by dividing it into a three-step process. In an organisational context, the first step is for an employee to identify a work-based problem, the second step is to create new ideas and solutions for the problem, and the last step is to create support for the new ideas and solutions for integration into the firm (Carmeli et al., 2006). Innovation diffusion is the process by which, over a period of time, innovative ideas and outcomes are communicated throughout a social system linked by a network (Ford & Ogilvie, 1996).

It is important to note that while in past literature the terms ‘creativity’ and ‘innovative behaviour’ have at times been used interchangeably, there are differences between the two concepts. In contrast to creativity, innovative behaviour is undertaken with the intention of producing some form of value for the organisation (De Jong & Den Hartog, 2010; Janssen, 2000, 2004). Scott and Bruce (1994a) suggest that there is agreement about
the fact that creativity is associated with the development of new and creative ideas. However, some argue that creativity forms a part of the process of innovative behaviour (De Jong & Den Hartog, 2007; Martins & Treblanche, 2003). More specifically, the concept of creativity is said to be applicable during the problem identification phase or when developing new ideas and solutions to workplace problems. To maintain simplicity and because innovative behaviour and creativity are overlapping theories this study will refer to innovative behaviour as a multi-dimensional theory, but will not specifically examine creativity in relation to the phases of innovative behaviour.

Innovative behaviour is considered a risky process, and so it is thought to often be only practiced by employees that are committed to the organisation. Thompson and Heron (2006) postulate that an employee’s affective organisational commitment to the organisation will impact upon their propensity to share knowledge and be innovative. In particular, innovative behaviour is expected to require the commitment of employees, especially if innovative solutions are to be used to address work-based problems and in the context of this study maximise patient outcomes and safety. However, while there is a vast body of literature that has separately examined affective organisational commitment and innovative behaviour, there is a lack of empirical research that has examined the relationship between affective organisational commitment and innovative behaviour (Jafri, 2010).

Nevertheless, past studies have concluded that affective organisational commitment has a strong association with positive work-related behaviours, such as innovative behaviour (Jafri, 2010; Thompson & Heron, 2006). Moreover, it is expected that people who are affectively committed to the organisation are more likely to be high performers and more likely to develop new and innovative ideas to help the organisation. However, this is yet to be tested within the context of nursing employees and therefore this study will provide,
amongst other things, new knowledge about the impact of affective organisational commitment upon the innovative behaviour of nursing employees.

Subramaniam and Youndt (2005) emphasise that innovation, like many business outcomes, is a function of management process that requires specific tools, rules, discipline, and management and organisational support. Scott and Bruce (1994a; 1994b) suggest for innovative behaviour to be fostered, an organisational climate, which supports innovative behaviour needs to be created in conjunction with appropriate individual attributes, supervision (leadership) and workplace social relationships. However, the ideas generated within the innovation process also need to make a positive change in a product or service for the innovation cycle to be completed and sustainable (Kleysen & Street, 2001). SET suggests that none of this can happen without, amongst other things, organisational support, which employees perceive as being fair and that develops overtime an organisational culture that supports and fosters innovative behaviour (Åmo, 2006; Cropanzano & Mitchell, 2005; Cropanzano, Prehar, & Chen, 2002).

Moreover, while it is expected that a nurse’s perception of the fairness of their interactions in the workplace will impact on their innovative behaviour, it is also expected that a nurse’s perception of fairness with regards to organisational policies and procedures may also influence their innovative behaviour. However, a study conducted by Janssen (2004) examined the impact of distributive and procedural fairness (justice) on the innovative behaviour of nurses from the perspective of their first-line managers. The findings from the study suggest that both distributive and procedural fairness did not predict innovative behaviour. The findings from the study by Janssen may be problematic because the study examined nurses’ perceptions of fairness from the perspective of their first-line manager and not the nurses themselves. Therefore, this study aims to add to the current body of
knowledge by examining the relationship between procedural justice and the innovative behaviour of nursing employees from the perceptive of nursing employees.

Although with this said, while innovative behaviour requires several support mechanisms, it also requires that employees gather and attain new information and knowledge from which to produce innovative solutions to workplace problems. The shared knowledge of employees constitutes an important resource and organisations that can facilitate the transfer and use of knowledge are able to innovate faster and more successfully (Carbonell & Rodriguez-Escudero, 2009; Cavusgil, Calantone, & Zhao, 2003). Moreover, it is suggested that interactional justice is positively related to employees having enough information, knowledge and resources within the workplace (Luo, 2007; Thompson & Heron, 2005). So, if interactional justice is associated with attaining information, knowledge and resources then it should be related to the innovative behaviour of employees. However, a review of the literature did not find any studies that have examined the relationship between interactional justice and the innovative behaviour of employees. Therefore, this study will examine, amongst other things, the impact of interactional justice on the innovative behaviour of nursing employees.

It is widely accepted that supervisors also have the power to influence employees and therefore are able to facilitate or thwart the transfer of knowledge, information, resources and support (Janssen, 2005). Additionally, successful leaders will facilitate and foster the diverse styles of employees so that problems are continuously identified, new ideas and solutions are applied and that support is created for the new ideas and solutions. To provide a holistic approach for examining a nursing employee’s innovative behaviour, this study will use a social exchange lens, focusing on the impact of the interactions between workplace social
network members, as well as the relationship they have with their supervisor and their employing organisation.

De Jong and Den Hartog (2007) suggest that there are several studies that examine the impact of different leadership styles upon the innovative behaviour of employees. However, a review of the literature found there were no studies with the exception of De Jong and Den Hartog (2007) that have examined the relationship between leadership behaviour and the innovative behaviour of employees. Moreover, social exchange theorists suggest that according to LMX theory, the quality of the supervisor-subordinate relationship impacts on several employee outcomes, including job satisfaction, satisfaction with the supervisor, performance, commitment, innovation and turnover intentions (Brunetto et al., 2008; Cropanzano & Mitchell, 2005; Sin, Nahrgang, & Morgeson, 2009; Wayne et al., 1997). Therefore, innovative behaviour should be supported if reciprocal social exchange relationships are developed between a supervisor and a subordinate, which improves an employee’s satisfaction and commitment, as well as their access to information, knowledge, support and resources.

There is support to suggest that LMX may influence the innovative behaviour of employees. For example, a study by Yuan and Woodman (2010) examining four organisations from a range of industries found a direct and indirect relationship between LMX and the innovative behaviour of employees. Additionally, a study by Sanders et al. (2010) also found that LMX was positively related to the innovative behaviour of employees within four Dutch/ German technical organisations. As such, while the relationship between LMX and innovative behaviour has been established, there is a lack of knowledge about LMX and innovative behaviour in a nursing context. Therefore, this study contributes to the
literature about the relationship between LMX and the innovative behaviour of nursing employees.

According to SET, if knowledge is to be effectively transferred throughout a social system, social exchange relationships should be fostered within the organisation and developed upon mutual trust and reciprocity (Cropanzano & Mitchell, 2005; Molm et al., 2007; Tekleab & Chiaburu, 2011). Using the notion of reciprocity, it is expected that if nurses have experienced effective workplace relationships, then they would have experienced support and consequently would be likely to reciprocate that support back to the organisation and their colleagues, which would be evident in high levels of commitment to the organisation. Consequently, it is likely that nurses with high levels of commitment to the organisation will have a greater propensity to be innovative in the workplace. Therefore, by developing an organisational culture rich in quality social exchange relationships, evident by sustained reciprocity that fosters the transfer of knowledge and innovative behaviour of nursing employees, a framework of resources is provided and can be used as a ‘toolbox’ to solve workplace problems innovatively. In the context of nursing, managers that can develop a quality social exchange network, provide nurses with the information and support to improve patient outcomes, safety, and to improve efficiency and effectiveness.

Moreover, Coakes and Smith (2007) argue that innovative behaviour can be supported and facilitated by innovation ‘champions’. These innovation champions have a natural ability to innovate. As well they are experts in their field and are able to help support innovative behaviour within their networks because of their knowledge and reputation in the workplace (Coakes & Smith, 2007). Additionally, it is often thought that innovation champions hold the central role within a workplace network and as such they hold the power to be able to facilitate or thwart the transfer of knowledge throughout the workplace social
network. Therefore, it is possible that the innovative process would stop at that point, unless there were other mechanisms for dispersing the information. Boschma and Terwal (2007) propose that the best mechanism for diffusing new innovations is to facilitate and develop effective workplace relationships, in which employees gain access to information, knowledge, resources and support from a multitude of sources. Therefore, this study seeks to examine, amongst other things, how social exchange factors, organisational culture, and affective organisational commitment impact upon the innovative behaviour of nursing employees.

Although innovative behaviour is widely known to improve organisational effectiveness, the high risk for an employee who takes an innovative approach is often overlooked (Janssen, 2005). This can be attributed to the fact that innovative behaviour deviates from traditional linear behaviour, bringing uncertainty and a risky learning process (Kriegsman, Kley, & Schwering, 2007). As such, past literature suggests that only in a culture where mistakes can be made without fear of retribution will risky innovative behaviour increase to bring order to a chaotic business environment. As previously mentioned, it is therefore important to examine whether an innovative organisational culture has formed that supports and fosters innovative behaviour.

As previously mentioned, there were no studies found, with the exception of Xerri and Brunetto (2011), that have examined the relationship between tie strength and innovative behaviour. However, it is clear from the literature that knowledge and workplace social relationships are key aspects when attempting to foster innovative behaviour (Carbonell & Rodriguez-Escudero, 2009; Carmeli & Spreitzer, 2009; Maqsood et al., 2007; Xerri & Brunetto, 2011). More to the point, previous research findings suggest that weak workplace network ties provide network members with access to new information, and such information
is thought to positively impact on the innovative behaviour of network members (Levin & Cross, 2004). Therefore, because tie strength is considered to be important with regards to innovation and there is a paucity of research examining the relationship between the concepts, it is important to develop an understanding about the impact of the strength of workplace network ties on innovative behaviour.

Brokel and Binder (2007) suggest that the use of face-to-face contact to transfer tacit knowledge is commonly thought to be the source of a number of opportunities, including learning and innovative behaviour. Tacit knowledge cannot be articulated easily and is complex to transfer, because it exists only in people’s minds and bodies and is displayed by their actions (Perounce, 2007). Therefore, without appropriate social exchange relationships employees are less likely to spend the time required to transfer complex tacit knowledge. Furthermore, employees are more likely to engage in innovative behaviour (creating innovative solutions or transferring complex innovative ideas) to the point that they believe they will be listened to and will share in the accumulated benefits (Brokel & Binder, 2007; Clegg, Unsworth, Epitropaki, & Parker, 2002).

There is a gap within the current body of knowledge because very little is known about the antecedents of the innovative behaviour of nursing employees. It is clear from the few studies that have examined nurses’ innovative behaviour that the concept is important for hospital management (see Table 3.1). However, as previously mentioned, the few studies that do examine the innovative behaviour of nursing employees, only examine the impact of empowerment (Åmo, 2006; Knol & van Linge, 2009) and transformational leadership (Reuvers et al., 2008) upon innovative behaviour. As such, this study will add to the current body of literature by providing insight into the impact of social exchange factors upon, amongst other things, nursing employees’ innovative behaviour.
Table 3.1 Reasons for studying the innovative behaviour of nurses

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<tr>
<th>Author</th>
<th>Reason</th>
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<tbody>
<tr>
<td>Sanders et al. (2010)</td>
<td>Developing nursing employees’ innovative behaviour is one way of maximising productivity and effectiveness.</td>
</tr>
<tr>
<td>Åmo (2006)</td>
<td>Very little is known about organisational factors that influence the innovative behaviour of nurses</td>
</tr>
<tr>
<td>Knol and van Linge (2009)</td>
<td>Innovative behaviour of nurses who are close to patients is essential if they are to actively participate in improving organisational efficiency and effectiveness</td>
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3.3 Organisational commitment

Most recent studies refer to organisational commitment as a multi-dimensional construct. The development of the multi-dimensional construct can be traced back to the work of Allen and Meyer (1990), which breaks down organisational commitment into three categories, previously mentioned as, affective, normative and continuance commitment. In addition, the work of Meyer, Allen and colleagues has examined thoroughly the theory about organisational commitment and has tested extensively both affective and normative commitment. However, Wagner (2007) suggests that while there is no shortage of research that has examined the antecedents of employee commitment, there are few studies that have examined commitment in a health care context. Therefore, this study aims to provide insight into the affective organisational commitment of nursing employees.

3.3.1 Affective organisational commitment

As previously mentioned, affective organisational commitment refers to the emotional bond or attachment an employee has with their organisation. In addition, Rhoades et al. (2001) suggest that employees that are affectively committed to their organisation are
considered to usually be dedicated and loyal to the organisation. In addition, a sense of belonging is commonly associated with an employee's emotional attachment to the organisation and such employees have a tendency to be engaged in organisational activities and are willing to work towards the attainment of organisational goals. Furthermore, employees who want to remain with the organisation might also be more inclined than those who need to be with the organisation to maximise their performance (Meyer et al., 1990). In summary, employees who are affectively committed to the organisation are inherently led to be concerned about the organisation's wellbeing and are more inclined to support the organisation's strategic direction.

Past literature suggests that organisations striving to be competitive through efficiency and effectiveness need to motivate and retain their skilled employees. For example, during the past decade family friendly human resource policies and practices have emerged in an attempt to assist employees in balancing their family and work commitments. Meyer and Smith (2000) suggest that the relationship between HRM practices and organisational commitment is mediated by perceptions of organisational support, and indirectly impacted by procedural justice. As a result of the increase in literature examining human resource practices it is well known and accepted that motivating and empowering employees should lead to improved productivity and performance (Liu, Chiu, & Fellows, 2007). As such, it is imperative that human resource practices are designed to support employees and, therefore, contribute to increasing affective organisational commitment.

Additionally, Allen and Meyer (1990) suggest that affective organisational commitment is most likely to impact on the behaviour of employees. Therefore, employees who are affectively committed to the organisation are more likely to align their goals with the organisation and exhibit behaviours associated with company policies and goals (Shum,
Bove, & Auh, 2008). For that reason and in line with the proposed research, an employee who is affectively committed to the organisation is more likely to develop innovative solutions to workplace problems and more inclined to exhibit innovative behaviour. To explain, employees that are more committed to the organisation will be more likely to put in the extra effort required to be innovative (Jafri, 2010). Additionally, without the commitment of employees, aligning organisational goals with employee practices, such as improving innovative behaviour to increase overall performance may become a major organisational challenge. This can be attributed to the fact that employees who are not committed to the organisation may resist the change processes associated with creating knowledge management processes and developing innovative capabilities (Parish, Cadwallader, & Busch, 2008).

As well there being empirical evidence surrounding the relationship between POS and affective organisational commitment, there is support to suggest that LMX is a determinant of an employee’s affective organisational commitment (Maertz, Griffeth, Campbell, & Allen, 2007; Vandenberghe, Bentein, & Stinglhamber, 2004). This can be attributed to the fact that supervisors and managers take on the role of organisational representatives. For example, if an employee perceives that their supervisor is supporting them in their role this should contribute to improving an employee’s emotional attachment to the organisation (Rhoades & Eisenberger, 2002). However, the strength of the relationship between the supervisor and subordinate is dependent upon the degree to which the employee identifies the supervisor’s actions as being in line with the organisations vision and values (Stinglhamber & Vandenberghe, 2003). More specifically, if an employee perceives the actions of their supervisor as being idiosyncratic, the actions will be less likely to be perceived as supportive
and will have a reduced amount of impact upon an employee’s emotional attachment to the organisation (Meyer et al., 2002; Rhoades et al., 2001; Shum et al., 2008).

The theoretical underpinning of LMX suggests that dyadic relationships or social ties are developed over time through a number of social exchanges or interactions between a leader and their subordinates (Bauer & Green, 1996). Lee (2005) suggests that past studies about LMX and organisational commitment suggest that there is a relationship between LMX and organisational commitment, but also suggests that other studies have failed to replicate this relationship. It is suggested that the reason for this disparity is because LMX indirectly influences organisational commitment through the employee’s perception of the organisation. Therefore, empirical research is required to further test the relationship between POS, LMX and organisational commitment. For these reasons, this study will examine the impact of LMX upon both employee perception of organisational support and affective organisational commitment.

To date there has been a plethora of studies that have examined the antecedents of an employee's affective organisational commitment, such antecedents pertaining to SET and this study are listed below in Table 3.2.

Table 3.2 Antecedents of affective organisational commitment to be used in this study

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<tr>
<th>Author</th>
<th>Antecedent</th>
<th>Explanation</th>
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<tr>
<td>Rhoades et al. (2001)</td>
<td>Perceived organisational support</td>
<td>POS is positively related to chronological changes in affective organisational commitment</td>
</tr>
<tr>
<td>Meyer and Smith (2000)</td>
<td>Organisational support and procedural justice</td>
<td>Organisational support and procedural justice correlated significantly with affective organisational commitment</td>
</tr>
<tr>
<td>Ansari et al. (2007);</td>
<td>Procedural justice</td>
<td>Procedural justice predicts</td>
</tr>
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Therefore, based on a review of the existing literature there appears to be a number of organisational factors that are related to affective organisational commitment. As such, this study seeks to add to previous studies by providing insight into, amongst other things, the direct impact of POS and the direct and indirect impact of organisational justice, LMX, organisational culture and tie strength upon the affective organisational commitment of nursing employees. However, the study also seeks to examine an outcome of affective organisational commitment. Therefore, this study will also examine the relationship between affective organisational commitment and innovative behaviour.

**H1:** Affective organisational commitment is positively and significantly correlated with the innovative behaviour of nursing employees.

### 3.1 Perceived organisational support

As previously mentioned, two main types of social exchange have been examined in the past. A social exchange relationship between an employee and the organisation that employs them is referred to as POS. The theory of POS encompasses the fundamental
components of social exchange within the employment relationship. Seminal work on POS can be traced back to Eisenberger et al. (1986) who postulated that POS refers to an employee's collective attitude pertaining to the extent that their employing organisation values their contributions and is concerned with their overall well-being.

Furthermore, it is suggested that employees perceive that the organisation has an optimistic or pessimistic orientation towards them, because of the human characteristics employees associate with organisations (Shanock & Eisenberger, 2006). To explain, the human characteristics associated with organisations can be attributed to the organisation’s power over employees, as well as the policies and procedures that are developed to prescribe behaviour and to control employees. Therefore, if an employee perceives their organisation to be supportive the employee is more likely to respond by being committed to the organisation and their work (Liu, 2009).

More specifically, past literature suggests that an employee’s perception about the organisation’s commitment to themselves contributes to the employee’s commitment to the organisation. Therefore, based on SET employees will become attached to their employing organisation because they perceive there to be a reciprocation between their organisational contributions and the rewards they receive for such contributions (O'Driscoll & Randall, 1999; Wayne et al., 1997). Additionally, in-line with SET and POS literature, an employee’s emotional attachment to an organisation is theorised to be an attitude that is formed through several interactions over a period of time, instead of being the outcome of one particular act or good deed (Maertz et al., 2007; Settoon, Bennett, & Liden, 1996). In summary, SET and POS literature outline that organisational commitment is dependent upon an employee’s perception about the relationship they have with their employing organisation and the support they receive.
Past literature suggests that high levels of POS develop an attitude of obligatory feelings from employees (Liu, 2009; Moideenkutty et al., 2001; Wayne et al., 2002). Such feelings not only lead to employee behaviour associated with commitment to the organisation, but the employee is more likely to feel an obligation to reciprocate the support they have received from the organisation. The reciprocation can take the form of employees engaging in behaviours that are beyond their expected duties and which benefit either the organisation or their work colleagues (Liu, 2009; Podsakoff et al., 2000). Wayne et al. (1997) suggest that POS is positively correlated to meticulousness in being innovative and performing daily tasks at a high level, as well as being committed to the organisation.

POS impacts on an employee’s morale and mood, which as previously mentioned, affects the attitudes and behaviours associated with organisational commitment (Aselage & Eisenberger, 2003; Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001; Vandenberghhe et al., 2004). However, in other studies it has been suggested that POS is also correlated with performance, although such findings are less definitive. More specifically, POS and LMX are suggested to be positively related with creativity and/ or innovative behaviour (Ramus, 2001). Research about innovative behaviour suggests that all innovation has some variation of risk attached and is difficult to facilitate (Kleysen & Street, 2001; Scott & Bruce, 1994a). Therefore, past literature suggests that to support and facilitate the development of innovative behaviour in the workplace, employees must perceive that their supervisor and the organisation are supporting such behaviour (Coakes & Smith, 2007).

Additionally, firms can send signals to their employees about its desire to promote innovative behaviour. Such signals can take the form of organisational policies that facilitate and support the innovative behaviour of employees. For example, innovative behaviour which is supported and developed through the socialisation of workplace social network
members is embedded within the shared values, systems and beliefs of the organisation (Martins & Treblanche, 2003). What this means, is that for innovative behaviour to be encouraged, the organisation must first demonstrate that they value innovative shared values, systems and beliefs (innovative organisational culture) (Dobni, 2008). Therefore, if employees perceive that the organisation values such behaviour and they are committed to the organisation, they are more likely to strive towards being innovative in the workplace.

There have been several studies that have examined POS and the impact it has on several organisational factors and outcomes. However, there have been few studies that have examined the antecedents of POS, with the exception of a small number of studies. For example, Wayne et al. (1997) suggested that POS mediated the relationship between a number of organisational factors (developmental experiences, promotions, organisational tenure related) and affective organisational commitment, as well as performance ratings. In contrast, Stinglhamber et al. (2006) examined the impact of procedural justice on POS and the impact of interactional justice on perceived supervisor support.

More specifically, Stinglhamber and colleagues suggest that the two organisational justice factors (interactional and procedural) impact upon the trust employees have in the organisation that employs them and their supervisor. As such, they hypothesise that POS and perceived supervisor support will mediate the positive effect of procedural and interactional justice on trust in the organisation and for the supervisor. However, if we revert back to Liden and Maslyn’s (1998) dimensions of an LMX relationship, the loyalty dimension takes the place of perceived supervisor support. Therefore, the following hypothesis is made to examine the relationship between POS and the affective organisational commitment of nursing employees:
**H2:** POS is positively and significantly correlated with the affective organisational commitment of nursing employees.

**H3:** POS is positively and significantly correlated with the innovative behaviour of nursing employees.

### 3.2 Supervisor-nurse relationship

The supervisor-nurse (subordinate) relationship is often captured and examined using the LMX concept. In particular, LMX has been used to measure the quality of the workplace social relationship between a subordinate and their immediate supervisor (Bass, 1999). The theory about LMX describes how leaders develop differential working relationships with subordinates (Hackman & Johnson, 2004). It is suggested that LMX relationships develop quickly and remain relatively stable over time (Yukl, 2006). Consistent with SET, the quality of LMX varies depending on the mutuality, perceived value and reciprocal nature of the workplace social relationship (Hung, Ansari, & Aafaqi, 2004). The quality of the LMX relationship affects both leader and member attitudes (and consequently their behaviour) towards one another (Gerstner & Day, 1997; Sparrowe, Liden, Wayne, & Kraimer, 2001).

LMX theory over the past thirty-five years has evolved through a number of stages driven by a number of different concepts (Gerstner & Day, 1997; Graen & Uhl-Bien, 1995; Schriesheim, Castro, & Cogliser, 1999). The first stage; termed Vertical Dyad Linkage Theory (VDLT), focused on leader behaviour and found that exchange relationships between organisational members and their supervisors are initially based on two key elements. The first element outlines the degree of personal compatibility between the leader and the organisational member. The second element outlines the supervisor’s assessment of subordinate competence and dependability (Cashman & Dansereau, 1976). In particular, Cashman and Dansereau (1976) postulated that leaders develop higher quality relationships with some subordinates (the ‘in group’) and lower quality LMX relationships with the
remainder (the ‘out group’). As such, it is posited that the limited number of high quality relationships is attributable to the limited time and exchangeable resources at the disposal of the leader.

The out-group LMX relationships have been associated with economic exchange relationships. For example, Dansereau, Graen, and Haga (1975) suggested that similar to economic exchanges, out-group relationships rely mostly on the employment contract (formal contracts). Thus, when supervisors are interacting with subordinates and providing direction they rely on formal policies and procedures, such as the employment contract and position description. Social exchange contracts would, therefore, be minimal to non-existent in the out-group LMX relationships. Additionally, Cashman and Dansereau (1976) found that low quality LMX relationships are characterised by low trust and are described as transactional interactions based on the formal requirements of the job description.

On the other hand, the in-group LMX relationships have been associated with social exchange relationships and are considered to consist of higher quality relationships, when compared to out-group relationships. However, similar to social exchange relationships, with in-group relationships the supervisor requires more from the subordinates than what is set-out in the formal employment contract (Dansereau et al., 1975). High quality or in-group LMX relationships are characterised by mutual trust, respect and obligations that extend beyond the formal job contract (Graen & Uhl-Bien, 1995). Members in high quality LMX relationships are viewed by their supervisors as ‘trusted lieutenants’ whereas members in low quality LMX relationships are viewed as ‘hired hands’ (Dansereau et al., 1975). The benefits of high quality LMX relationships accrue to leaders, members and the organisation in general. These developments lead to the second stage of LMX theory.
In the second stage of LMX theory development, the differential nature of relationships was confirmed and subordinates in high quality LMX relationships were found to be better performers than those in lower quality relationships (Graen & Uhl-Bien, 1995). As the focus of LMX research shifted from leader behaviour to the relationship itself, the term ‘Leader-Member Exchange’ was coined to differentiate it from the earlier VDLT (Graen, Novak, & Sommerkamp, 1982). The third stage of LMX theory saw the development of a ‘Leadership Making Model (LMM)’ by Graen and Uhl-Bien (1991) in which they argued that leaders are largely responsible for the development of the LMX relationship. This is considered to be due to a supervisor’s power and control over resources, which they can choose to invest in their subordinates; for example, through recognition, delegation and advancement. As a result, leaders and members expand the amount of incremental influence they have over each other and expand the total resources available to the workgroup over a period of time (Graen & Uhl-Bien, 1991).

It is also important to note that LMX theory is embedded in social exchange theory and as such LMX and SET share the concepts of reciprocal influence and exchange. More specifically, LMX theory describes how, over time, a leader develops different quality and types of relationships with each subordinate. These relationships are developed through a process of mutual influence based on social exchanges (Settoon et al., 1996). Mutual influence occurs because leaders are motivated to delegate some tasks and/ or roles to trusted subordinates when they are unable to personally execute all the functions associated with the organisation’s daily operations. Since the leader (supervisor) is accountable for the results of operations, they only choose to delegate to those members whom they deem competent and trustworthy to carry out the delegated task. These delegations initiate a cycle of social exchanges that are fundamentally different from the exchanges with less-trusted subordinates.
or even the exchanges between employees (Dienesch & Liden, 1986). In this regard, LMX theory differs significantly from other relationship theories, which suggest that supervisors tend to treat all subordinates in a similar way.

Wayne, Shore, Bommer and Tetrick (2002) suggest that, as well as the supervisor, the organisation also plays an important role in the development of quality LMX relationships. More specifically, they hypothesise that an employee who perceives that they are well supported by the organisation (POS) are more likely to seek out high quality exchange relationships with their supervisors. Supervisors who perceive that employees are well supported by the organisation are also more likely to engage in high quality LMX relationships with those employees. Wayne and colleagues also suggest that LMX over a period of time influences POS. This can be attributed to the fact that leaders will often over a period of time provide more rewards to those employees whom they share a high quality relationship. As such, the provision of more rewards may over time influence an employee’s perception of organisational support. Therefore, past literature has found that LMX is related to and predicts POS (Wayne et al., 2002; Wayne et al., 1997).

The fourth stage of LMX theory development has seen a shift in focus from the individual dyad to the interconnected network of dyadic relationships within organisations (Hackman & Johnson, 2004). Graen and Uhl-Bien (1995) suggest that a network of high quality relationships can be developed within an organisation resulting in substantially improved organisational performance and employee commitment. As previously mentioned, the theory about a network of high quality relationships can be attributed to network centrality, which suggests that within a workplace network the supervisor is the central network member. The central network member can either support and facilitate or hinder the transfer of information, knowledge and resources. As such, this further highlights the
importance of developing high quality LMX relationships within the workplace, as well as
the importance of the supervisor in developing workplace social networks.

The multitude of factors that can influence LMX and the complexity of the LMX
concept have developed controversy as to the most appropriate method of measuring the
concept (Graen & Uhl-Bien, 1995). Despite growing support for the idea of a multi-
dimensional LMX construct, debate continues over the exact number of LMX dimensions
and their composition (Greguras & Ford, 2006). Notwithstanding this, Liden and Maslyn’s
(1998) four dimensional model of affect, loyalty, contribution and professional respect is the
most widely used model (Greguras & Ford, 2006). However, Graen and Uhl Bien (1995)
suggest that while LMX does have multiple-dimensions, the dimensions are often highly
correlated and thus will likely suffer from issues associated with multicollinearity. Therefore,
while acknowledging that LMX has three dimensions (trust, respect, and obligation); Graen
and Uhl Bien (1995) propose that the three dimensions are best examined using a uni-
dimensional measure.

In summary, Wayne et al. (1997) suggest that high quality LMX relationships impact
positively and significantly on an employee’s and group’s perception of the organisation, the
supervisor and their propensity to undertake activities associated with innovative behaviour.
Therefore, this study seeks to examine whether LMX relationships between nursing
employees and their supervisor impact on POS, affective organisational commitment and
innovative behaviour. As such, the following hypotheses are made:

H4: LMX is positively and significantly correlated with the innovative behaviour of
nursing employees.

H5: LMX is positively and significantly correlated with the POS of nursing employees.

H6: LMX is positively and significantly correlated with the affective organisational
commitment of nursing employees.
3.3 Tie strength

There is convergence that tie strength refers to the strength of the workplace social relationship between two people who form part of a workplace social network. Granovetter (1973) suggested that four determinants could be used to measure the strength of a workplace social network tie, including the length of the relationship, the emotional intensity, the intimacy and the reciprocal services that characterise the tie. For example, if the relationship is constituted by a strong tie, such relationships would be associated with family members, close friends or colleagues that have worked closely for some time. Quite the opposite, relationships constituted by a weak tie would include acquaintances, friends of friends and distant colleagues (Pfeffer & Parra, 2009). In particular, distant colleagues can be characterised by infrequent exchanges and/or workplace proximity.

Therefore, based on Granovetter’s theory, increased contact over a period of time should allow greater opportunity for workplace social relationships to form. Organisations that can facilitate the development of an adequate number of workplace social network ties have developed a foundation from which to transfer important work-based information throughout the organisation. However, there is substantial reservation in the literature about the particular factors that form a weak or strong tie, with this said the majority of studies examining tie strength measure relationship intensity to examine the strength of the tie (Bstieler & Hemmert, 2008). Moreover, the different strengths of workplace ties are thought to be beneficial for particular organisational goals.

For example, it is accepted that weak ties are beneficial for fostering creativity in the workplace, because they provide new information to an otherwise redundant network. Although weak ties provide new information to aid creativity, strong ties are still vital,
because they provide relationships that are beneficial for problem-solving and transferring knowledge that is complex. As such, Granovetter (1973) argued that effective networks will consist of both strong and weak ties. However, there is still some disagreement about the value of strong ties in the workplace when compared to weak ties (Hansen, 1999; Levin & Cross, 2004). The criticism is that considering innovative behaviour, strong ties only provide redundant information to its members. More specifically, because strong ties tend to be clustered and from the same group, they are more likely to all possess similar information, knowledge and resources. As a result, this infers that strong ties are not appropriate for dispersing new knowledge throughout the workplace social network.

Levin and Cross (2004) suggest that while strong ties do not provide new information, it is presumable that dyads with strong ties will expend greater effort to ensure the knowledge seeker sufficiently understands the knowledge being transferred. Therefore, it is important to note that strong ties are considered to be more appropriate for transferring complex knowledge, because strong ties are more likely to have developed higher levels of trust than weak ties (Krackhardt, 1992). As such, strong ties are considered to be beneficial for transferring tacit knowledge. Moreover, Krackhardt (1992) suggests that strong ties are more easily accessible and have a greater motivation to provide support. Therefore, it is argued that groups of strong ties that are bridged throughout the organisation by weak ties provide an invaluable problem-solving network; such networks are especially important in organisations that operate within a rapidly changing and uncertain environment.

To add to the argument, Levin and Cross (2004) postulated that if strong ties require a large amount of time and investment to maintain, then it is important that weak ties are developed to connect clusters of employees. Additionally, Burt (1992) suggests if there are appropriate numbers of weak ties to bridge the gap between clusters of strong ties, then the
‘structural holes’ or knowledge gaps within the workplace network will be filled. In particular, by connecting clusters of strong ties, employees have access to new resources, support and knowledge that otherwise they would have not been able to access. As previously mentioned, innovative behaviour involves the identification of a problem and the development and implementation of a solution to the problem (Carmeli et al., 2006). Therefore, to support innovative behaviour in the workplace weak ties are required to provide new knowledge to support problem identification and the development of new ideas, and strong ties are required to disseminate complex knowledge and develop support for the solutions identified.

It is well known that some relationships are easier to develop than others and they require effort to maintain. In response, knowledge management systems have become a popular tool in which to capture and transfer knowledge. However, Levin and Cross (2004) suggest that even when considering the popularity of the internet and knowledge management systems, employees still prefer to gather information and knowledge from other employees when solving work-based problems. As such, organisations that are able to connect employees and the information and knowledge they possess, whether face-to-face or electronically, have effectively developed a platform from which to foster innovative behaviour in the workplace. Morrison (2004) suggests that formal organisational networks; such as, the supervisor-subordinate and mentoring relationships can be used as a foundation to develop informal workplace social networks. More specifically, the formal structure allows opportunity for exchange and provides proximity between certain groups and employees within an organisation.

On the other hand, informal networks are imperative for organisations seeking to transfer knowledge, resources and support throughout the organisation. According to SET,
organisations seeking to develop informal social networks need to provide a formal structure that provides the opportunity for several exchanges. Reverting back to the theory of SET, over a period of time and several exchanges, relationships develop into mutual trusting, loyal and reciprocal commitments (Cole et al., 2007). In summary, formal organisational relationships provide the proximity and the opportunity for interaction, which assists in facilitating informal social networks in the workplace.

Social network theorists postulate that workplace social relationships often enhance access to valued resources (Sparrowe et al., 2001), which has led to the suggestion that social network ties support collaborative thinking and the sharing of knowledge (Dooley & O’Sullivan, 2007; Fliaster & Spiess, 2008). In addition, the collaboration between network members, supervisors and the organisation is imperative to the successful development of a workplace social network. The development of an appropriate social network is important because the interconnectedness provides a vehicle to transfer information and facilitates the development of relationships that assist in building a committed and innovative workforce.

Moreover, there is no shortage of research that highlights the importance of workplace network ties and the strength of ties for transferring information, knowledge and resources in the workplace. However, there is a lack of empirical research that has examined the relationship between tie strength and the innovative behaviour of employees. A study by Xerri and Brunetto (2011) found that within an engineering context that tie strength was positively and significantly correlated with the innovative behaviour of engineering employees. This study aims to add to the current body of literature by examining the overall strength of ties and the impact this has on employee perceptions and behaviour within a nursing context. Therefore, the following hypotheses are made in relation to tie strength, affective organisational commitment and POS:
H7: Tie strength is positively and significantly correlated with the innovative behaviour of nursing employees.

H8: Tie strength is positively and significantly correlated with the POS of nursing employees.

H9: Tie strength is positively and significantly correlated with the affective organisational commitment of nursing employees.

3.4 Organisational justice

The ideas of equity, fairness or justice are by no means novel, as mentioned; equity theory was first introduced by Adams (1965; 1963). However, Colquitt (2001) outlines that the notion of justice in social sciences has been considered as increasingly important in the past few decades. The interest in fairness began with the advent of distributive justice and its impact on decision outcomes (Adams, 1965; Homans, 1961). Janssen (2004) argues that distributive justice in the exchange relationship refers to employees’ perceptions of the fairness between their input in the workplace and the rewards they receive. Following the introduction of distributive justice, research began to focus on the perception of fairness in relation to the procedures that end with decision outcomes. Such a process is known as procedural justice and is referred to as the perception of fairness regarding organisational policies and procedures (Colquitt, 2001). Bies and Moag (1986) later added a third dimension that they termed interactional justice, which is referred to as the perception of fairness regarding interpersonal relationships that occur as organisational procedures are enacted. As a way of bringing together and explaining the three justice dimensions in an organisational context, the term organisational justice was founded (Greenberg, 1987). Greenberg (1993) later developed interpersonal and informational justice as a means of explaining the interpersonal part of distributive and procedural justice respectively. However, in this thesis interpersonal and informational justice will not be considered because
the aim is not to explain the interpersonal parts of distributive or procedural justice, but to determine the influence that organisational justice has on workplace social relationships.

Past literature about SET suggests that organisations are based around and operate by entering into transactions with other parties. For instance, one transaction is the workplace social relationship between a supervisor and their subordinate (Colquitt, 2001). Another example is the interaction between employees within an organisation. An example of a transaction between the organisation and the employee would be the work that an employee performs for monetary-gain. Additionally, employees form their own perceptions about the fairness of the organisational and social transactions or exchanges. Past literature suggests that perceptions of fairness affect an employee’s attitude and behaviour and in-turn can impact upon work behaviours, workplace social relationships and an employee's commitment to the organisation (Konovsky & Pugh, 1994; Niehoff & Moorman, 1993).

This study will apply both procedural and interactional justice; distributive justice will not be used and the reason will now be explained. Perceived organisational support is a better fitting concept because it examines an employee’s perception of support and well-being. Where distributive justice is based on the notion of equity, POS is better suited to a study that seeks to examine if employees have the support required to be innovative in the workplace. Considering that innovative behaviour requires, amongst other things, organisational support and such support could be considered as a reward, there would be significant overlap in using distributive justice and POS. On another point, Cropanzano and Ambrose (2001) propose that procedural and distributive justice are more similar than most researchers think because employee perceptions regarding organisational procedures are based on particular outcomes, which may be highly correlated (to the point of multicollinearity) to the employee’s perception of fairness regarding inputs and rewards. The
high correlations in some studies have meant that distributive and procedural justice have often been combined into a single scale (Colquitt, 2001). With this in mind, the decision not to use distributive justice is based on the similarities with procedural justice, the suitability of POS in a study examining social relationships, and the fact that this thesis is focused on the outcomes of social relationships in the workplace.

As previously mentioned, procedural justice is associated with an employee's perception of the organisation's formalised procedures and policies and can provide insight into an employee's perception of the organisation. More specifically, procedural justice is referred to as a micro-level factor, which is analysed at the individual level of analysis. Procedural justice is developed from an employee's perception of organisational policies and procedures; therefore, the organisation is suggested to be most affected by procedural justice.

On the other hand, the supervisor/manager or other colleagues are most likely to be affected by interactional justice. Interactional justice is constituted by an employee's perception of the social exchanges in the workplace. As such, interactional justice refers to the quality of social exchanges in the workplace and is thought to impact upon, amongst other things, an employee's perception of procedural justice (Luo, 2007). Therefore, in the context of nurses it is important to examine whether there are high levels of procedural justice at the individual level, as well as examining an employee’s perception of interactional justice (Masterson, Lewis, Goldman, & Taylor, 2000).

It is suggested that employees possess two main levels of exchange partners within an organisation. They include the exchange that an employee has with the formal procedures and policies at an organisational level, as well as, the exchanges with colleagues and supervisors at an individual level (Niehoff & Moorman, 1993; Stinglhamber et al., 2006). Therefore, because procedural justice is associated with an employee's perception of
organisational policies and procedures, some insight may be gained into an employee's perception of organisational support. Interactional justice, on the other hand, is related with social exchanges; therefore, interactional justice most likely provides insight into theories such as LMX (Ansari et al., 2007). In particular, formal policies and procedures are, more often than not, constructed by senior management. If employees perceive the policies and procedures to be fair they reciprocate with positive work behaviours, which are aligned with the organisation’s mission and goals. As well, procedural and interactional justices are strongly correlated with an employee's commitment to the organisation. Therefore, procedural and interactional justice should be appropriate for examining nursing employees’ perceptions and behaviour.

Moreover, the majority of past research has examined procedural and interactional justice as relating factors; implying that interactional justice is significantly correlated to procedural justice (Konovsky & Pugh, 1994; Niehoff & Moorman, 1993). However, more recent studies suggest that interactional and procedural justices are two constructs that can be very much separate from one another (Luo, 2007). As a result, there is a belief that employees will seek out the source of an interactional in-justice to the colleague or supervisor who carried out the interpersonal actions, and as previously mentioned the perception of procedural justice is often attributed to the organisation (Erdogan, 2006). This implies that procedural and interactional justice can operate separately from one another, because it is more likely that procedural justice will impact upon an employee's perception of organisational support, while interactional justice influences the supervisor and subordinate relationship.

To add to the argument, Stinglhamber et al. (2006) suggest that POS mediates the relationship between procedural justice and an employee's emotional attachment to the
organisation. As previously mentioned, POS refers to an employee's collective attitude pertaining to the extent which their employing organisation values their contributions and is concerned with their overall well-being (Eisenberger et al., 1986). This further supports the conception that procedural justice is often related to organisational level factors and that interactional justice is often related to individual level factors (Schofield, Page, Lyle, & Walker, 2006). In addition, it is argued that interactional justice may indicate that the supervisor supports their subordinates, which according to SET should contribute to the development of a high-quality supervisor-subordinate relationship. Similarly, procedural justice may indicate that an organisation supports their employees, which will improve the relationship an employee has with the organisation (POS) and increase their commitment to organisational goals, policies and procedures. For the purpose of this study and to examine the role of POS in the relationship between procedural and interactional justice; and affective organisational commitment, as well as the relationship between interactional justice and LMX, the following hypotheses are made:

**H10**: Procedural justice is positively and significantly correlated with the innovative behaviour of nursing employees.

**H11**: Interactional justice is positively and significantly correlated with the innovative behaviour of nursing employees.

**H12**: Procedural justice is positively and significantly correlated with the POS of nursing employees.

**H13**: Procedural justice is positively and significantly correlated with the affective organisational commitment of nursing employees.

**H14**: Interactional justice is positively and significantly correlated with the affective organisational commitment of nursing employees.

**H15**: Interactional justice is positively and significantly correlated with the POS of nursing employees.

**H16**: Interactional justice is positively and significantly correlated with the LMX of nursing employees.
3.5 Innovative organisational culture

There has been a wealth of organisational culture literature written in the past few decades, although there is still no real agreement to as much as even a definition of organisational culture. With this said, there are some definitions and studies that are more widely followed and accepted than others (see Table 3.3). As such, an organisation’s culture is said to be embedded in the way people within the organisation act and what they expect from colleagues and how they determine the meaning behind the actions of others. In summary, the development of organisational culture literature has reinforced and agreed, at least, on one factor, that core values and assumptions are at the centre of organisational systems, structures and behaviour (Dension, 1996).

Table 3.3 Definitions of organisational culture

<table>
<thead>
<tr>
<th>Author</th>
<th>Definition</th>
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<tr>
<td>Silverzweig and Allen (1976)</td>
<td>Seminal work on organisational culture, which postulated that organisational culture can be referred to as a set of behaviours that are common to a particular group or organisation.</td>
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<tr>
<td>Deal and Kennedy (1982)</td>
<td>Added to the broad understanding of organisational culture suggesting that it could be considered as the way things get done in an organisation.</td>
</tr>
<tr>
<td>Schein (1990)</td>
<td>A well-known definition, that is cited most frequently suggests that an organisation’s culture forms the shared values, beliefs and practices of people within the organisation.</td>
</tr>
<tr>
<td>McDermott and O’Dell (2001)</td>
<td>An organisation’s culture is intangible and is reflected in the tangible aspects of the organisation, such as its mission and values statements.</td>
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However, it is important to note that because of the complexity of organisational culture, employees often behave in a manner that is inconsistent with the organisation’s mission and value statements, but aligned with cultural norms, values, beliefs and assumptions. Additionally, the literature suggests that in fact the notion of organisational
culture has several dimensions and usually will encompass several subcultures (Al-Alwai, Al-Marzooqi, & Mohammed, 2007; Alavi, Kayworth, & Leidner, 2006). More specifically, this means even in organisations that have a culture that supports knowledge sharing, innovative behaviour and the development of workplace social exchange networks, small sectors can be found that are far less supportive (McDermott & O’Dell, 2001). In summary, if an organisation’s mission was to foster innovative work behaviour, literature about organisational culture suggests that cultural norms and values should be aligned to support the attainment of such organisational goals.

Schein (1985) developed a three tier-model of culture to provide a better understanding of the organisational culture phenomena. Schein outlined that culture can be viewed in three distinct levels: observable artefacts and behaviour, norms and values, and basic beliefs and assumptions.

Culture can now be defined as (a) a pattern of basic assumptions, (b) invented, discovered, or developed by a given group, (c) as it learns to cope with its problems of external adaption and internal integration, (d) that has worked well enough to be considered valid and, therefore (e) is to be taught to new members as the (f) correct way to perceive, think, and feel in relation to those problems (Schein, 1990, p. 111).

Therefore, because this study will examine organisational practices and nursing employees’ perceptions of organisational practices, the first level of organisational culture as prescribed by Schein (basic underlying beliefs and assumptions) will be examined.

The sustained popularity of organisational culture literature has been driven by recommendations and theories suggesting that culturally based strategies enable an organisation’s culture to produce positive economic outcomes. For example, such economic
outcomes may include increased employee commitment, innovative behaviour, greater efficiency, improved performance, and greater information and resources for decision making (Lemon & Sahota, 2004). However, in reality the effective development and implementation of cultural interventions and strategies have manifested as a major organisational challenge (Langan-Fox & Tan, 1997). The unsuccessful reputations of cultural intervention and strategy have been associated with ambiguous strategies, poor communication and ineffective leadership. Therefore, due to the inability of most organisations to successfully align cultural norms and values with organisational goals and practices, it is important for this study to develop an understanding about the role that an organisation’s culture undertakes in developing committed and innovative employees. As such, this study seeks to examine through the role of an organisation's culture in shaping and supporting the commitment and innovative behaviour of nursing employees.

Additionally, it is suggested that the essential factors of organisational culture including the shared values, beliefs and behaviour of employees within an organisation influences innovative behaviour in two different ways (Martins & Treblanche, 2003). The first approach in which organisational culture impacts upon innovative behaviour is through the socialisation process. The socialisation process refers to the method by which individuals within an organisation learn what behaviour is acceptable and how they should conduct themselves within the organisation. Therefore, the socialisation process provides employees with shared norms and assumptions about gathering information, resources and support. As such, the socialisation process is imperative if new employees are to quickly become familiar with and fit into the organisation’s culture.

Therefore, if management can align the organisation’s culture with goals of the organisation and employees are aware of how they should act, then employees are more
likely to exhibit behaviour in line with organisational goals, in order to be rewarded for such behaviour (Dobni, 2008). To add to this argument, employees that fit into the organisational culture and are able to gather the information and resources they require from the socialisation process to do their jobs appropriately are more likely to perceive the organisation as being supportive. Additionally, when employees learn what behaviour is acceptable they become aware of what the organisation requires from them. More specifically, if an employee is part of an organisation with an innovative organisational culture, they will learn that innovative behaviour is desired and supported by the organisation and that such behaviour is linked to a reward system.

The rewards associated with organisational culture should impact on, amongst other things, an employee’s perception of organisational support. However, there is no research that has examined the relationship between organisational culture and POS. Although, it would be expected that as long as an employee fits into the organisational culture and abides by the rules and norms of exchange, they would be more likely able to access the resources they require in completing their daily tasks to a high standard (Al-Alwai et al., 2007; McDermott & O'Dell, 2001). In addition, such employees are more likely to be eligible for rewards, because they are exhibiting behaviour promoted by the organisation; and as such are more likely to perceive the organisation as being supportive.

The second approach in which organisational culture impacts upon innovative behaviour is through the basic values, assumptions and beliefs that are embedded in the organisation (Ahmed, 1998). In addition, such values and assumptions are made visible through established forms of behaviour and activity that are re-enforced by policies (mission and values), procedures, and organisational structure and management practices. Furthermore, the values and beliefs which form organisational culture are also suggested to
impact on the commitment of employees. As a result, it is expected that organisational structure, policies, procedures and management practices can provide support and facilitate an innovative and committed workforce or it can prevent the development of a committed and innovative workforce.

Moreover, to foster innovative behaviour in the workplace requires an encouraging and supportive organisational culture. A supportive culture should provide a reciprocation of information, benefits and rewards for employees that use their workplace social network ties to gain important information, support and resources. Additionally, as social networks essentially involve a dyadic relationship within an organisation, effective collaboration and trust is vital to the success of the workplace social network (Das & Teng, 1998). Therefore, an organisational culture that is aligned with organisational goals can impact positively on organisational functions. However, a poor organisational culture can have the opposite effect and severely reduce the effectiveness of the organisation (Martins & Treblanche, 2003).

Organisational culture is a broad concept that often incorporates other concepts within its measurement. For example, Glaser, Zammonu and Hacker (1987) proposed six preliminary factors, which were considered the crux of organisational culture, including teamwork-conflict, climate-morale, information flow, involvement, supervision and meetings. This thesis will focus on examining whether organisational culture is supportive of innovative behaviour in the workplace. Specifically, this study will use an innovation sub-scale from a larger organisational culture instrument (O'Reilly, Chatman, & Caldwell, 1991) to measure the risk-taking and support required to develop a culture that fosters employee commitment, innovative behaviour and their perception of organisational support. Due to the fact that this thesis focuses on innovation in organisational culture, the term innovative organisational culture will be used. The following hypotheses
are proposed to examine the relationship between an innovative organisational culture, POS and affective organisational commitment:

**H17:** Innovative organisational culture is positively and significantly correlated with the innovative behaviour of nursing employees.

**H18:** Innovative organisational culture is positively and significantly correlated with the POS of nursing employees.

**H19:** Innovative organisational culture is positively and significantly correlated with the affective organisational commitment of nursing employees.

### 3.6 Public and private sector health care in Australia

There is some research that has statistically examined whether there are significant differences between the perceptions and behaviour of nursing employees working within the public or private sector. To provide an examination into Australian healthcare, this study will examine past and current studies conducted in an Australian context. Steane (1997) suggests that while there may be differences between public and private sectors, these differences are now far more subtle. A review of the literature found a mixture of results from the studies that have examined the differences between public and private sector nurses. For example, some literature found no statistically significant differences (Hegney, Eley, Plank, Buikstra, & Parker, 2006; Hegney, Plank, & Parker, 2003; Rodwell & Teo, 2004), some found significant differences (Brunetto et al., 2010; Zeffane, 1994), and one study found a mixture of significant and non-significant differences (Rodwell & Teo, 2008). These studies are all different in nature, some examined factors influencing nurses at the individual level and some examined the health services at an organisational level. However different the studies may be, the findings demonstrate that in some cases there are significant differences, but it would seem that the empirical research supports Steane’s argument that the differences between public and private sectors has been reduced.
The reduction in differences between public and private sector health care is referred to as a ‘blurring’ and is thought to be caused by a number of factors. The blurring between public and private sector health care in Australia is said to have increased with the introduction of public sector reforms and public-private partnerships (Bovaird, 2004; Edwards, 2002; English & Skellern, 2005; Grimsey & Lewis, 2007; Leitch & Motion, 2003; Pongsiri, 2002; Wettenhall, 2003). The reforms and the forming of new partnerships specifically reflected that the public sector is becoming results driven; more focused on performance and performance motivators. However, the reforms have also introduced outsourcing of some public sector functions (Hebson, Grimshaw, & Marchington, 2003). Furthermore, public and private organisations have also begun to forge partnerships through: leasing and franchising, joint-ventures and joint-production/services (Chung, 2003). To add to the blurring within Australia, private hospital care may even be provided within a public hospital, this way a patient who chooses private care is able to choose their doctor as well as be provided with greater amenities (Tuohy, Flood, & Stabile, 2004). Therefore, the differences between public and private sector health care and health care management have been blurred, although this is not to say they are now exactly the same, but the differences have been reduced.

The blurred line between public and private health care provides support for combining the examination of public and private sector nurses. To explain, this study proposes that the blurring between public and private sector health care within Australia is continuing to increase and this has further reduced the differences between public and private health care in Australia. Therefore, because of the blurred line between public and private health care it is proposed that there will be no statistically significant differences with regards to the organisational factors and work-related outcomes proposed in the conceptual model.
(Figure 3.1). In particular, this study provides insight into Australian nursing employees, which adds new knowledge for public and private health care in Australia.

**H20:** *There will be no significant differences between public-private sector nurses’ organisational factors (procedural and interactional justice, organisational culture, tie strength, LMX and POS) and work-related outcomes (affective organisational commitment and innovative behaviour).*

### 3.7 Conclusion

This chapter has examined several organisational factors in relation to the extant literature. Factors related to social network exchange were examined, including organisational justice, LMX, tie strength, organisational culture, POS and their impact upon affective organisational commitment and innovative behaviour. From a review of the literature it is hypothesised that employees whom are committed to the organisation are more likely to exhibit behaviour that is supported by the organisation. Thus, by creating a culture that supports innovative behaviour and which facilitates the commitment of employees, knowledge will be able to flow freely throughout the entire network and employees will have a platform from which to solve workplace problems innovatively. The development of an innovative environment gives innovation champions and members who hold a central position in the workplace network a better environment in which to facilitate the development of knowledge and innovative behaviour. A review of the literature revealed that several methods should be utilised to develop appropriate workplace social relationships to support and facilitate a committed workforce that has a propensity and the resources to be innovative.

In conclusion, an examination of the literature surrounding workplace social relationships, affective organisational commitment, and innovative behaviour provides an
understanding about the processes of social exchange networks. While the variables used to construct the conceptual framework (figure 3.1) are a product of SET, without understanding professionals, it is difficult to understand organisational culture within the context of nursing employees. Hence, literature about professionals is used as a secondary theoretical framework. Each organisational factor examined within this chapter is important when attempting to understand how and why nursing employees transfer knowledge and innovative capability to other nurses or why they do not. In addition, each organisational factor is important when examining the organisational factors that impact upon the commitment of nurses and the impact this commitment has upon nursing employees’ innovative behaviour.

Particularly such research about fostering the innovative behaviour of nursing employees is important because there are a number of factors encouraging hospitals to improve the efficiency and effectiveness of employees. However, a review of the extant literature revealed a paucity of research that has examined factors relating to improving innovative behaviour in the workplace. Considering that innovative behaviour is one way of improving efficiency and effectiveness of employees, such research is vital to hospital development. Therefore, amongst other contributions, this thesis provides insight about fostering the innovative behaviour of nursing employees. The next section will discuss the research paradigm used within this study and the design of the research.
4.0 CHAPTER FOUR: RESEARCH METHODOLOGY PART ONE – RESEARCH PARADIGMS AND DESIGN

4.1 Introduction

This chapter outlines the methodology utilised to examine the impact of the proposed organisational factors on the affective organisational commitment and innovative behaviour of nursing employees (see figure 3.1). To provide a clear understanding about the motivations for using a quantitative study within a post-positivist paradigm, a number of research paradigms and their underlying assumptions are discussed and compared. This is followed by a discussion about three widely used research methods (quantitative, qualitative and mixed methods). The information about the different research methods is then used to explain and justify the research method and design that has been adopted to conduct this study. In addition, the importance of designing a study that is reliable and valid is discussed. This is followed by evidence based information about how this study was designed to meet the requirements of validity and reliability.

4.2 Research paradigms

There is a continuing debate about the applicability of different philosophical approaches to the study of social phenomena (Mingers, 2003). This debate is important because the philosophical frame of reference adopted by the researcher affects the types of knowledge claims that can be made about a piece of research. In particular, research paradigms (epistemological frameworks) are the way a researcher views the world that subsequently shapes the way they gather and analyse data (Saunders, Lewis, & Thornhill, 2000). Neuman (2011) defines a paradigm as “a general organising framework … that includes basic assumptions, key issues, models of quality research, and methods of seeking answers” (p. 81). Babbie (2007) suggests that the choice of research paradigm is important
because it informs and influences the observations made by the researcher, the hypotheses or propositions the researcher seeks to examine, and the conclusions drawn from the examination. With this in mind a number of paradigms (frameworks) will be discussed to provide an argument for the paradigm selected in this study.

There are many epistemological frameworks of which three will be discussed: interpretivism, pragmatism, and post-positivism (see appendix one for discussion) (Guba & Lincoln, 1994). As well, post-positivism will also be discussed in relation to positivism. Each of the three frameworks to be discussed are associated with their own different traditions in social theory and each with their own diverse research techniques (Neuman, 2011). The first paradigm to be discussed will be interpretive social science (interpretivism). The purpose of interpretative social science is to understand the context of social meaning. The second paradigm that will be discussed is pragmatism; the purpose of pragmatism is to understand the social world (Neuman, 2011). The third paradigm that will be discussed is post-positivism, which is widely used and broadly known as the approach of natural sciences. The researcher in this paradigm provides an observation of reality through the researchers own lens, making interpretations about the reality of the data that has been gathered (Saunders et al., 2000). Paradigms can be examined in relation to a set of assumptions. These assumptions refer to the techniques used by researchers to develop an understanding of reality and the paradigms they have followed (Guba & Lincoln, 1994).

In particular, the interpretivist, pragmatist and post-positivist paradigms will be discussed in terms of their ontological, epistemological, axiological and methodological assumptions. Ontology relates to the nature of reality and the nature of social beings (Tashakkori & Teddlie, 1998). From a social research perspective, ontology deals with the question: ‘What is it possible for a researcher to know?’ (Creswell, Plano Clark, Gutmann, &
Hanson, 2003). The answer to this question depends on the researcher’s understanding of ‘reality’. Specifically, whether there is a single, objective reality that is external to the individual or whether there are multiple, socially constructed realities (Guba & Lincoln, 1994). Epistemology deals with how knowledge is created and poses the question “Can we be certain that we know something if we have not experienced it?” (Creswell, 2003, p. 5). The researcher’s epistemological assumptions determine whether an objective or subjective approach is chosen (Creswell, 2009). On the other hand, axiology deals with the study of human values, or more specifically how our internal value systems affect our perceptions (Creswell, 2009). Axiological assumptions include whether knowledge can (or should) be value or bias free, and whether these values affect the validity of our knowledge claims. Finally, methodological assumptions relate to the researcher’s choice of techniques to discover reality based on their selected paradigm (Lincoln & Guba, 2000).

The four assumptions will be discussed in further detail within each of the three epistemological framework discussions below and have also been summarised in table 4.1. To clarify, both positivism and post-positivism are summarised within the table to clearly identify the similarities and differences between the two paradigms.

Table 4.1 Assumptions of interpretivism, positivism, post-positivism and pragmatism

<table>
<thead>
<tr>
<th>Item</th>
<th>Interpretivism</th>
<th>Positivism</th>
<th>Post-Positivism</th>
<th>Pragmatism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontology</td>
<td>Multiple, subjective, socially constructed realities.</td>
<td>Naïve realism, reality is apprehensible.</td>
<td>Critical realism – ‘real’ reality but only imperfectly and probalistically apprehensible.</td>
<td>Accept external reality; choose explanations that best produce desired outcomes.</td>
</tr>
<tr>
<td>Epistemology</td>
<td>‘Knowledge’ is based on the perception of</td>
<td>Dualist; researcher and the one being</td>
<td>Modified dualist/objectivist.</td>
<td>Both subjective and objective</td>
</tr>
</tbody>
</table>

98 | P a g e
the individual; researched are independent. viewpoints can be used in a single study.

<table>
<thead>
<tr>
<th>Axiology</th>
<th>Strives to make sense of the meaning people find in their own lives and situations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inquiry</td>
<td>Inquires value free and unbiased. Values can influence the research, although they can be controlled. Values are imperative when interpreting results.</td>
</tr>
<tr>
<td>Methodology</td>
<td>Inductive; predominantly qualitative. Deductive process; predominantly quantitative. Modified deductive process; may include qualitative methods in addition to quantitative methods. ‘Abduction’: both inductive and deductive; quantitative and qualitative</td>
</tr>
</tbody>
</table>

Source: (Creswell, 2009; Guba & Lincoln, 2005; Guba & Lincoln, 1994; Tashakkori & Teddlie, 1998).

### 4.3 Justification for paradigm selection

To further discuss the paradigm selection, it is important to note that other factors derived from the literature were taken into consideration, which was in addition to the factors already discussed that directly related to the paradigm. In particular, there is a large body of literature about SET (e.g. Cropanzano & Mitchell, 2005; De Clercq, Dimov, & Thongpapanl, 2009; Julian & Fiona, 2005; Lin & Huang, 2010; Neves & Caetano, 2006) which lends itself to deductive theory testing rather than inductive theory building (Creswell, 2009). In addition, a number of meta-analyses of the literature found that post-positivist approaches are the predominate method of inquiry used in this field (Graen & Uhl-Bien, 1995; Hackett & Lapierre, 2004; LePine, Erez, & Johnson, 2002; Podsakoff et al., 2000). A thorough review of the literature revealed few interpretivist or pragmatist studies about the research topic.
Finally, Creswell (2009) supports research by Morgan (2007) and Sousa et al. (2007) suggesting that certain problems call for specific approaches. More specifically, where the problem concerns the identification of factors that influence an outcome a quantitative approach is prescribed (Creswell, 2009).

4.4 Research Design

Research design is referred to as the framework of the strategy that guides the collection and analysis of data to answer specific research questions. The role of the research design is to provide an outline to guide the collecting, analysing and interpretation of data (Creswell, 2009). Current research concludes that the overall research design is a guideline or plan that outlines the procedures that should be used when undertaking a research project (Scandura & Williams, 2000; Sobh & Perry, 2005; Teddlie & Tashakkori, 2006). Additionally, it is well contended that the purpose of research design is to validate how researchers can approach their research problems.

Moreover, it is suggested that the research design comprises two decisions that must be made: the type of research that will be undertaken, and how and where the information will be sourced (Tashakkori & Teddlie, 1998). It is therefore imperative that an appropriate methodological process be used to undertake the research, because it is critical to the effectiveness of the research project and the ability of the researcher to examine the research problem. The next section examines further the three broad approaches to research to provide a justification for selecting a particular method.

4.4.1 Qualitative, quantitative and mixed methods approaches to research

There are three widely used research approaches and designs including: qualitative, quantitative and mixed methods designs. Creswell (2009) refers to a qualitative study as an
inquiry process that includes the provision of insight into human or social problems. Additionally, an understanding into such problems is developed predominantly using words, pictures or observations; reporting in-depth views of informants in a natural setting. Often qualitative methods are included within a research design to probe keys issues, to ensure appropriate data is being collected and to explore relationships between selected factors. Strauss and Corbin (1990) suggest that qualitative methods can be used to declare or acquire new perspectives on factors about which very little is known. In summary, it is argued that qualitative research provides a more in-depth analysis to quantitative methods and as such qualitative studies are suited where in-depth information is required about a specific factor and to explore particular phenomena.

Alternatively, a quantitative study while still used to inquire about social or human problems is developed around testing a model comprised of several variables. The variables are measured with numbers and analysed using statistical techniques (Babbie, 2007). A common approach to conduct a quantitative study is to test the causal relationship between a set of variables or, put another way, the impact of a set of independent variables upon a dependent variable; where the independent variable is the cause and the dependent variable is the outcome or effect (Neuman, 2011). Additionally, quantitative research aims to test a hypothesis which usually postulates that the independent variable is significantly correlated either positively or negatively to the dependent variable (Creswell, 2009). To summarise, hypotheses are often developed and tested to confirm a theory and in an attempt to be able to generalise findings from a sample to the general population.

Although the debate between quantitative and qualitative theorists has been ongoing for more than a century; a number of researchers have recently pledged their support for the movement that the two methods are compatible and can be combined (Caracelli & Greene,
The mixed methods theorists propose their ideas in direct contrast to the incompatibility thesis, which suggests that quantitative and qualitative methods are incompatible and cannot be combined. The approach of mixing qualitative and quantitative studies is often referred to as ‘mixed methods’. Johnson and Onwuegbuzie (2004) refer to mixed methods as “the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study” (p. 17). In some instances mixed methods is referred to as the third methodological movement or wave in comparison to quantitative and qualitative approaches (Creswell, 2009; Tashakkori & Teddlie, 1998).

This study will use a quantitative approach, because amongst other reasons, this study aims to test a set of hypotheses, as well as confirm and add to current theory. In particular, the research questions are designed to examine how a number of concepts relate with one another. A number of hypotheses are used to be able to better understand these relations. For example, how affective organisational commitment relates to innovative behaviour, so the question arises as to whether the relationship is positive or negative and to the strength of the relationship. So, how much of an influence will affective organisational commitment have on innovative behaviour. It is clear that such issues can be examined using a quantitative research design. As previously mentioned, Neuman (2011) and Creswell (2009) suggest that a quantitative approach is often used to test a set of variables or test a set of hypotheses. As well, qualitative research was not included in this study because in-depth information was not required to answer the research questions. This is not to discount the importance of qualitative research, but to say that further research could use qualitative research to provide an understanding into why the constructs to be examined in this study related in a particular
way. The next section discusses further the quantitative approach to research and specifically how it will be used within this study, as well as the factors that inform and contribute to the development of the different research designs.

4.5 Research method and design undertaken in this study

This section will first explore the different options available to researchers when designing a research project, which will be followed by a discussion of the specific options selected to operationalise this study. This study uses a deductive approach to examine the proposed model for testing. The study begins with the realisation of a broad topic that is focused by a review of the extant literature. An in-depth review of academic literature enhances the researcher’s knowledge about current theories and concepts, which aids in the construction and design of a research model or conceptual framework to be tested (Babbie, 2007). The model for testing is developed from a review of the extant literature and is then examined using a quantitative method of data collection and analysis within a post-positivist paradigm.

Social research is developed using three main overall aims, one aim can be used per study or a combination of aims can also be applied. However, some researchers have applied their knowledge of research designs differently from one another, while still converging on a shared overall understanding. For example, Cooper and Schindler (2003) outline that research design can be explained and examined using eight ‘descriptors’ as depicted in table 4.2 (the methods used within this study are highlighted in bold). The descriptors provided by Cooper and Schindler (2003) are similar to other prescriptions of research design; however, differs by the wording of categories and options. For example, Cooper and Schindler suggest that a study can be categorised as being either exploratory or formal. An exploratory study
predominantly will have structures that are subject to change with the goal to construct hypotheses and research questions that can be used by ‘formal’ researchers to further test the hypotheses. A formal study starts with a hypothesis or set of hypotheses and aims to examine the research questions to ultimately either accept or reject the proposed hypotheses.

Table 4.2  Descriptors of Research Design

<table>
<thead>
<tr>
<th>Category</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>The degree to which the research question has been crystallized [sic]</td>
<td>• Exploratory study</td>
</tr>
<tr>
<td></td>
<td>• Formal study</td>
</tr>
<tr>
<td>The method of data collection</td>
<td>• Monitoring</td>
</tr>
<tr>
<td></td>
<td>• Interrogation/communication</td>
</tr>
<tr>
<td>The power of the researcher to produce effects in the variables under</td>
<td>• Experimental</td>
</tr>
<tr>
<td>study</td>
<td>• Ex post facto</td>
</tr>
<tr>
<td>The purpose of the study</td>
<td>• Descriptive</td>
</tr>
<tr>
<td></td>
<td>• Causal</td>
</tr>
<tr>
<td>The time dimension</td>
<td>• Cross-sectional</td>
</tr>
<tr>
<td></td>
<td>• Longitudinal</td>
</tr>
<tr>
<td>The topical scope – breadth and depth – of the study</td>
<td>• Case</td>
</tr>
<tr>
<td></td>
<td>• Statistical study</td>
</tr>
<tr>
<td>The research environment</td>
<td>• Field setting</td>
</tr>
<tr>
<td></td>
<td>• Laboratory research</td>
</tr>
<tr>
<td></td>
<td>• Simulation</td>
</tr>
<tr>
<td>The participants’ perception of research activity</td>
<td>• Actual routine</td>
</tr>
<tr>
<td></td>
<td>• Modified routine</td>
</tr>
</tbody>
</table>

Source: Cooper and Schindler (2003, p. 147)

Johnson (2001) used the terms descriptive, predictive and explanatory in a study of non-experimental design. There is a well-known categorisation suggesting that research has three main objectives: exploration, description and explanation (Babbie, 2007). Exploration refers to research that is undertaken to explore a phenomena or topic that researchers do not know much about or is new. The goal of description or a ‘descriptive’ study, as suggested by Johnson (2001), is to describe phenomena or events by making observations and then providing a description of these observations. In contrast, an explanatory study (explanation) is to further explain what has been explored and described in past studies. As previously
mentioned, the researchers do agree on the meaning of the three objectives; however, different disciplines seem to refer to the categorisations using different terms. The view and terms put forward by Cooper and Schindler (2003) are developed from the business research discipline, Johnson (2001) educational research, and Babbie (2007) social research.

Therefore, accepting that different disciplines have different views, it is important that a clear and concise research design be outlined to avoid any confusion with regards to interpretation of current research designs. As such, research can either be considered generally as experimental or non-experimental (also referred to as ex-post facto) (Cooper & Schindler, 2003; Sousa, Driessnack, & Mendes, 2007). Experimental research can be further broken down into pre-experimental, true-experimental or quasi-experimental. Pre-experimental studies are considered to not be true experimental designs, because they do not compare the results to another comparable group. Comparisons are said to be essential for establishing causality and therefore it is not possible to establish causality in a pre-experimental study (Johnson, 2001). On the other hand, true-experimental studies examine cause and effect relationships following a strict set of prescriptions and guidelines. The simplest true-experimental design would include a pre-test of the cause and effect relationship, exposure to stimulus or some form of change, which would be followed by a post-test to provide insight into the impact of the stimulus or change. A true-experimental study would also include an experimental group and a control group. For example, within a clinical study for a new prescription medicine; the experimental group would be exposed to the trial drug while the control group would only be exposed to a placebo (a sugar pill), which they are led to believe is the drug that is being tested. There are four widely used true-experimental designs: Post-test only control group design, post-test only control group design, pre-test/ post-test control group design and Solomon four-group design.
Similar to true-experimental designs, quasi-experimental designs are used to examine cause-and-effect relationships. Nevertheless, a quasi-experimental design will often not consist of both a pre and a post test and/or may not contain a control group/s. Moreover, unlike experimental designs where equivalent subjects are compared, quasi-experimental studies tend to compare similarities and differences between non-equivalent subjects (Sousa et al., 2007). Furthermore, the participants within a quasi-experimental study are often not selected at random. The non-random selection of participants/subjects has been suggested to reduce the representation of the sample to the wider population, if the sample has been selected at convenience. However, if the non-random sample has been selected purposively then it is suggested that the sample will be more representative of the wider population (Babbie, 2007). Additionally, the most common quasi-experimental design is referred to as the non-equivalent control group design with pre-tests (Sousa et al., 2007). The design includes a non-random sample (often consisting of entire work groups) comparing non-equivalent groups. There are three well-known quasi-experimental designs: non-equivalent pre-test/ post-test control group design, control-group interrupted time series design and single-group interrupted time-series design (Creswell, 2009).

Non-experimental designs are easily identifiable because there is no comparison of groups, whether they are equivalent or not; there is no random assignment and variables are not manipulated. The independent variables in a non-experimental design are predominantly categorised as being natural or life experiences that, more often than not, cannot be manipulated (Neuman, 2011). Specifically, examples include most demographics; such as age, gender and educational level. Non-experimental designs can be further categorised as being either descriptive (exploratory) or correlation-based (Johnson, 2001). As previously mentioned, descriptive studies are applied when undertaking exploratory research or when
there is a diminutive understanding about a particular topic (Ghauri & Gronhaug, 2002). Conversely, non-experimental correlation designs are predominantly used when attempting to examine the nature of a set of relationships or the link between variables, unlike the experimental designs that are mainly concerned with examining cause and effect relationships.

Another noteworthy factor about quantitative research design is the timing of the study. For example, research projects can gather data at one point in time (cross-sectional) or at multiple points in time (longitudinal). Cross-sectional research is referred to as a single-shot design, which effectively takes a ‘snapshot’ of one point in time (Cooper & Schindler, 2003; Neuman, 2011). In contrast, a longitudinal study is able to examine; for example, employee behaviour (innovative behaviour) before and after the implementation of a knowledge management system.

As previously highlighted, this study will apply a cross-sectional explanatory (formal) quasi-experimental (non-equivalent control group design – post-test only) design. Collecting data through surveys (interrogation/communication) based on an employees’ perception about actual work in the field of nursing (actual routine and field setting). The study will use statistical data analysis techniques to establish relationships between the independent and dependent variables. The statistical data analysis techniques will be discussed in chapter five: Statistical data analysis.

4.6 Validity and reliability

When undertaking a study, it is essential that the results are reliable and valid, and that the motives for using a particular method are explained. This is generally achieved
through four tests including: construct validity (involving content validity), internal validity, external validity and reliability (Babbie, 2007).

4.7 Construct Validity

Babbie (2007) defines construct validity as the degree to which a scale actually measures what it is intended to measure. At this point it is important to note that there are four main facets of construct validity (convergent validity, content validity, discriminant validity, and nomological validity), although only content validity (also referred to as face validity) is of concern when first determining which scales to use. To explain, content validity will be discussed now because it is the only test of construct validity that can be conducted before data collection. Content validity examines whether items within a scale are representative of the constructs they are expected to measure (Hair, Black, Babin, & Anderson, 2010; Kline, 2011). Therefore, convergent, discriminant and nomological validity will be discussed in chapter five: Statistical data analysis.

Content validity can be differentiated from other tests of validity, because it is based on expert theory and research, and not on empirical testing (Neuman, 2011). The content of this study is constructed validly by using measures from validated studies, for example, only scales that have been successfully used in the past and that are suggested to be good indicators are used within this study. Therefore, to address content validity and to provide clarity into the research process an outline, the data collection method, the instruments used, and the justification for using these instruments will now be discussed. This section explores the relevant issues regarding surveys disseminated at three Australian hospitals.
4.7.1 Data Collection - Survey

Data collection followed a quantitative approach consisting of a cross-sectional survey (see appendix three). Access to resources was granted by all three hospitals participating in the study to assist in the research process. Prior to the distribution of surveys the researcher met with the directors of nursing (DON) or the hospital’s equivalent to discuss the research project and an appropriate process in which to collect the data. The researcher discussed the importance of the research and the objectives to be met. It was also explained to the DON that the foremost purpose of the research was to collect the opinions, perceptions, beliefs and experiences of nursing employees and their supervisors. It was agreed that the researcher would have access to hospital wards to distribute the surveys and that the information would be kept confidential and at no time would any individual results be relayed to hospital management.

The data collection included distributing the surveys as well as promoting the research to potential participants. The promotion of the study included two approaches: a letter from hospital management seeking participants/ explaining the study (see appendix four) and a poster promoting the study (the poster was pinned up in staff rooms and on notice boards) (see appendix five). To distribute the surveys the researcher approached each ward, identified a central role to each ward and asked the employee filling this role if they would be willing to distribute the surveys. This approach was conducted with the help of the hospitals senior management. All of the employees approached agreed to be involved and many of them commented that it did not take very much effort on their behalf.

The survey consisted of questions designed to provide quantitative data to examine the relationships proposed in chapter three, figure 3.1 (conceptual model). The participants received an envelope that included the survey and a postage-paid envelope. The envelope
was given to participants so it was easy for them to send the survey back to the researcher and retain their anonymity. The benefit of distributing the surveys throughout each ward is that it provides the researcher with an opportunity to talk to the central people in each ward. In this case, speaking to people within each ward about the research project was another method of informing potential participants about the research.

Surveys are widely used as a method of collecting quantitative data usually in the form of a questionnaire aimed at identifying the characteristics, attitudes or opinions of a representative sample of individuals. As previously mentioned, a survey was used to be able to generalise from the sample to the greater population (Babbie, 2007; Creswell, 2009). Surveys are predominantly used in descriptive or explanatory studies for measuring variables and testing multiple hypotheses (Saunders et al., 2000). Surveys are usually completed online, telephone, face-to-face, or paper-based by mail (Neuman, 2011). There are a number of benefits associated with surveys that include the provision of quick, inexpensive, efficient, and accurate means of assessing information about the population. However, survey research can also be used poorly and its major limitation is associated with the poor response rate often encountered when collecting survey data. Other weaknesses of survey research include inflexibility (they cannot be altered like interviews to probe important issues) and the need to standardise the questions for the entire sample (Babbie, 2007).

A self-administered questionnaire is utilised in this study. Self-administered questionnaires are the most common method used in descriptive research to collect quantitative data, with support from one or more techniques (Neuman, 2011). The objective of the survey instrument in this study was to examine the conceptual model (see figure 3.1) by testing the relationships between the constructs proposed. This study is constructed to ensure good questionnaire design in an attempt to assist respondents to understand the
questionnaire. Most of the scales used continuous measures ranging from ‘strongly disagree to strongly agree’ and were measured on a six-point rating scale. The rating scale is widely used and very popular in survey-based research, as it has been shown to be simple in construction, has good reliability and is easy for respondents to understand (Miller & Salkind, 2002).

The survey instrument comprised 59 items distributed among a number of sections that examined demographics, innovative behaviour, affective organisational commitment, leader-member exchange, tie strength, POS, procedural justice, interactional justice and innovative organisational culture. The participant information sheet and the survey instrument are provided in appendix two and three respectively. All variables included in this study were measured using multiple item scales drawn from previous research. This approach was applied because multiple item measures may be more representative and related to the constructs than single item measures (Gardner, Cummings, Dunham, & Pierce, 1998).

According to Babbie (2007, pp. 259-260) a number of strategies can be applied to maximise participation and were used within this study. These included:

1. Making the survey as short as possible and easy to complete and return (via pre-paid mail).
2. Sending an organisation-wide letter explaining the purpose of the study and the benefits to themselves and the organisation.
3. Providing a poster on staff notice boards to promote the research and to inform potential participants about the study.
4. Guaranteeing the anonymity and confidentiality of all responses and providing an undertaking that no participant will be disadvantaged because of their involvement in this research.

5. Providing a contact person and telephone number for participant questions about the research or concerns about its implications for them.

4.7.2 Measures

To address the research questions, the following measures were incorporated into this study. Demographic variables included within the survey were gender, age, marital status, education level, employment status, length of service and the ward in which respondents work. Survey scales (instruments) to test the impact of the perceptions of nursing employees and some organisational factors upon affective organisational commitment and in turn the impact these factors have on innovative behaviour are as follows:

Graen and Uhl-Bien’s (1995) LMX instrument was used to measure nurses satisfaction with the supervisor-subordinate relationship. The instrument contained seven survey items. Maslyn and Uhl-Bien (2001) suggested that the LMX-7 instrument was a reliable measure ($\alpha = .90$) for examining the supervisor-subordinate relationship. Gerstner and Day (1997) suggest that the LMX-7 instrument has good psychometric properties when compared to other measures of LMX. There has also been some support to measure LMX as a multi-dimensional construct (Liden & Maslyn, 1998); although Graen and Uhl-Bien (1995) found that the single dimension LMX-7 measure provided a higher amount of reliability and correlations with other constructs. There is also support within nursing literature for the use of the LMX-7 model proposed by Graen and Uhl-Bien (1995) (e.g. Brunetto, Farr-Wharton, & Shacklock, 2011; Brunetto et al., 2010; Davies, Wong, & Laschinger, 2011; Wong & Cummings, 2009).
The role of organisational culture in fostering the innovative behaviour of employees will be examined by a modified version of O’Reilly et al. (1991). More specifically, this study will apply the innovation sub-scale of organisational culture to measure the innovative culture that has formed within the organisation. This instrument has 5-items that examine predominantly the risk taking associated with innovative behaviour and the support required to foster an environment that is conducive of supporting the innovative behaviour of nursing employees.

Organisational justice will be measured using an instrument develop by Luo (2007). Two dimensions of organisational justice will be applied within this study; procedural and interactional. The procedural justice dimension contains 8-items and examines nurses’ perceptions about the fairness of formal polices and governance that affects the way they are treated and the rewards they receive in the workplace. On the other hand, the interactional justice dimension contains 6-items and examines nurses’ perceptions about the fairness of the interpersonal exchange that takes place during the application of formal policies and governance. Due to the fact that the instrument measuring organisational justice is relatively new, it has not been applied within current nursing literature. However, the instrument was developed and applied by Luo (2007) who found the measures to be reliable and published the use of the instrument in the Academy of Management Journal.

The relationship strength (tie strength) between nursing employees will be examined using an instrument developed by Levin and Cross (2004). The questions have been modified to provide an assessment of the overall tie strength between nurses. Therefore, providing an indication as to whether relationships between nurses are predominantly weak or strong. The instrument contains 3-items and examines nurses’ perceptions about the strength of their workplace social network ties, based on closeness, communication and
interaction. The instrument proposed by Levin and Cross (2004) was originally a 2-item measure developed by Hansen (1999). Levin and Cross added a third item to increase the reliability of the measure. Levin and Cross (2004) found the tie strength instrument to have high factor loadings and to be highly reliable ($\alpha = >.8$).

POS is measured using a uni-dimensional instrument, created to measure organisational support as perceived by the employee (Eisenberger et al., 1986). The amount of items in this measure was altered by Eisenberger, Cummings, Armeli and Lynch (1997) to 8-items. The modified version is used in this study to measure POS. A study by Lynch, Eisenberger and Armeli (1999) suggested that prior studies (Eisenberger et al., 1986; Settoon et al., 1996; Shore & Tetrick, 1991) have created a chain of evidence supporting that the POS measure modified by Eisenberger et al. (1997) is a highly reliable measure for examining employees’ perceptions of organisational support. Moreover, the POS measure has been recently and successfully applied within nursing research (e.g. Armstrong-Stassen & Schlosser, 2010; Edwards & Peccei, 2010; Francis, 2011; Laschinger, Purdy, Cho, & Almost, 2006; Patrick & Laschinger, 2006; Van der Heijden et al., 2010).

Affective organisational commitment will be examined using a validated measure developed by Allen and Meyer (1990). This measure of affective organisational commitment is a widely used measure and is also considered to be a highly reliable instrument (Allen & Meyer, 1990; Meyer et al., 1990; Rhoades et al., 2001). The instrument contains 6-items that measure the level of an employee’s emotional attachment to the organisation. In the context of this study the instrument measures the affective organisational commitment of nursing employees. The instrument developed by Allen and Meyer has also been widely applied within research examining nurses (e.g. Brunetto & Farr-Wharton, 2004b; Brunetto et al., 2010; Hackett, Bycio, & Hausdorf, 1994; Laschinger, Finegan, & Shamian, 2001;

An adapted version of Scott and Bruce’s (1994a) measure of innovative behaviour will be used to measure the individual innovative behaviour of nursing employees. Scott and Bruce (1994a) found the instrument to be highly reliable, reporting a Cronbach alpha of 0.89. The original 6-item scale was modified for use in this study, which required the restructuring of the survey questions to be directed at nursing employees. The original innovative behaviour instrument was designed to survey supervisors about the innovative behaviour of subordinates. However, Carmeli et al. (2006) used the instrument to survey both supervisors and subordinates; this included the subordinate being asked to provide a rating of their own innovative behaviour. There are also several recent applications of the measure developed by Scott and Bruce, all of which reported high levels of reliability (e.g. Carmeli et al., 2006; Carmeli & Spreitzer, 2009; Chen & Aryee, 2007; Yuan & Woodman, 2010).

4.8 Internal validity

Internal validity refers to causal studies free from errors internal to the design of the project (Neuman, 2011). Yin (2003) states that pattern-matching enable causal relationships to increase internal validity and can be conducted by comparing the findings of previous research with the findings of this study. Pattern-matching involves the examination of a theoretical pattern (examination of academic literature) and an observed pattern or case study (Troshim, 1989). It is also expected that the two patterns are matched and discussed. This study utilises pattern-matching theory by first examining the academic literature that develops an understanding of the theoretical pattern. Then constructed from the academic literature a selection of instruments is used to gather data and to develop an understanding
about a particular group of employees. Such an understanding is developed to enable the researcher to be able to discuss what is happening at the individual level within the organisation, based on results from the survey and the existing body of literature. By matching the two patterns, the researcher is then able to make recommendations to management that are specifically tailored to their needs.

4.9 External validity

External validity infers that the findings of the study can be generalised to a similar study (Yin, 2003). This is achieved by using a research site that is typical of street-level bureaucrats or more specifically nursing employees; this should increase the generalisability of the research. Creswell (2009) suggests that to be able to generalise a study, the sample selected should be representative of the population. Therefore, the sample selection is crucial when attempting to increase the external validity of the study, and this is discussed next.

4.9.1 Sampling

The sample of a study requires several factors to be considered, including the unit of analysis, who will be examined, procedures that will be used and the size of the sample to be examined (Hair et al., 2010). With regards to the unit of analysis, this study examines the impact of workplace relationships and organisational factors upon the commitment and innovative behaviour of nursing employees. As such, this study is conducted at an individual unit of analysis. The sample was selected (who will be examined) based on the requirement of in-depth information, with this in mind the entire population of nursing employees from hospital A, B and C were surveyed. This study therefore applied a purposive non-probability sample, examining the entire sample available instead of a sample based on probability or random sampling.
As previously mentioned, an important facet of quantitative research is that it should be generalisable to a wider population. To be able to generalise, the sample selected should be representative or typical of the population being examined. Particularly, the organisations selected need to be representative of a health care organisation (hospital) that requires commitment and innovative behaviour from their employees in order to maintain or improve organisational effectiveness and overall performance. Three hospitals were chosen for this study because they are required to develop innovative business practices (effective problem-solving processes) and to develop employee commitment, especially during a period where skilled nursing employees are limited. Nursing employees were examined because hospitals require nurses to be affectively committed and require the use of innovative solutions to ensure effectiveness and efficiency.

To further establish representativeness of the sample to the Australian nursing workforce, cross tabulations with chi-square tests were conducted. The cross tabulations were undertaken to determine the distribution of age and gender between the three hospitals examined, and to establish whether these demographics were statistically independent of one another. The results from the cross tabulations will be compared to actual data about the Australian nursing workforce derived from the Australian Institute of Health and Welfare (AIHW) website (www.aihw.gov.au). First, in 2009 approximately 65.9 per cent of nurses were employed in the public system and 50.48 per cent of nurses in this study’s sample were employed in public sector hospitals (106/210). Second, with regards to gender, males comprise 9.6 per cent of the Australian nursing workforce and this sample consisted of 13.9 per cent of males in hospital ‘A’, 4.8 per cent in hospital ‘B’, and 12.5 per cent in hospital C. The result from the chi-square test ($\chi^2 = 3.43, p > .05$) indicates that from the hospitals examined the distribution of gender was not statistically independent of one another. Third,
with regards to age, the average of Australian nurses is 46.4 years of age and the average age of nurses for this sample was 45 years and over for each of the three hospitals examined. The result from the chi-square test ($\chi^2 = 3.99$, $p > .05$) indicates that the distribution of age in the three hospitals was not statistically significantly different when compared.

### 4.10 Descriptive statistics: demographics, means and standard deviations

A total of 210 useable surveys were returned from a sample of 1000 nurses, inferring a response rate of 21.4 per cent. As previously mentioned, the survey responses were from three hospitals located in Australia. One public-sector hospital (hospital A) and two private-sector hospitals (hospitals B & C) were examined. The sample from each hospital was as follows: 108 (51.4%) responses from hospital A, 62 (29.5%) responses from hospital B, and 40 (19%) responses from hospital ‘C’. The survey participants were predominantly female; 23 (11%) were male and 187 (89%) were female. The results support past literature which suggests that, similar to many other countries, Australia has an aging workforce (Stanton, 2002). This is evident within the nursing employees examined, 111 (52.9%) were aged 45 years and over, a further 70 (33.3%) were aged between 31 and 44 years, and 27 (12.9%) were aged 30 or below. The marital status of the sample suggests the majority are married or living with a partner (74.3%) and the remainder are single, divorced or widowed (25.7%).

There were a similar amount of part-time and full-time nurses; 101 (48.1%) part-time, 91 (43.3) full-time and 18 (8.6) casual/pool. Also the results outline that most nurses have been with the hospital a very short time, compared to how long they have been in the nursing profession. For example, 58 per cent (122) had been in the nursing profession for 16 years or more, while 58.5 per cent (123) had been with their current hospital for three years or less, with 27.1 per cent (57) being there for less than one year.
Table 4.3 Demographic results

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Hours worked</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hospital A</td>
<td>108</td>
<td>51.4</td>
</tr>
<tr>
<td></td>
<td>Hospital B</td>
<td>62</td>
<td>29.5</td>
</tr>
<tr>
<td></td>
<td>Hospital C</td>
<td>40</td>
<td>19.0</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>23</td>
<td>11.0</td>
<td>71-79 hours</td>
</tr>
<tr>
<td>Female</td>
<td>187</td>
<td>89.0</td>
<td>80+ hours</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;30 years</td>
<td>27</td>
<td>12.9</td>
<td>Medical</td>
</tr>
<tr>
<td>31 – 44 years</td>
<td>70</td>
<td>33.3</td>
<td>Surgical</td>
</tr>
<tr>
<td>&gt;45 years</td>
<td>111</td>
<td>52.9</td>
<td>Maternity</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>140</td>
<td>66.7</td>
<td>Emergency</td>
</tr>
<tr>
<td>Living with partner</td>
<td>16</td>
<td>7.6</td>
<td>Specialty</td>
</tr>
<tr>
<td>Single</td>
<td>34</td>
<td>16.2</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>15</td>
<td>7.1</td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>5</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing Unit</td>
<td>16</td>
<td>7.6</td>
<td>10-15 years</td>
</tr>
<tr>
<td>Manager</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Nurse</td>
<td>34</td>
<td>16.2</td>
<td>25+ years</td>
</tr>
<tr>
<td>Registered Nurse</td>
<td>99</td>
<td>47.1</td>
<td></td>
</tr>
<tr>
<td>Endorsed</td>
<td>36</td>
<td>17.1</td>
<td></td>
</tr>
<tr>
<td>Nurse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrolled Nurse</td>
<td>10</td>
<td>4.8</td>
<td>1-3 years</td>
</tr>
<tr>
<td>Assistant in Nursing</td>
<td>1</td>
<td>.5</td>
<td>4-9 years</td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
<td>6.7</td>
<td>10-15 years</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital trained</td>
<td>29</td>
<td>13.8</td>
<td>16-24 years</td>
</tr>
<tr>
<td>High school</td>
<td>18</td>
<td>8.6</td>
<td>25+ years</td>
</tr>
<tr>
<td>Diploma/ TAFE</td>
<td>45</td>
<td>21.4</td>
<td>Full-Time</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>86</td>
<td>41.0</td>
<td>Part-Time</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>32</td>
<td>15.2</td>
<td>Casual</td>
</tr>
</tbody>
</table>

### Employment status

<table>
<thead>
<tr>
<th>Hospital tenure</th>
<th>Nursing tenure</th>
<th>Employment status</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 year</td>
<td>&lt;1 year</td>
<td>Full-Time</td>
</tr>
<tr>
<td>1-3 years</td>
<td>1-3 years</td>
<td>Part-Time</td>
</tr>
<tr>
<td>4-9 years</td>
<td>4-9 years</td>
<td>Casual</td>
</tr>
<tr>
<td>10-15 years</td>
<td>10-15 years</td>
<td>Pool Nurse</td>
</tr>
<tr>
<td>16-24 years</td>
<td>16-24 years</td>
<td></td>
</tr>
<tr>
<td>25+ years</td>
<td>25+ years</td>
<td></td>
</tr>
</tbody>
</table>

4.11 Reliability

The method to ensure reliable research is to develop a study that can be replicated and if under similar circumstances will receive similar results (Yin, 2003). As previously explained, the methodology chosen ensures that the study is reliable and that it is able to be replicated. The reliability is generated because the procedures of the study were constructed...
from successfully tested and validated methods. Additionally, the accurate and detailed records of this study enable the readers to be able to replicate the entire study easily.

4.12 Combining the data

Following the statistical data analysis, an analysis of all forms of data will be conducted, including the results from this study. This grouped analysis will be undertaken utilising a process known as pattern-matching. Yin (2003) suggests that pattern-matching increases the internal validity of the research by comparing observed with predicted patterns. Pattern-matching allows the researcher to examine the underlying meaning of the data collected by identifying emerging themes within the data set. Emerging themes are identified when the researcher determines the consistency of information between organisational documentation, survey results, and the body of literature (Yin, 2003). To summarise, pattern-matching provides a process for combining what the organisation prescribes, information identified through the survey results, and what has already been established in the literature.

4.13 Research process

The study begins with collecting the survey within three Australian hospitals, to ensure anonymity these hospitals will be referred to as hospital A, B and C. The process of gathering the survey data has already been discussed in chapter four, section 4.6.1. Following the collection of the survey data, the quantitative data analysis will be conducted. The quantitative (statistical) data analysis will be discussed in chapter five. Subsequent to the data analysis, a pattern-matching procedure will then be used to confirm the reliability of the findings from the quantitative method applied in this study.
4.14 Ethical considerations

According to university and hospital guidelines, ethical clearance is required for any research involving the use of human subjects. Ethical clearance for this research was applied for and granted (see appendix six) through an expedited ethical review to Southern Cross University (ECN-10-192) and the North Coast Area Health Service, New South Wales, Australia (NCAHS) (493N). The ethical implications that arise when considering ethics include issues such as recruitment, confidentiality, informed consent and de-briefing in relation to participants. Participants were selected and sent a paper copy of the survey which also introduces the researcher, the nature of the research being conducted and a request for their participation in the study. The information and data obtained for this study was not used for any other purpose than what was specifically set out in the consent forms that were given to participants. Participants were also informed that the results of the surveys would be handled confidentially and that the data would only be used to form trends. Participants were also informed that they could withdraw at any time without any repercussions. These measures ensured that participants were adequately informed and understood the requirements of the study before volunteering to participate (Kvale, 1996).

4.15 Conclusion

This chapter has explained the methodological process that will be used to conduct this study. The selection of a quantitative approach within a post-positivist paradigm creates a foundation for a comprehensive understanding of the organisational factors that impact upon the affective organisational commitment and innovative behaviour of nursing employees. The use of a quantitative design, in the form of a survey and statistical data analysis, provides a valid and reliable approach to conduct the research. The survey
contained several instruments designed to test the proposed hypotheses. The discussion about the survey instrument was followed by a summary of the research process and ethical considerations, which outlined the progression of the study and demonstrated that appropriate guidelines have been met. The next chapter furthers the discussion on research methodology, focusing on an explanation of structural equation modelling and partial least squares.
5.0 **CHAPTER FIVE: RESEARCH METHODOLOGY PART TWO – EXPLANATION OF STRUCTURAL EQUATION MODELLING AND PARTIAL LEAST SQUARES**

5.1 **Introduction**

This chapter discusses the analytical procedures used to statistically analyse the proposed hypotheses. First, a multiple analysis of variance (MANOVA) is introduced as a tool for analysing whether there are statistically significant differences between public and private sector nursing employees. Second, the discussion introduces structural equation modelling (SEM) and provides a clear process for undertaking a SEM analysis. The explanation of the SEM process includes a discussion and justification about the use of SEM within this study. The discussion about SEM begins with an overview of SEM; this is followed by a justification for the use of SEM, which is followed by a discussion of conventional and contemporary SEM techniques. Third, Partial Least Squares (PLS) is introduced as an alternative to SEM and the process of conducting a PLS analysis is briefly discussed. The discussion about PLS also includes a justification for its use within this study, outlining that it will be used to confirm the results derived from the SEM analysis.

5.2 **MANOVA**

A MANOVA is similar to a univariate analysis of variance (ANOVA). However, a MANOVA allows for the testing of multiple dependent variables. Hair et al. (2010) suggest that a MANOVA is a dependence technique that has the capability of measuring the differences for multiple dependent variables based on categorical variables, also referred to as the treatment group, that take the place of the independent variables. At this stage it is also important to highlight what makes a MANOVA a multivariate analysis. For example, a regression is considered to be multivariate when it includes multiple independent variables.
However, an analysis of variance, on the other hand, is considered to be multivariate when it applies multiple dependent variables. In summary, this study will use a MANOVA to examine the differences between several dependent variables based on a categorical set of variables (public and private sector nurses). Specifically, a MANOVA will be used to examine hypothesis 1 (There will be no significant differences between public-private sector nurses’ organisational factors (procedural and interactional justice, organisational culture, tie strength and LMX) and work-related outcomes (POS, affective organisational commitment and innovative behaviour). As well, a MANOVA is used because it is an appropriate method of analysis for examining the second primary research question through an examination of hypothesis 1.

5.3 Overview of SEM

Survey data will be statistically analysed using the Statistical Package for Social Sciences (SPSS) and the Analysis of Moment Structures (AMOS) software. AMOS is a program that has the functionality to be able to open, edit and analyse SPSS files. AMOS is a software tool designed to undertake the data analysis associated with SEM (Arbuckle, 2010). In particular, this study will apply SEM theory and techniques to examine a path model. As well, using SPSS, standard deviation and means analyses will be calculated for all variables proposed to be tested; this should provide a greater understanding into the average responses for each question.

To ensure clarity and because of the unique language used within SEM, some terms associated with developing a SEM model will be discussed. For example, SEM refers to exogenous and endogenous constructs (constructs are also referred to as variables within SEM literature), which are independent and dependent variables within a regression.
Moreover, it is stipulated that SEM includes two main variables (constructs): latent and observed (also referred to as manifest) (Kaplan, 2000; Kline, 2011; Schumacker & Lomax, 2004). Latent variables are considered to be constructs that are not directly observed or measured (Schumacker & Lomax, 2004). In contrast, observed (manifest) or measured variables are directly observed and can be used as a measure or indicator to define or deduce latent variables/constructs. To further explain, latent variable SEM includes the identification of causal relationships between the latent variables to examine the path specified in the conceptual model, as well as the observed variables and how they load (indicate) onto the latent variables.

SEM can be applied using two models (two-stages): the measurement model (factor analysis) and the structural model (path analysis) (Kaplan, 2000; Kline, 2011). As such, this study will examine the measurement model by undertaking a confirmatory factor analysis (CFA) to determine the goodness of fit between the proposed model (conceptual model) and the observed variables (Jackson, 2001). In particular, CFA commences with theory about a particular construct that is associated with a group of measures and statistically examines whether the measures are valid indicators of the construct in question (DiStefano, 2002; Segars & Grover, 1993). Therefore, because CFA confirms support for the indicators and how they measure a particular construct, it is referred to as a confirmatory method.

The confirmatory method provides an indication of how well the exogenous (independent) variables are able to predict the endogenous (dependent) variables. Moreover, each exogenous variable has a residual value, meaning they are not perfectly related to other variables in the model; the residual is depicted by an error term within the structural model (Byrne, 2010; Kaplan, 2000; Kline, 2011). An error term can also be used within the measurement model associated with the observed variables, because the observed variables
are not perfect indicators of their associated latent variables. As such, due to the fact that this study is using pre-validated research instruments (survey questions from validated studies); it can be considered confirmatory in nature. Hence, a confirmatory factor analysis is a more appropriate than an exploratory factor analysis. Once the proposed model has been confirmed, the structural model (path analysis) can be examined; it prescribes the rules for examining the causal relationships between both exogenous and endogenous variables. To clarify, a path analysis includes the concurrent examination of a number of regression models that theoretically outline causal relationships amongst observed variables (Byrne, 2010; Kline, 2011).

SEM differs from conventional regression-based approaches because a variable can act as both an independent and a dependent. In particular, a regression model involves an examination where a dependent observed/measured variable is explained by one or several observed/measured variables (Byrne, 2010; Kaplan, 2000). In contrast, SEM outlines that a variable that regresses on another variable is always referred to as an ‘endogenous’ variable, even if the same variable is itself regressed upon (Kline, 2011). On the other hand, an ‘exogenous’ variable is the predictor of the ‘endogenous’ variable and is similar to the independent variable in a regression. A path model is also developed using only observed variables. Nevertheless, a path model differs from a linear regression because it has the capability to examine multiple exogenous (independent) variables (Preacher, Zyphur, & Zhang, 2010). Furthermore, when using Latent variables it is common for the measurement model to be combined with the structural model, even within a path analysis. This process is referred to as a structural equation model, fully specified SEM model or is also known as a generalised full model. To ensure clarity, from this point the combination of a measurement and structural model will be referred to as a full structural model.
5.4 Justification for using SEM

The use of SEM within the social sciences and other disciplines has become popular and has growing support from the research community, because SEM is thought to have advantages over the more conventional (first-generation) techniques. The major purpose of SEM is to examine the consistency between the theoretical model developed and the sample data collected. Additionally, SEM is broadly referred to as the statistical methodology combining factor and path analyses to measure a ‘full structural model’. Another reason for the growing support of SEM may be due to the ability of SEM to not only examine the relationship between a set of predictors and an outcome, but also to explain this relationship (Abramson, Rahman, & Buckley, 2005). Other advantages of SEM include the ability to: compare and examine alternative models, relationships between variables, determine whether the model holds for different samples, and identify reliability and error terms.

After considering the many benefits of SEM, there are three characteristics that make SEM an appropriate analytical tool for this research compared to conventional regression-based techniques. The first characteristic outlines that SEM allows for multiple equations and has the capability to examine the equations simultaneously (Byrne, 2010; Kaplan, 2000; Kline, 2011). This allows for the examination of a complex model, for example, a variable can be used as both a dependent and an independent variable. The benefit of being able to examine a complex model simultaneously makes it a suitable analytical technique for examining the first primary research question. To explain, the first primary research question seeks to examine a complex model, which includes a number of concepts that are inter-related; hence there is a benefit to examining the concepts simultaneously. The second benefit is the ability to include latent variables and account for the error in measurement, by accounting for measurement error the statistical estimation of relationships within a model is
improved. The third benefit comes from early research suggesting the benefit of being able to apply confirmatory methods as one reason that researchers are supporting the use of SEM in social science research (Anderson & Gerbing, 1988; Bollen, 1989). In particular, the use of confirmatory methods allows for the assessment of how well the proposed model fits the observed data.

5.5 The conventional SEM process

There have been several conventional methods prescribed to undertake the SEM process, although the methods do converge to provide similar approaches. To further explain, the approaches proposed within the body of knowledge are similar in many ways, although many prescriptions about the process of SEM use a different amount of steps and refer to the steps using different terms. For example, Bollen and Long (1993) outline a five-step process. However, all of the prescriptions of how to apply a structural equation model are common to the eight-step processes outlined by Diamantopolous and Siguaw (2000) and Schumacker and Lomax (2004). To explain the differences in the prescribed approaches to SEM, some researchers tended to combine the first two or three steps, which reduced the number of steps within some of the SEM processes to five or six. The conventional 5-step process includes:

The following figure was sourced from *A Beginner’s guide to Structural Equation Modeling* [sic] (Schumacker & Lomax, 2004, p. 61)
5.6 The two-stage approach to SEM

Kaplan (2000) suggests a problem with the conventional approaches to SEM, for example, “theory, theoretical models, and statistical models are viewed as one and the same apart from an error term – with the actual data playing little to no role at all” (p. 9). Kaplan is suggesting that theory is imperative within the SEM process and should be used more extensively within the development of structural models. Hair et al. (2010) prescribe a six-step process that is broken into two main stages to overcome the problems associated with the conventional SEM processes (see Figure 5.2). In particular, the use of a two-stage model, as previously mentioned, includes the extensive use of theory to specify a measurement model (stage 1) (confirmatory factor analysis), which should be used to develop reliable and valid empirical scales. Once the confirmatory factor analysis has been conducted and the measurement model is said to be the best fit for the observed data, then the structural model can be examined (stage 2). In summary, this study will apply the two-stage process proposed by Hair et al. (2010). The main reason for adopting the approach is the more conventional methods imply that the measurement model and the structural model be examined.
simultaneously. However, there is no point in examining a structural model if the observed measures are not good indicators of the latent constructs (Hair et al., 2010).
The following figure is sourced from *Multivariate Data Analysis: A Global Perspective* (Hair et al., 2010, p. 654)

![Diagram of Six-Stage Process for Structural Equation Modelling](image)

Figure 5.2: Six-Stage process for structural equation modelling

To ensure clarity regarding the data analysis, the six-steps of SEM proposed by Hair et al. (2010) will now be discussed in further detail.
5.7 Step 1: Defining the individual constructs

Step 1 requires the researcher to determine what items are to be used in the measured variables (Hair et al., 2010). This study will use already validated scales from prior research as measured variables. In particular, following a review of the literature, multiple-item scales (three or more items) that have previously been referred to as well performing measures were used to form the measurement models.

The survey instrument can be considered as a reflection of the measurement model and Hair et al. (2010) suggests that it is important to determine if the scales selected are suitable for measuring the associated individual construct. A pre-test with respondents that are similar with the proposed sample (nursing employees) can be used to screen the selected scales for appropriateness. Anderson and Gerbing (1991) suggest although there is no prescription about the exact number of participants that should be examined within a pre-test, researchers generally agree that the number should be relatively small (less than 30). Therefore, a pre-test was conducted using a survey developed from multiple scales, the pre-test examined 15 nurses. The results of the pre-test suggested that the survey items were appropriate for measuring how the commitment of nurses can lead to employee innovative behaviour. Although, some of the participants did point out a few questions that were difficult to comprehend, in-turn these minor issues were rectified by the researcher. Many nurses also responded that the survey was an appropriate length and did not take any longer than 20 minutes to complete.

The pre-test can be examined by determining the factor loadings for each variable. By applying the principles of factor analysis a factor loading for each survey item can be determined. This allows the researcher to determine what items/instruments may provide an accurate examination of the research model (Kline, 2011). The results from the pre-test
factor analysis will not be used to modify the model. However, the pre-test results do give the researcher an indication if the survey instrument and the proposed model for testing are appropriate. The responses gathered from the pre-test will be excluded from the final results of the study.

5.8 Step 2: Develop and specify the measurement model

Step 2 involves the latent variables being constructed in relation to their observed variables (Hair et al., 2010). To develop the measurement model a reflective measurement approach will be applied (Tabachnick & Fidell, 2007). A reflective measurement approach stipulates that latent variables cause the observed variables and there is always some level of measurement error suggesting that the observed variables are not completely explained. When developing the measurement model a number of rules of thumb recommended by Hair et al. (2010) were followed. For example, all observed variables were only loaded onto one variable (construct) due to the fact that cross-loadings can have a detrimental impact on construct validity. As well, all latent variables are indicated by a minimum of three observed variables, that is all of the scales for the survey instrument have a minimum of three items. Finally, all error covariances were set to zero, that is they were not estimated.

When specifying a SEM model, it is said to be over-identified if there are more unique variances and covariances than parameters to be estimated, which is thought to be ideal for confirming a theory. More specifically, a single latent variable with four observed indicators has eight parameters to be estimated (four paths from observed variables to the latent variable and four error variances) and ten unique variances and covariances. The variances and covariances can be calculated within a SEM modelling program such as AMOS, which is recommended when dealing with complex or large models. However, when
dealing with smaller and simpler models the following formula can be applied; \( p \) is equal to the number of observed variables (items indicating latent variable), so the number of unique variances and covariances can be calculated as \( \frac{1}{2} [p (p+1)] \). Therefore, applying the formula there are ten unique variances and covariance: \( 10 = .5 \times 4 * 5 \).

Moreover, if there are as many parameters to be estimated as there are unique variances and covariances, then the model is said to be just-identified (Kaplan, 2000). On the other hand, if there are more parameters to be estimated then unique variances and covariances, the model is said to be under-identified. It is important to note that just-identified models will result in zero degrees of freedom as well as a chi-square (\( \chi^2 \)) of zero (Hoyle, 1995). As such, just identified models are not appropriate for confirming a theory, because the goodness-of-fit is determined by the circumstance of being just-identified (Kline, 2011). With this said, just-identified or even under-identified models can become over-identified when the confirmatory models are combined within CFA or to form the structural model. To ensure the full structural model is over-identified, the following rules of thumb are highlighted: use four indicators as often as possible; three indicators are acceptable, but only when other latent variables have more than three indicators; and avoid instruments with less than three items (indicators) (Hair et al., 2010).

5.9 Step 3: Designing the study to produce empirical results

Step 3 revolves around attaining an appropriate sample size (Hair et al., 2010). Following the specification of the model (defining individual constructs), the selection of sample size, and an approach to deal with missing data, the model is ready to be estimated. However, before estimating the model it is also important to test for common method variance. Common method variance will be discussed further in section 5.9.8. It is
prescribed that larger samples can provide more generalisable results. For example, “results derived within larger samples have less sampling error and are more likely to be statistically significant than with smaller samples” (Kline, 2011 p. 112). An appropriate sample size has been suggested to improve the overall stability of the study. Therefore, it is now important to determine what sample size is considered large enough to ensure minimal sampling error and statistically significant results within SEM. Hair et al. (2010) suggests there are five considerations that impact on the required sample size: missing data, multivariate normality, the estimation technique, model complexity, and the average error variance (AVE) among the indicators.

5.9.1 Sample size justification

Kline (2011) suggests past researchers proposed that 100 to 150 participants is the minimum number required to conduct a SEM analysis. Kline also suggests that journal reviewers routinely reject SEM research with sample sizes smaller than 200. Hair et al. (2010) proposed a minimum sample size of 150 for studies with seven or less constructs, no latent variables with less than three indicators (observed variables), and moderate communalities (.5). Communality can be referred to as the variance shared between a construct and its measured variables (Tabachnick & Fidell, 2007). Within AMOS communalities are known as squared multiple correlations. In summary, a sample size of 150 is appropriate if there are no latent variables with less than three indicators and squared multiple correlations are moderate (.5) and above.

However, at this point it is important not to ignore other literature on sample size for SEM, which prescribes if there are issues with normality, model complexity, or missing data then sample sizes should be as large as 15 for every free parameter to be estimated. Although within more normal conditions sample sizes of 10 per estimated free parameter are
considered appropriate. However, samples of five per parameter are considered to be more achievable (Bentler & Chou, 1987). An issue arises because this study includes 94 free parameters to be estimated and this would infer a sample size of 1410 (15 per parameter), 940 (10 per parameter), or 420 (5 per parameter). The problem is that SEM is thought to become more sensitive with samples over 400, which in most cases will result in a poor goodness-of-fit (Hair et al., 2010).

To provide further explanation, this study includes seven constructs that may influence innovative behaviour. Therefore, applying the justification provided by Hair et al. (2010) a minimum sample size of 150 should be appropriate considering that all of the measures (instruments) were either just-identified or over-identified and communalities were considered to be high (all above .6). The study included 210 participants, which should provide a large enough sample size to provide some stability to the data and the results. However, it has been suggested that Partial Least Squares (PLS) may be a more appropriate method for examining studies with sample sizes less than 300 (Hair, Ringle, & Sarstedt, 2011). To ensure the results from the SEM analysis are in-fact stable, the data will be inserted into a PLS model. If the results are constant between both SEM and PLS this provides an indication that the analysis provides some form of stability considering this studies sample size. PLS will be discussed following the review of SEM.

5.9.2 Missing data

Similar to other types of analytical procedures, it is important that missing data be dealt with appropriately. In particular, there are two questions that must be addressed in relation to the issue of missing data “1.Is the missing data sufficient and non-random so as to cause problems in estimation or interpretation? 2. If the missing data must be remedied, what is the best approach?” (Hair et al., 2010, p. 659). As a general rule, if missing data is non-
random or more than 10 per cent of the data is missing, it is important to take action and try
and resolve the issues, because this may affect the generalisability of the results. Missing
data that is non-random is a common issue within survey research; non-random missing data
usually occurs because participants feel uncomfortable answering a particular question or fail
to answer a section of the survey.

Additionally, data can be either non-random, missing at random, or missing
completely at random. Missing at random suggests that the missing data from one survey
question may depend on another, but not on itself (Tabachnick & Fidell, 2007). For example,
if a researcher knows whether nurses were hospital trained or university educated and a
particular question is not answered several times and missing responses seem random, but are
higher for hospital trained nurses compared to those that were university trained, then the
missing data is biased towards hospital trained nurses and is said to be missing at random
(MAR). In addition, if the data is thought to be truly random, that is, it is not dependent or
associated with any other variable then the data is said to be missing completely at random
(MCAR). In summary, a missing data analysis provides an indication about the best method
to use for the particular type of missing data.

Examining whether data is missing at random, completely at random or non-random
can become more complex the larger a sample size becomes. However, it is becoming more
common that statistical data analysis programs incorporate missing data analysis features
(Hair et al., 2010). For example, SPSS has the ability to test if the data is MAR or MCAR.
Following the missing data analysis, an appropriate method of addressing the missing data
can be selected. There are four main approaches used within SEM literature: complete case
approach (referred to as list-wise deletion – the particular participant is deleted from the
results), all-available approach (pair-wise deletion – all non-missing data is used), imputation
techniques (only valid data, known replacement values, calculated replacement values, and MAR missing data process), and model based approaches (Hair et al., 2010; Schumacker & Lomax, 2004). Therefore, if the data is analysed as being MAR then only the MAR missing data process approach should be applied. However, if the missing data is analysed as being MCAR either the valid data or replacement values approaches can be used. The imputation approach to be used within this study to deal with the missing data will be selected and discussed further in chapter six, section 6.3.

5.9.3 Multivariate normality

Multivariate normality includes, amongst other factors, an examination into the distribution of the data. The normal distribution (normality) reflects a continuous probability distribution representing all possible values of a variable and the probability of the variables occurring (Hair et al., 2010). Normality can be examined graphically and statistically. Graphical normality can be visually checked by examining the histogram or normal probability plot for each of the measures individual items (survey questions). On the other hand, statistical tests for normality include measuring skewness and kurtosis, which can easily be measured using the descriptive statistics function in SPSS. A normal distribution for skewness and kurtosis is considered to be less than (+ or -) 1.96. It is prescribed that researchers always use both graphical and statistical tests when measuring whether the data is normally distributed (Kline, 2011; Schumacker & Lomax, 2004). Other similar tests to multivariate normality include tests of linearity and homoscedasticity.

5.9.4 Linearity and homoscedasticity

Linearity and homoscedasticity are two other methods that provide a representation of the distribution of the data. Linearity provides insight into whether the data falls within a
straight linear slope; that is, when the dependent variable changes, do the independent variable/s change constant with the dependent? A scatter-plot is a common method to examine linearity (Hair et al., 2010). On the other hand, homoscedasticity provides an examination into the variance of error terms, so data is said to be homoscedastic when the measurement error is depicted as holding constant over the range of predictor variables (Kline, 2011). In contrast, when the measurement error is said to vary amongst predictors, the data is referred to as heteroscedastic. Data can be checked for heteroscedasticity by developing a set of box-plots.

5.9.5 Multicollinearity

Similarly to a regression analysis, within SEM it is important to test for multicollinearity. Multicollinearity in SEM is the extent to which high correlations exist between the latent exogenous constructs (Kline, 2011). There are statistical procedures for estimating multicollinearity, including tolerance and the variation inflation factor (VIF) (Hair et al., 2010). The variation factor provides an indication about how much of the variance of a particular construct will be increased due to collinearity. This study will use the VIF to examine whether there are potentially any issues with multicollinearity.

5.9.6 Estimation technique

Maximum-likelihood estimation (MLE) is a common estimation method used within SEM; it is so common that it is often the default estimation method in most SEM programs (Byrne, 2010). MLE can be referred to as a statistical principle that maximises the probability that the observed data is representative of the sample being examined (Kline, 2011). MLE can be thought of as being similar to regression estimation techniques, although they differ because, unlike regression, MLE can estimate parameters simultaneously. In
addition, MLE is considered to be a complex process; in particular, it is so complex that it is considered iterative. To explain, a computer program is often used to develop an initial solution and then requires a large cycle of estimates to improve the solution (Tabachnick & Fidell, 2007). The improvement of the solutions means that covariances of the estimates become closer (similar) to the observed data. Furthermore and as previously discussed, it is suggested that MLE under the right conditions (moderate-to-high communalities and no under-identified latent variables) can provide valid and reliable results using small samples (Hair et al., 2010). To explain, over-identified models, more often than not, imply that communalities will be greater than .5 and .6, although this is dependent on an adequate sample size. As such, this study will apply the MLE method.

5.9.7 Model complexity

The more complex a model, the larger the sample size required. While there are no prescriptions within SEM literature about the complexity of a model and the sample size required, there are a number of factors that are thought to increase the complexity of the model (Hair et al., 2010). First, the more constructs a model has the more complex it is said to be, so an increase in parameters is reflected with an increase in complexity. Second, constructs with less than three observed (indicator) variables are thought to increase the sample size required and the complexity of measuring the model. Third, multi-group analysis increases overall model complexity and therefore the required sample size is greater within multi-group analyses when compared to single-groups. To summarise, the factors that indicate model complexity are important as they provide information for the researcher when determining what may be an adequate sample size.
5.9.8 **Common method variance**

This research uses cross-sectional data from a self-report survey. As such, it is important to check for common method variance before estimating the model. Common method variance is referred to as a variance in measurement that is caused by the method of measurement as opposed to the constructs being measured (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Specifically, where data suffers from a common method variance, it is thought that relationships within the model may be overstated. To test for common method variance, both Harman’s ex-post one-factor test and the single-method factor approach will be used (Podsakoff et al., 2003). To undertake Harman’s one-factor test, all items used within the study will be entered into an unrotated factor analysis to calculate the number of factors. If the results from the factor analysis indicate that a single factor explains the majority of the variance, then the data is said to suffer from a common method variance. To undertake the single-method factor test, all observed variables are loaded onto a hypothetical latent variable, as well as their respective latent factor. In this case, the model should provide a good-fit to the data and all parameter estimates that were significant in the hypothesised model should remain significant in the common latent factor model.

5.10 **Step 4: Assessing measurement model validity**

Step 4 includes an assessment of goodness-of-fit and parsimony along with construct validity (Hair et al., 2010). Once a model has been specified (step 2) and the study has been designed to produce empirical results (step 3), the measurement model is then ready to be tested for validity; so does the model fit the observed data? Particularly, the validity of the measurement model is dependent on the goodness-of-fit, as well as the validity of the construct (construct validity) (Hoyle, 1995; Kline, 2011; Schumacker & Lomax, 2004). At
this point, it is also important to test for unidimensionality and to examine the reliability of the constructs.

It is important to test whether the items in a construct are unidimensional, because this can highlight issues with cross-loadings. Unidimensionality of constructs suggests that the group of observed variables (indicators) are related to only one construct. Furthermore, because unidimensionality is considered to be an underlying factor of reliability, it is important to test for unidimensionality before examining reliability. Unidimensionality can be measured within the CFA process. First, a single-factor CFA model should be created for each scale, restricting observed variables to one particular construct. The observed variables should load highly onto the specified construct. To provide further justification of unidimensionality, it is important to test for the absence of correlated errors and that the goodness-of-fit (GFI) and comparative fit (CFI) measures meet the required value of .90 (Hair et al., 2010).

The reliability of a measure is an examination that tests whether the scale produces consistent results if measurement is repeated. A common method to examine reliability is the Cronbach alpha (Cronbach, 1951). However, an issue arises when using Cronbach alpha with SEM, because Cronbach alpha is measured assuming no measurement error. Considering that there is often some level of measurement error, Cronbach alpha is considered to at times underestimate reliability.

Therefore, this study will use composite reliability and the average variance extracted (AVE) to examine reliability. The composite reliability and the AVE provide measures of consistency and variance for the constructs. More specifically, composite reliability is a measure of the internal consistency of a construct and can be calculated by squaring the sum
of indicator loadings and the sum of the error variances for each construct. Composite reliability is acceptable at equal to or greater than 0.70 (Hair et al., 2010). The AVE, which takes into account measurement error, provides an examination into the mean variance for each construct. It is prescribed that an AVE of 0.50 or greater suggests adequate converge (Hair et al., 2010).

Goodness-of-fit can be examined using absolute indices, incremental fit indices, and parsimony fit indices (Hair et al., 2010). On the other hand, within SEM construct validity refers to the degree that a group of observed variables are good indicators of the latent variable they are intended to measure. Therefore, if the theoretical model provides a good fit to the observed data and there is a high level of construct validity, the structural model can then be specified. However, if the model does not fit the data, then the measurement model needs to be modified and re-tested before the structural model can be specified. As such, step 4 will be discussed using three main sections: overall fit, construct validity, and modifying (re-specifying) the measurement model. To test goodness-of-fit and model parsimony, a CFA can be used to determine a particular construct that is formed by a group of measures and whether or not the measures are a good indicator of the construct in question (Hair et al., 2010). CFA like exploratory factor analysis is often used as a data reduction technique, specifically aiming to reduce a large number of measures into a smaller set of valid indicators (Kline, 2011).

5.10.1 Overall (absolute) fit

The calculation of chi-square ($\chi^2$) is a primary measure examining goodness-of-fit and is an absolute fit index (measure of how well the proposed model fits the data). Additionally, chi-square can be calculated as the observed covariance matrix minus the estimated covariance matrix multiplied by the sample size minus one (Tabachnick & Fidell, 2007).
Therefore, chi-square = (sample size – 1) (observed covariance matrix – estimated covariance matrix). The chi-square statistic is referred to as an exact model of fit that is often used within SEM (Kline, 2011).

However, there are some limitations associated with the use of the chi-square statistic. One such limitation is chi-square’s sensitivity to sample size. In addition, within MLE, if the data is considered to be non-normal, the chi-square statistic may be inflated, which may lead to the rejection of a true model (type I error) (Hair et al., 2010). Another limitation associated with chi-square can be related to the complexity of the model being tested; for example, complex models will often have a larger chi-square than simpler models and therefore complexity may infer that a measurement model is assumed not to be valid (not a good fit). As a result, it is quite common to use a chi-square ratio, also known as a chi square difference test (χ²/df).

The χ²/df ratio is calculated by dividing the chi-square by the degrees of freedom (df). The degree of freedom is considered to be the amount of mathematical information available to examine the proposed model. Hair et al. (2010) suggest that a ratio of 3:1 (χ²:df) or smaller is associated with good fitting models, although this rule of thumb is said not to be accurate with large sample sizes (>750) or if the model being tested is complex. The goodness-of-fit rule of thumb also suggests that the chi-square will not be significant (> .05) in some well-fitting models. For example, if the difference between the chi-square and df are large and is statistically significant (< .05), this suggests that there is a significant difference and a poorer model-fit (Schumacker & Lomax, 2004). Therefore, better-fitting models will have a small χ²/df ratio and will not be statistically significant (> .05).
Additionally, other absolute fit indices include root mean square error of approximation (RMSEA), root mean residual (RMR), and standardised root mean residual (SRMR). The RMSEA is a popular approach that is used to overcome the issues associated with the $\chi^2$ measure of fit (rejecting models with large sample sizes) (Hair et al., 2010). As such, it is suggested that RMSEA is a better indicator of how well the proposed model fits the entire population, as opposed to the $\chi^2$ measure, which only fits the proposed model to the sample data (Kline, 2011). The general rules surrounding model fit suggest that RMSEA should be below .08 for a reasonable fit or below .05 for a good fit (Browne & Cudeck, 1993).

On the other hand, RMR and SRMR are derived from the residual that forms due to the measurement error. However, the residual alone only takes into account the covariances and as such is not an appropriate index for examining overall model fit (Hair et al., 2010). Therefore, the RMR and the SRMR are two indices that have been developed in response to the issue of examining overall model fit. The RMR reflects the square root of the mean of the squared residuals (an average of the residuals) (Kaplan, 2000). In addition, it is important to note that similar to a standardised residual the RMR only examines the scale of the covariances. In contrast, SRMR is most appropriate for comparing the fit between models. Although there is no rule of thumb, it is considered that a lower RMR and SRMR suggest a better fitting model, while higher values suggest a poorer fitting model (Hair et al., 2010). To provide a robust examination into absolute fit the following absolute fit indices will be used within this study: $\chi^2$/df, RMSEA, and SRMR.

5.10.2 Incremental fit

Incremental fit indices unlike absolute fit indices “assess how well the estimated model fits relative to some alternative baseline model” (Hair et al., 2010, p. 668). There are
three main incremental fit indices, including normed fit index (NFI), Tucker-Lewis index (TLI), and comparative fit index (CFI). The TLI and the CFI are more commonly used within practice, particularly when compared to the NFI (Schumacker & Lomax, 2004). For example, the TLI is similar to the NFI, but it examines the fit between the χ²/df ratio for a null model and the proposed model, where the NFI examines the fit between the χ² for a null model and the proposed model. The TLI is thought to account more accurately for model complexity than the NFI and as such is more widely used in practice. Additionally, the CFI is another alternative to the NFI, because it is considered to be far less sensitive to model complexity than the NFI. As a general rule of thumb, the TLI and the CFI should be above .95 for the model to be a good fit with the observed data or .90 for a reasonable fit (Hoyle, 2012). To summarise, the TLI and the CFI will be used as incremental fit indices within this study.

5.10.3 Parsimony fit

Parsimony fit indices can be used to derive information about a number of different models and suggest which model fits the best. This calculation is important, because it provides information about the model fit of each estimated path (coefficient) (Kaplan, 2000). The results provide a check to determine if the model has been over-fitted with the use of too many estimated paths (Hair et al., 2010; Kline, 2011; Schumacker & Lomax, 2004). Additionally, testing the parsimony of the model is a significant test, because the more parsimonious a model, the more accurate it will be for generalising to the population. A common method of examining parsimony is the parsimony normed fit index (PNFI). While there is no rule of thumb when examining PNFI, the highest PNFI suggests the best fitting model. This study will use the PNFI to examine parsimony fit of the full structural model.
5.10.4 **Construct validity**

The use of validated scales which were derived from prior research has previously been discussed (chapter four, section 4.6). However, it is also important to outline the relevance of construct validity to CFA. Construct validity is referred to as the extent to which research is accurate. One of the primary objectives of CFA is to assess the construct validity of a proposed measurement theory (Tabachnick & Fidell, 2007). Construct validity is the extent to which a set of measured items actually reflects the theoretical latent construct those items are designed to measure (Schumacker & Lomax, 2004). Evidence of construct validity provides confidence that the item measures taken from a sample represent the actual true score that exists in the population. Construct validity is made up of four components: convergent, discriminant, face and nomological validity (see Table 5.1) (Hair et al., 2010; Kline, 2011). Although content validity has already been discussed it is outlined within table 5.1 to ensure clarity when outlining the four components of construct validity.
Table 5.1  Examining construct validity

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rule of thumb</th>
<th>Outcome</th>
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| Convergent Validity | Factor loadings                                                               | ▪ Standardised loadings need to be statistically significant  
▪ should be > .5 and ideally ≥ .7  
▪ Standardised loadings of + or − 1.0 highlight issues with the item or the model   | Convergent validity provides verification that the scale items all possess a high proportion of variance and are considered to be reliable indicators of the construct.  
Average Variance-Extracted (AVE) equals the total of all squared multiple correlations divided by the number of items.  
Average Variance-Extracted (AVE) > .5 and ideally ≥ .7 |
| Composite reliability | ▪ > .7                                                                         |                                                                                                                                              |
| Discriminant validity | Combined AVE of any two variables compared to the squared multiple correlation (R²) between the variables | ▪ If the combined AVE of any two variables is greater than the squared correlation estimate between the variables, then there is no issue of discriminant validity |
| Face (Content) Validity | Subjective assessment of the scales and the concept in the form of ratings by experts and pre-tests with multiple samples. | ▪ Face/ content validity should be established before undertaking the CFA  
Discriminant validity provides a check to ensure that the scale items are different from other similar scales |
| Nomological validity | The researcher must identify whether the correlations between the variables are sensible | ▪ Correlation matrix and control variables can be used to assess nomological validity  
Determines whether the scale reflects that the hypothesised relationships are based on theory or prior research |

Source: developed from Hair et al. (2010) and Kline (2011)
5.10.5 Modifying the measurement model

There are a number of statistics that can be used from the CFA to provide direction when modifying a model. There is agreement within SEM literature about how to approach model modification (also referred to as model re-specification). For example, standardised loadings (path estimates), standardised residuals and modification indices can all be used as tools when modifying the measurement model (Hair et al., 2010; Kline, 2011; Schumacker & Lomax, 2004). Specifically, standardised loadings, residuals and modification index checks (rule of thumb) can be used to make decisions about deleting items and to highlight issues with unidimensionality (problems associated with cross loadings). However, the square multiple correlations (SMC) can also be useful, because SMCs indicate how much in common the item or variable has with the construct (Hair et al., 2010; Kline, 2011). To provide a clear understanding about how to modify a measurement model, the four diagnostic tools will be discussed in further detail.

The standardised loadings of each item on their underlying construct can be used to highlight items that may need to be deleted from the model. A similar rule of thumb to that used in convergent validity can be applied, that is, ideally the loadings should be equal to or greater than .7 (Hair et al., 2010). However, it is important that items are not deleted simply because of a low loading, but should also be based on other measures. More specifically, the standardised loadings should only be used to bring to the attention of the researcher items that may need to be removed (Kline, 2011). Standardised residuals can be used in conjunction with standardised loadings to determine items that may need to be deleted. In particular, large standardised residuals, for example, above 1.96 or -1.96 indicate that the covariance is not reproduced adequately by the hypothesised model (Schumacker & Lomax, 2004). Therefore, to improve
model fit additional parameters can be added (although this is not common when assessing the fit of the measurement model) or an item can be deleted from the scale (instrument).

SMCs, on the other hand, provide a measurement that can be used in conjunction with standardised residuals and loadings. Although within SEM texts SMCs are not discussed in relation to model re-specification or modification, it is accepted that low SMCs may imply that the item is a poor measure of the underlying construct (Hair et al., 2010; Hoyle, 1995; Kline, 2011; Schumacker & Lomax, 2004). There are a few rules of thumbs associated with SMCs. For example, SMCs below .2 indicate a very poor measure and provide a strong suggestion that the item should be deleted from the model. SMCs between .2 and .3 suggest that the item is a poor measure of the underlying construct. Therefore, if other measures suggest the item is a poor indicator, then it may be dropped from the model. In addition, SMC between .3 and .5 suggest the item is a weak indicator, but is adequate. Finally, SMCs above .5 provide indication that the item is a good measure of the underlying construct.

The final diagnostic tool to be discussed is the modification indices. A modification index is calculated for every non-free (fixed) parameter (Blunch, 2008). In particular, a modification index outlines how the chi-square will alter if that one element and only that element of the model; for example, what will happen to the chi-square if a particular path is added or deleted. It is suggested that a modification index of four or greater indicates that model fit could be improved (Hair et al., 2010). However, it is recommended to not modify a model based on the modification index alone. While modification indices provide an indication of misspecification, it is important that the addition or deletion of a path reflect theory or prior research.
5.11 Step 5: Specify the structural model

Step 5 includes a process where the measurement model is converted to a structural model. This step simply involves adding the paths from one construct to another to depict the hypothesised relationships (Hair et al., 2010). As such, the hypotheses proposed in chapter 3 provide an indication of the paths that need to be added to specify the structural model. More specifically, relationships are formed between the latent variables based on the hypotheses. The process begins with the measurement model, which is altered by adding the paths based on the hypotheses.

5.12 Step 6: Assessing the structural model

Step 6 includes testing the goodness-of-fit, significance, direction, and size of the parameter estimates for the structural model. This step involves assessing model fit following the specification of the structural model. Hair et al. (2010) recommend that both the measurement model and the structural model be measured simultaneously to examine the full structural model goodness-of-fit. The same measures of fit used to assess the measurement model can be applied when measuring the structural model. In addition, the model can be re-specified using the same three basic techniques applied when re-specifying the measurement model. Although it is important to note that the modification indices at this point may provide useful information regarding the specified or unspecified parameters. However, a parameter should not be added to the model based only on the modification index, but should also have some theoretical relevance.
5.13 Using SEM and PLS

As previously discussed, SEM is a suitable analytical tool for examining the hypotheses proposed in this study. As well, while there is literature to support that SEM can be used in particular situations with sample sizes between 100 and 200 (Hair et al., 2010; Kline, 2011). However, such literature is contested and as not been widely empirically tested. Therefore, as mentioned, to test the stability of the SEM results when using a sample size of 210, the data will be inserted into a PLS model. The addition of PLS as an analytical tool to this study is only used to confirm the SEM results, and will be discussed further in the following section.

5.14 Partial Least Squares

PLS is referred to as an alternative approach to SEM. PLS is a modelling technique that is described by some researchers as a type of SEM and as an approach similar to SEM by other researchers (Hair et al., 2011). In contrast to SEM, PLS focuses on explaining the variance of a construct/s as opposed to the covariance between constructs. Due to the fact that PLS provides an examination that maximises the explained variance, it is thought to be better suited to exploratory research. Hulland (1999) suggests that the best known modelling technique is LISERL or other SEM modelling software such as AMOS or MPlus. However, there are certain situations that make SEM not an appropriate technique or that may make the results derived from the SEM analysis unstable (Hair et al., 2010). In particular, like all modelling techniques PLS and SEM have both advantages and disadvantages, which make both techniques appropriate in some situations and not appropriate in others. To ensure clarity about the use of PLS the similarities and differences between SEM and PLS will now be discussed.
PLS is similar to SEM because it has the capability of simultaneously measuring a measurement and structural model, and can also examine all of the constructs simultaneously, as opposed to most linear modelling techniques. PLS is a latent modelling technique that can be used to estimate path coefficients in causal models (Rodwell & Teo, 2008). Similar to SEM, PLS examines both a measurement and a structural model. However, within PLS the measurement model is referred to as the ‘outer-model’, while the structural model is referred to as the ‘inner-model’ (Haenlein & Kaplan, 2004). PLS still requires the application of either an EFA or a CFA before the structural model parameters can be estimated. Although with this said, because PLS is better suited to exploratory research, it is common to use an EFA as opposed to a CFA.

As suggested, there are many differences between PLS and SEM, which make PLS more suitable in particular conditions. For example, a key difference between PLS and SEM manifests because PLS is estimated with a regression based technique while SEM is commonly estimated using a covariance based technique (Hair et al., 2010). Therefore, because SEM is estimated differently to PLS, it is expected that while the results from each method will be similar, they will not be identical. Unlike SEM, PLS also has the capability to use and estimate both reflective and formative scales, where SEM is thought to be better suited to the use of reflective scales (Teo, Le Clerc, & Galang, 2011). PLS can also be used to estimate models that consist predominantly of one and two item scales/ measures, where SEM may report the model to be under-identified and not be able to estimate the model (Hulland, 1999; Vinzi, Chin, Henseler, & Wang, 2010). Additionally, in contrast to SEM, PLS does not require the data to be normally distributed and can be used with both small and large samples sizes (Hair et al., 2010). As
previously discussed, SEM results can be unstable when used with small sample sizes and can become too sensitive when used with large samples (>400), almost always suggesting a poor fit of the measurement model.

Moreover, while there are many similarities between SEM and PLS, the approach to estimating a PLS model is somewhat different to the process in AMOS. First, it is important to outline the software that will be used to analyse the PLS model; as such, this study will use SmartPLS v.2 (Ringle, Wende & Will, 2005). As previously mentioned, it is common to use an EFA within exploratory studies. However, because this study is confirmatory and is using PLS to confirm the SEM results, the factor analysis conducted will be confirmatory. Following the CFA and the specification of the measurement and structural models, the paths can be estimated (model can be analysed) (Hair et al., 2010). The path estimates are standardised regression coefficients, which in SmartPLS can be measured using the PLS algorithm (Teo et al., 2011). The significance of each path (hypothesised parameter) in PLS can only be calculated using a bootstrap procedure (Ringle, Wende, & Will, 2005).

Bootstrapping is conducted to ensure confidence that if a relationship is considered significant, this is not specific only to the sample. That is, bootstrapping applies repeated random samples from the original data set to examine significance, using a specified number of samples. This study will use a bootstrap sample of 500. The path coefficients are significant at 95 per cent if the bootstrap result is ≥ 1.96, significant at 99 per cent if bootstrap result is ≥ 2.58, and significant at 99.9 per cent if bootstrap result is ≥ 3.29 (Chen & Lin, 2009; Hair et al., 2011; Hammeci, Van Riel, & Sasovova, 2011).
Recently Tenenhaus, Vinzi, Chatelin, and Lauro (2005) devised a calculation for a global goodness-of-fit index for PLS (goodness-of-fit small = 0.1, goodness-of-fit medium = 0.25, and goodness-of-fit large = 0.36). The global goodness-of-fit index is calculated by first multiplying the average $R^2$ by the average communality and then calculating the square root of the result. On the other hand, predictive stability of the model can be determined by calculation of the blindfolding procedure. This process is referred to as Stone-Geisser Q-square test for predictive relevance (Chin, 1998, 2010a; Hair et al., 2011). Chin (2010a) recommended that the communality and redundancy Q-square indices must be greater than zero, for the model to have predictive relevance. The blindfolding procedure is a function in SmartPLS 2.0 and predominantly includes calculating two analyses with 10 and 25 omission distances.

Similar to SEM, PLS also requires that the data used to test the model be both reliable and valid. Furthermore, like SEM, PLS uses factor loadings, AVE and composite reliability to measure reliability and validity. Similar to Cronbach’s alpha, composite reliability should be at least 0.7 (Hair et al., 2010). First, as within SEM, to determine if the construct is valid (construct validity) both convergent and discriminant validity should be analysed. In particular, the AVE should be equal to or greater than .5 (Chin, 2010b) to demonstrate there are no issues with convergent validity. On the other hand, to establish discriminant validity items should load appropriately onto their respective factors, that is, should have high loadings (.3 or greater) and there should be an absence of cross-loadings. Establishing discriminant validity also requires the square root of the AVE be at least 0.5 (Fornell & Larcker, 1981). Furthermore, the square root of the combined AVE for each construct should be greater than the correlation estimate between the constructs. If the square root of the AVE is greater than any corresponding correlations, this
demonstrates that the construct shares more variance with its indicators than it does with other constructs. Following the establishment of reliability and validity the structural model can be estimated using the PLS algorithm and the bootstrapping procedure.

5.15 Conclusion

This chapter explained the process that will be used to statistically analyse the measurement and structural models. In particular, the statistical data analysis methods and techniques were discussed. This discussion included an explanation and justification of the two-step, six-stage SEM process. Additionally, the discussion included an outline of how the measurement model would be specified and tested. Moreover, the discussion of the SEM process also provided an explanation of how the structural model would be specified and estimated. The discussion about SEM was followed by an explanation of PLS and its application to this study.

This chapter also provided an explanation as to why SEM offers an appropriate set of analytical procedures for this study. For example, SEM allows for the confirmation of a model, so because this study is not exploratory in nature and has used pre-validated instruments, a confirmatory method is suitable. The confirmatory nature of this study also justifies why a covariance-based approach to SEM using AMOS is a more appropriate method to be used in this study when compared to a regression-based approach, such as PLS.

As well, SEM is suitable for more complex models when compared to, for example, hierarchical regressions because the entire model (including all the hypotheses) can be simultaneously tested. This simultaneous testing is important and can be explained by the
examination of mediation model. For example, when testing a simple mediation model the results may indicate that the addition of the mediating variable leaves the original relationship between two variables no longer significant (suggesting that the mediating variable completely mediates the relationship). Therefore, with more complex models that have a number of intervening variables, such as the one being tested in this thesis, simultaneous testing provides one way of ensuring that the impact of all relationships are taken into account. One alternative, such as using a hierarchical regression does not test all variables and relationships at once and may possibly under or over-estimate a number of relationships and their significance.

However, within this chapter it was also highlighted that SEM is known to require large sample sizes. Hence, although there is literature to support that under certain conditions SEM can provide stable results using smaller sample sizes, there was still some concern about the stability of the results in this study. PLS, on the other hand, is considered not to suffer the same issues regarding sample size as SEM, so to ensure the stability of the results PLS will also be used to examine the conceptual model proposed to be examined in this thesis. If the results from the PLS analysis are similar to the results from the SEM analysis, this indicates the stability of the SEM results and provides support to the proposition by Hair et al. (2010) that SEM can be conducted successfully using smaller samples sizes if a number of conditions are met. Following a discussion about the analytical procedures, the next chapter will report the results of the data analysis.
6.0 CHAPTER SIX: RESULTS

6.1 Introduction

This chapter uses analytical techniques to pre-test the survey instrument; test for normality, linearity, homoscedasticity, unidimensionality and multicollinearity; as well as estimate the measurement and structural models. As previously mentioned, the estimated model will also be examined using PLS, that is, the same model will be analysed using SEM and PLS. The chapter begins with a pre-test using an exploratory factor analysis to provide a preliminary analysis about the suitability of the survey questions for measuring their associated scale. The pre-test is followed by an examination that explores the distribution of the data, such an analysis is vital because SEM requires that data be normally distributed, linear and homoscedastic. Once the data has been explored and any distribution issues have been rectified, the demographic questions will then be analysed. The next step before doing any further calculations is to conduct the confirmatory factor analysis, assessing the measurement model. The next step following the factor analysis is to calculate means, standard deviations, and correlations. The structural model is also assessed and estimated following the factor analysis. Following the SEM analysis the model is then re-analysed and confirmed using PLS.

6.2 Defining the individual constructs (step 1) - Pre-test

The pre-test revealed the factor loadings, in most cases, depict that each survey question loaded appropriately onto their respective construct. However, there were some issues with factor loadings, which are depicted as a dash in table 6.1. The issues with factor loadings can be attributed to the factor not loading onto the variable or due to cross-loadings (Hair et al., 2010).
From the pre-test there were no issues with cross-loadings, although there were a number of variables that did not load onto their respective construct (component). However, because the pre-test is only designed to provide a preliminary indication of the suitability of survey items, no items were removed from the study based on the poor factor loadings from the pre-test. Overall, the results from the factor analysis suggest that the survey questions selected are appropriate for examining their respective variables.

### Table 6.1 Pre-test factor loadings

<table>
<thead>
<tr>
<th>Variable</th>
<th>Question</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Affective organisational commitment</strong></td>
<td>I would be very happy to spend the rest of my career with this hospital</td>
<td>.442</td>
</tr>
<tr>
<td></td>
<td>This hospital has a great deal of personal meaning for me</td>
<td>.756</td>
</tr>
<tr>
<td></td>
<td>I enjoy discussing my hospital with people outside it</td>
<td>.708</td>
</tr>
<tr>
<td></td>
<td>I do not feel ‘emotionally attached’ to this hospital</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>I feel a strong sense of belonging to this hospital</td>
<td>.347</td>
</tr>
<tr>
<td></td>
<td>I feel strong ties with this hospital</td>
<td>.932</td>
</tr>
<tr>
<td><strong>Innovative behaviour</strong></td>
<td>I Create new ideas for difficult issues</td>
<td>.857</td>
</tr>
<tr>
<td></td>
<td>I Search out new working methods, techniques, or instruments</td>
<td>.888</td>
</tr>
<tr>
<td></td>
<td>I Generate original solutions for problems</td>
<td>.732</td>
</tr>
<tr>
<td></td>
<td>I Mobilise support for innovative ideas and solutions</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>I Encourage important organisational members to be enthusiastic about innovative ideas and solutions</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>I transform innovative ideas into useful applications</td>
<td>.547</td>
</tr>
<tr>
<td><strong>Leader-Member Exchange (LMX)</strong></td>
<td>My supervisor is satisfied with my work</td>
<td>.913</td>
</tr>
<tr>
<td></td>
<td>My supervisor understands my work problems and needs</td>
<td>.850</td>
</tr>
<tr>
<td></td>
<td>My supervisor knows how good I am at my job</td>
<td>.967</td>
</tr>
<tr>
<td></td>
<td>My supervisor is willing to use her/his power to help me solve work problems</td>
<td>.946</td>
</tr>
<tr>
<td>Perceived Organisational Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>I have a good working relationship with my supervisor</td>
<td>.844</td>
<td></td>
</tr>
<tr>
<td>My supervisor is willing to help me at work when I really need it</td>
<td>.942</td>
<td></td>
</tr>
<tr>
<td>I have enough confidence in my supervisor that I would defend and justify his/her decision if he/she were not present to do so</td>
<td>.936</td>
<td></td>
</tr>
<tr>
<td>This hospital cares about my opinion</td>
<td>.714</td>
<td></td>
</tr>
<tr>
<td>This hospital really cares about my well being</td>
<td>.524</td>
<td></td>
</tr>
<tr>
<td>This hospital strongly considers my goals and values</td>
<td>.592</td>
<td></td>
</tr>
<tr>
<td>Help is available from this organisation when I have a problem</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>This hospital would forgive an honest mistake on my part</td>
<td>.581</td>
<td></td>
</tr>
<tr>
<td>If given the opportunity, this organisation would take advantage of me</td>
<td>.617</td>
<td></td>
</tr>
<tr>
<td>This hospital shows very little concern for me</td>
<td>.614</td>
<td></td>
</tr>
<tr>
<td>This hospital is willing to help me if I need a special favour</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Procedural Justice</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The procedures used by this hospital in their decision-making processes are fair</td>
<td>.756</td>
</tr>
<tr>
<td>The procedures used in negotiating, stipulating, and codifying contracts are fair</td>
<td>.802</td>
</tr>
<tr>
<td>The procedures used in formulating and structuring the organisation are fair</td>
<td>.523</td>
</tr>
<tr>
<td>The procedures used in planning, organising, and managing the hospital are fair</td>
<td>.884</td>
</tr>
<tr>
<td>The procedures used to govern knowledge/resource sharing (i.e., knowledge transfer) is fair</td>
<td>.863</td>
</tr>
<tr>
<td>The procedures of executing strategic decisions are clearly defined and performed consistently</td>
<td>.783</td>
</tr>
<tr>
<td>The execution of the employer-employee contract is administered and monitored fairly</td>
<td>.407</td>
</tr>
<tr>
<td>The implementation of strategic decisions are administered and monitored fairly</td>
<td>.444</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interactional Justice</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>During daily interactions my colleagues are honest in dealing with me</td>
<td>.924</td>
</tr>
<tr>
<td>During daily interactions, my colleagues respect the importance of interpersonal relations</td>
<td>.867</td>
</tr>
<tr>
<td>Whenever conflict arises between any of my colleagues and myself, we always seek complete understanding of each other’s position and opinion in the first place</td>
<td>.867</td>
</tr>
<tr>
<td>Scale</td>
<td>Statement</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Innovative organisational culture</td>
<td>This hospital promotes a willingness to experiment</td>
</tr>
<tr>
<td></td>
<td>In this hospital I am not being constrained by many rules other than the</td>
</tr>
<tr>
<td></td>
<td>rules of being a professional</td>
</tr>
<tr>
<td></td>
<td>This hospital provides me support, information, training and knowledge</td>
</tr>
<tr>
<td></td>
<td>to be innovative</td>
</tr>
<tr>
<td></td>
<td>This hospital supports and facilitates innovation</td>
</tr>
<tr>
<td></td>
<td>This hospital is tolerant of risk taking</td>
</tr>
<tr>
<td>Tie Strength</td>
<td>The working relationships with my colleagues and myself are close</td>
</tr>
<tr>
<td></td>
<td>I communicate often with my colleagues</td>
</tr>
<tr>
<td></td>
<td>I typically interact frequently with most of the colleagues in my ward</td>
</tr>
</tbody>
</table>

6.3 **Specifying the measurement model and designing the study to produce empirical results (step 2 and 3)**

Due to the fact that this study used pre-validated survey items, there is no need to develop and specify the measurement model (step 2), because this step has already been completed by previous researchers. Following the pre-test and final editing of the survey instrument, survey data was collected from the three hospitals. Following the data collection, the SEM analytical procedures begin with a missing data analysis. It is important to appropriately deal with missing data because AMOS will generally not run with missing data (Arbuckle, 2010). In addition, it is important to deal with missing data properly; otherwise, there is a risk of analysing biased data. Analysing biased data may cause the parameters to be over or under estimated (Byrne, 2010;
The missing data approach discussed in chapter five, section 5.8.2, will be applied to determine a suitable course of action to deal with the missing data.

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-square</td>
<td>416.74</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>389</td>
</tr>
<tr>
<td>Significance</td>
<td>.160</td>
</tr>
</tbody>
</table>

The results from the missing values data analysis reflect a very small amount of missing data with 12 responses missing from the 210 useable returned surveys. The results from Little’s MCAR test indicate that the data is missing completely at random (Table 6.2). Since the data has been found to be missing completely at random, any of the imputation methods are appropriate (Hair et al., 2010). The mean substitution method will be applied because it is one of the most widely used methods for dealing with data that is MCAR. The mean substitution replaces any missing values within a sample with the mean value calculated from the total of responses for the particular question.

### 6.3.1 Testing for multicollinearity, normality, homoscedasticity and linearity

To further ensure the study is designed to produce empirical results, the data collected was then tested for multicollinearity, normality, homoscedasticity and linearity. As mentioned in Chapter five, section 5.8.5, the VIF was used to test for issues with multicollinearity. The
highest VIF related to the exogenous latent constructs in this study was 2.63, which was below the problematic values proposed by Hair et al. (2010). As such, the results from the VIF indicate no issues with multicollinearity in this study. All of the data appeared to be normally distributed except for two items from the tie strength scale. At this stage, it is important to rectify any non-normal distribution, so the two tie strength items were transformed following procedures prescribed by Hair et al. (2010). The procedure simply involved eliminating the two outliers. The statistical tests for normality were then repeated, the histograms and probability plots revealed no major deviation from normality. Additionally, Skewness and kurtosis were within an acceptable range, with skewness values ranged from -1.52 to 0.12 and kurtosis values ranged from -1.13 to 1.83.

A requirement of SEM prescribes that all paths being examined be linear (Bentler & Chou, 1987). Nonlinearity may result in an underestimation of the strength of the relationships between variables (Hair et al., 2010). It is common for non-linearity to occur in models employing categorical variables because the linear and continuous nature of the variables is unclear. The variables to be examined within this study all meet the conditions for linearity (confirmed by a review of linear plots) and continuity of variables.

Another important assumption of SEM and other multivariate techniques prescribes that there should be an equal level of variance of endogenous variables across the exogenous variables. If the variance is unequal the relationship is said to be heteroscedastic. The issue with heteroscedastic data is that it may influence predictions, causing them to be better at some levels of the exogenous variable and worse in others. An examination into heteroscedasticity included a review of several box plots; the review revealed that the data was homoscedastic. Box plots
were an appropriate tool to use when checking to ensure the data is homoscedastic, because the length of the box and whiskers provide an easy to follow depiction of the variation within each group (Hair et al., 2010).

6.3.2 Common method variance

The factor analysis resulted in nine eigenvalues that were greater than one, explaining 59 per cent of the variance. Additionally, the majority of the variance was not explained by one factor (Podsakoff et al., 2003). Hence, using the analysis approaches suggested by Podsakoff et al. (2003) common method variance does not appear to be an issue in this study. The test of the common latent factor will be discussed in section 6.8.

6.4 Assessing measurement model validity (step 4)

As previously mentioned, a CFA can be used to determine if a group of measures are good indicators for a particular construct/ scale (Hair et al., 2010). While the items have been pre-validated, it is still important to establish measurement model validity before specifying the structural model. The first step to assessing measurement model validity is to establish unidimensionality and reliability. The results from this study provide support for the unidimensionality of all the scales, because the CFI and GFI for each construct/ scale were above the minimum 0.90 and there was an absence of correlated errors (Anderson & Gerbing, 1988). All of the scales met the cut-off requirements of 0.7 for composite reliability (Byrne, 2010; Hair et al., 2010), which will be discussed further in the individual assessments for each scale.

Each scale will now be assessed for model fit using absolute, incremental and parsimony fit indexes; that is, does the proposed measurement model fit the observed data? As earlier
discussed, assessing measurement model validity also requires that construct validity be established. However, only convergent and discriminant validity will be established in this section. To explain, content and nomological validity have already been established by using pre-validated scales, by pre-testing the survey items and establishing the constructs correlate with one another. To establish convergent validity, referring back to table 5.1, factor loadings should exceed 0.70, the AVE should be a minimum of 0.5 and the composite reliability should be greater than 0.7 (Hair et al., 2010). To establish discriminant validity, the combined AVE of any two variables should be greater than squared correlation estimate between the two variables. Discriminant validity will be examined by combining all of the hypothesised paths (see table 6.14).

6.4.1 Discriminant validity

Discriminant validity was examined using the process previously outlined in chapter five, table 5.1 as prescribed by Hair et al. (2010). Table 6.3 depicts the combined variance of each construct pair and the square of the correlation estimate. If the square of the correlation estimate exceeds the combined variance extracted this implies an issue with discriminant validity. The results outlined below suggest there are no issues with discriminant validity for any of the hypothesised construct pairs.

<table>
<thead>
<tr>
<th>Construct pair</th>
<th>Combined Variance extracted</th>
<th>Square of the correlation estimate</th>
<th>Discriminant validity confirmed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovative behaviour &amp; Affective organisational commitment</td>
<td>.704</td>
<td>.055</td>
<td>✓</td>
</tr>
<tr>
<td>Innovative behaviour &amp; POS</td>
<td>.749</td>
<td>.038</td>
<td>✓</td>
</tr>
<tr>
<td>Innovative behaviour &amp; LMX</td>
<td>.760</td>
<td>.000</td>
<td>✓</td>
</tr>
</tbody>
</table>
Innovative behaviour & Innovative organisational culture  
Innovative behaviour & Procedural justice  
Innovative behaviour & Interactional justice  
Innovative behaviour & Tie strength  
Affective organisational commitment & POS  
Affective organisational commitment & LMX  
Affective organisational commitment & Procedural justice  
Affective organisational commitment & Interactional justice  
Affective organisational commitment & Tie strength  
Affective organisational commitment & Innovative organisational culture  
LMX & Interactional justice  
POS & Procedural justice  
POS & Interactional justice  
POS & Tie strength  
POS & Innovative organisational culture  
POS & LMX  

### 6.4.2 Innovative behaviour

The results from the factor analysis, depicted in table 6.4, outline no issues with convergent validity and suggest a good model-fit. An examination of the six-item measure of innovative behaviour found there to be appropriate parameter estimates, which provides an initial indication of convergent validity. This is evident by standardised factor loadings meeting the required 0.70 and the absence of negative values (see appendix seven). Also standard errors were neither markedly large nor small.

To further test convergent validity the AVE is calculated and depicts that 66.9 per cent of the variance is explained, which exceeds the required 50 per cent (Fornell & Larcker, 1981).
The composite reliability of .826 exceeded the required .70 (Hair et al., 2010). As such, there were no issues with convergent validity and the results depicted good fit across all fit indexes.

### Table 6.4  CFA results for innovative behaviour scale

<table>
<thead>
<tr>
<th>Fit index</th>
<th>Results</th>
<th>Good fit rules-of-thumb</th>
<th>Was good fit achieved?</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$</td>
<td>14.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>df</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>.102</td>
<td>$&gt; .05$</td>
<td>✓</td>
</tr>
<tr>
<td>$\chi^2$/df</td>
<td>1.63</td>
<td>$\leq 3$</td>
<td>✓</td>
</tr>
<tr>
<td>SRMR</td>
<td>.0329</td>
<td>$\leq .05$</td>
<td>✓</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.054</td>
<td>$\leq .08$</td>
<td>✓</td>
</tr>
<tr>
<td>GFI</td>
<td>.976</td>
<td>$\geq .9$</td>
<td>✓</td>
</tr>
<tr>
<td>CFI</td>
<td>.985</td>
<td>$\geq .9$</td>
<td>✓</td>
</tr>
<tr>
<td>TLI</td>
<td>.976</td>
<td>$\geq .9$</td>
<td>✓</td>
</tr>
<tr>
<td>Composite</td>
<td>.826</td>
<td>$\geq .70$</td>
<td>✓</td>
</tr>
<tr>
<td>reliability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average variance extracted</td>
<td>.668</td>
<td>$\geq .50$</td>
<td>✓</td>
</tr>
</tbody>
</table>

### 6.4.3 Affective organisational commitment

The results from the factor analysis, depicted in table 6.5, outline that there was an appropriate level of convergent validity and suggest a good fit for model 2. However, model 1 only provided a reasonable fit. To explain, an examination of the initial six-item measure of affective organisational commitment (see appendix seven) found there to be appropriate parameter estimates. This is evident by standardised factor loadings exceeding 0.70, except for one question which was 0.12 (I do not feel ‘emotionally attached’ to this hospital).

In addition to the factor loadings, standardised regression weights (.083) and the square multiple correlations (.007) indicate that the question ‘I do not feel ‘emotionally attached’ to this hospital’ is not an adequate item and therefore may be omitted as an observed variable. An
explanation for the item not being a good reflection of the underlying construct may be because
the question was negatively worded. Even though the item was reverse-coded it still did not
provide an appropriate reflection of the underlying construct. Following the question’s removal,
model fit was re-examined (see table 6.6, model 2). The results from the re-specified
measurement model suggest an overall improvement in model-fit (model 2); for example, the p
value was no longer significant and the RMSEA was improved.

To further test convergent validity, the AVE is calculated and depicts that 74.1 per cent
of the variance is explained by model 2, which exceeds the required 50 per cent (Fornell &
Larcker, 1981). The composite reliability of .845 exceeded the required .70 (Hair et al., 2010).
In summary, the confirmatory factor analysis reported in table 6.5 outlines a good model-fit.

<table>
<thead>
<tr>
<th>Table 6.5</th>
<th>CFA results for affective organisational commitment scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fit index</td>
<td>Model 1</td>
</tr>
<tr>
<td>χ²</td>
<td>17</td>
</tr>
<tr>
<td>df</td>
<td>9</td>
</tr>
<tr>
<td>P</td>
<td>.049</td>
</tr>
<tr>
<td>χ²/df</td>
<td>1.889</td>
</tr>
<tr>
<td>SRMR</td>
<td>.0329</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.065</td>
</tr>
<tr>
<td>GFI</td>
<td>.974</td>
</tr>
<tr>
<td>CFI</td>
<td>.984</td>
</tr>
<tr>
<td>TLI</td>
<td>.973</td>
</tr>
<tr>
<td>Composite reliability</td>
<td>.754</td>
</tr>
<tr>
<td>Average variance extracted</td>
<td>.741</td>
</tr>
</tbody>
</table>

* Model adopted
6.4.4 Leader-member exchange

The results from the factor analysis, depicted in table 6.6, outline some issues with convergent validity and model fit for model 1. Model 1 included a seven-item scale, the highlighted issues include a significant chi-square, high RMSEA and a composite reliability below the cut-off of 0.7 (Hair et al., 2010). In addition, the first LMX question ‘my supervisor is satisfied with my work’ had a low factor loading. As a result, the first question was removed to create model 2, which provided a much better fit to the data. An examination of the six-item measure of LMX found there to be appropriate parameter estimates. This is evident by standardised factor loadings exceeding 0.70 and the absence of negative values (see appendix seven).

To further test convergent validity the AVE is calculated and depicts that 85.1 per cent of the variance is explained, which exceeds the required 50 per cent (Fornell & Larcker, 1981). The composite reliability of .941 exceeded the required .70 (Hair et al., 2010). Therefore, convergent validity is established and the CFA reported in table 6.6 outlines that a good level of model-fit was achieved.
### Table 6.6 CFA results for leader-member exchange scale

<table>
<thead>
<tr>
<th>Fit index</th>
<th>Model 1</th>
<th>Model 2&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Good fit rules-of-thumb</th>
<th>Was good fit achieved?</th>
</tr>
</thead>
<tbody>
<tr>
<td>χ²</td>
<td>39.4</td>
<td>15.3</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>df</td>
<td>14</td>
<td>9</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>P</td>
<td>.000</td>
<td>.083</td>
<td>&gt; .05</td>
<td>✓</td>
</tr>
<tr>
<td>χ²/df</td>
<td>2.81</td>
<td>1.7</td>
<td>≤ 3</td>
<td>✓</td>
</tr>
<tr>
<td>SRMR</td>
<td>.0163</td>
<td>.05</td>
<td>≤ .05</td>
<td>✓</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.093</td>
<td>.058</td>
<td>≤ .08</td>
<td>✓</td>
</tr>
<tr>
<td>GFI</td>
<td>.953</td>
<td>.977</td>
<td>≥ .9</td>
<td>✓</td>
</tr>
<tr>
<td>CFI</td>
<td>.980</td>
<td>.994</td>
<td>≥ .9</td>
<td>✓</td>
</tr>
<tr>
<td>TLI</td>
<td>.969</td>
<td>.990</td>
<td>≥ .9</td>
<td>✓</td>
</tr>
<tr>
<td>Composite reliability</td>
<td>.652</td>
<td>.941</td>
<td>≥ .70</td>
<td>✓</td>
</tr>
<tr>
<td>Average variance extracted</td>
<td>.851</td>
<td>≥ .50</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

<sup>a</sup> Model adopted

### 6.4.5 Perceived organisational support

The results from the factor analysis, depicted in table 6.7, outline no issues with convergent validity and suggest a reasonable model-fit. An examination of the eight-item measure of POS found there to be appropriate parameter estimates. This is evident by standardised factor loadings exceeding 0.70, except for two questions highlighted in appendix seven and the absence of negative values.

The two highlighted items ‘if given the opportunity, this organisation would take advantage of me’ and ‘this hospital shows very little concern for me’ were removed because of a poor response. The poor factor loadings have highlighted a problem with the reverse coded survey questions. As such, this pattern provides support for the items to be omitted. The inclusion of negatively worded items has been found to be problematic in previous studies (Fenton-O’Creevy, Winfrow, Lydka, & Morris, 2002; Peccei & Guest, 1993). Considering that other studies have been confronted with similar issues, the problem may not be manifesting from
the respondent, but scale itself. A possible explanation for this anomaly might be derived by the fact that many scales were designed before CFA became popular. To explain, there is no doubt that when attempting to confirm a factor structure, the CFA process is a robust approach. Therefore, it may be that the inclusion of negatively worded items is not suitable in some structural equation models.

Further testing convergent validity, the AVE depicts that 82.9 per cent of the variance is explained, which exceeds the required 50 per cent (Fornell & Larcker, 1981). The composite reliability of .931 exceeded the required .70 (Hair et al., 2010). Therefore, convergent validity is established and the confirmatory factor analysis reported in table 6.7 outlines a good model-fit.

<table>
<thead>
<tr>
<th>Table 6.7</th>
<th>CFA results for perceived organisational support scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fit index</td>
<td>Results</td>
</tr>
<tr>
<td>χ²</td>
<td>12.5</td>
</tr>
<tr>
<td>df</td>
<td>9</td>
</tr>
<tr>
<td>χ²/df</td>
<td>.185</td>
</tr>
<tr>
<td>P</td>
<td>.0223</td>
</tr>
<tr>
<td>SRMR</td>
<td>.043</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.997</td>
</tr>
<tr>
<td>GFI</td>
<td>.995</td>
</tr>
<tr>
<td>CFI</td>
<td>.931</td>
</tr>
<tr>
<td>TLI</td>
<td>.829</td>
</tr>
</tbody>
</table>

6.4.6 Procedural justice

The results from the factor analysis, depicted in table 6.8, outline some issues with convergent validity and model fit for model 1. Model 1 included an eight-item scale of procedural justice; the issues with this particular scale have been highlighted in Table 6.9. Two
questions did load appropriately onto the procedural justice construct (‘The procedures used in planning, organising and managing the hospital are fair’ and ‘The procedures of executing strategic decisions are clearly defined and performed consistently’), indicating a problem with the items or the entire model. Although the question ‘The implementation of strategic decisions are administrated and monitored fairly’ loaded highly onto the procedural justice construct, the result from the SRC (4.65) is greater than 1.96, indicating the item may be removed from the scale. As a result, the three questions were removed to create model 2, a five-item scale that was more parsimonious and which provided a much better fit to the data. An examination of the five-item scale measuring procedural justice found there to be appropriate parameter estimates. This is evident by standardised factor loadings exceeding 0.70 and the absence of negative values (see appendix seven).

To further test convergent validity the AVE is calculated and depicts that 76 per cent of the variance is explained, which exceeds the required 50 per cent (Fornell & Larcker, 1981). The composite reliability of .871 exceeded the required .70 (Hair et al., 2010). Therefore, convergent validity can be established and the CFA reported in table 6.8 outlines that good fit was achieved.
Table 6.8  CFA results for procedural justice scale

<table>
<thead>
<tr>
<th>Fit index</th>
<th>Model 1</th>
<th>Model 2&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Good fit rules-of-thumb</th>
<th>Was good achieved?</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \chi^2 )</td>
<td>281.2</td>
<td>9.9</td>
<td>&gt; .05</td>
<td>✔</td>
</tr>
<tr>
<td>df</td>
<td>20</td>
<td>5</td>
<td>≤ 3</td>
<td>✔</td>
</tr>
<tr>
<td>P</td>
<td>.000</td>
<td>.078</td>
<td>≤ .05</td>
<td>✔</td>
</tr>
<tr>
<td>( \chi^2/df )</td>
<td>14.059</td>
<td>1.978</td>
<td>≤ 3</td>
<td>✔</td>
</tr>
<tr>
<td>SRMR</td>
<td>≤ .05</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RMSEA</td>
<td>.249</td>
<td>.068</td>
<td>≤ .08</td>
<td>✔</td>
</tr>
<tr>
<td>GFI</td>
<td>.760</td>
<td>.982</td>
<td>≥ .9</td>
<td>✔</td>
</tr>
<tr>
<td>CFI</td>
<td>.797</td>
<td>.991</td>
<td>≥ .9</td>
<td>✔</td>
</tr>
<tr>
<td>TLI</td>
<td>.716</td>
<td>.981</td>
<td>≥ .9</td>
<td>✔</td>
</tr>
<tr>
<td>Composite reliability</td>
<td>.923</td>
<td>.871</td>
<td>≥ .70</td>
<td>✔</td>
</tr>
<tr>
<td>Average variance extracted</td>
<td>.760</td>
<td>≥ .50</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Model adopted

6.4.7 Interactional justice

The results from the factor analysis, depicted in table 6.9, outline some issues with convergent validity and model fit within model 1. Model 1 included a six-item scale; the issues have been highlighted in table 6.9 and include a significant p value, high RMSEA and high chi-square ratio (\( \chi^2/df \)). In addition, one question did load appropriately onto the interactional justice construct ‘In the process of making strategic decisions relating to organisational operations, my input is always respected’ had a factor loading below 0.7 (see appendix seven). Also the result from the squared residual covariance was greater than 1.96, indicating the item may be removed from the scale. As a result, one question was removed to create model 2, a five-item scale, which provided a much better fit to the data. An examination of the five-item scale measuring interactional justice found there to be appropriate parameter estimates. This is evident by standardised factor loadings exceeding 0.70 and the absence of negative values (see appendix seven).
To further test convergent validity the AVE is calculated and depicts that 80.3 per cent of the variance is explained, which exceeds the required 50 per cent (Fornell & Larcker, 1981). The composite reliability of .903 exceeded the required .70 (Hair et al., 2010). Therefore, convergent validity is established and the CFA reported in table 6.9 outlines a good model-fit.

<table>
<thead>
<tr>
<th>Table 6.9</th>
<th>CFA results for interactional justice scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fit index</td>
<td>Model 1</td>
</tr>
<tr>
<td>χ²</td>
<td>58</td>
</tr>
<tr>
<td>df</td>
<td>9</td>
</tr>
<tr>
<td>P</td>
<td>.000</td>
</tr>
<tr>
<td>χ²/df</td>
<td>6.44</td>
</tr>
<tr>
<td>SRMR</td>
<td>.0423</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.161</td>
</tr>
<tr>
<td>GFI</td>
<td>.922</td>
</tr>
<tr>
<td>CFI</td>
<td>.942</td>
</tr>
<tr>
<td>TLI</td>
<td>.903</td>
</tr>
<tr>
<td>Composite reliability</td>
<td>.899</td>
</tr>
<tr>
<td>Average variance extracted</td>
<td>.803</td>
</tr>
</tbody>
</table>

ª Model adopted

6.4.8 Innovative organisational culture

The results from the factor analysis, depicted in table 6.10, outline no issues with convergent validity and suggest a good model-fit. An examination of the five-item measure of innovative behaviour found there to be appropriate parameter estimates. This is evident by standardised factor loadings exceeding 0.70, except for one item with 0.69 and the absence of negative values (see appendix seven).

Further testing convergent validity, the AVE depicts that 73.9 per cent of the variance is explained, which exceeds the required 50 per cent (Fornell & Larcker, 1981). The composite
reliability of .860 exceeded the required .70 (Hair et al., 2010). Therefore, convergent validity is established and the CFA reported in table 6.10 outlines that a good fit was achieved.

<table>
<thead>
<tr>
<th>Table 6.10</th>
<th>CFA results for innovative organisational culture scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fit index</td>
<td>Results</td>
</tr>
<tr>
<td>$\chi^2$</td>
<td>9</td>
</tr>
<tr>
<td>df</td>
<td>5</td>
</tr>
<tr>
<td>$\chi^2/df$</td>
<td>1.77</td>
</tr>
<tr>
<td>SRMR</td>
<td>.0232</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.06</td>
</tr>
<tr>
<td>GFI</td>
<td>.984</td>
</tr>
<tr>
<td>CFI</td>
<td>.993</td>
</tr>
<tr>
<td>TLI</td>
<td>.986</td>
</tr>
<tr>
<td>Composite reliability</td>
<td>.860</td>
</tr>
<tr>
<td>Average variance</td>
<td>.739</td>
</tr>
</tbody>
</table>

6.4.9 Tie strength

The measurement model for tie strength has three indicators, therefore, it is considered to be just-identified and model-fit cannot be examined. It is considered acceptable to include a just-identified measurement model into the structural model if the overall model is over-identified (Hair et al., 2010; Kline, 2011). More specifically, because all of the other constructs have more than three items, one three-item construct is considered acceptable.

The tie strength construct was found to have acceptable factor loadings, which provides an indication of convergent validity. To further establish convergent validity, as depicted in table 6.12, the AVE explains more than 50 per cent of the variance in the data. The composite reliability of .724 exceeded the recommended cut-off of .7 proposed by Hair et al. (2010). Therefore, convergent validity is established.
<table>
<thead>
<tr>
<th>Results</th>
<th>Rules-of-thumb</th>
<th>Were rules of thumb achieved?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite reliability</td>
<td>.724</td>
<td>≥ .70</td>
</tr>
<tr>
<td>Average variance extracted</td>
<td>.685</td>
<td>≥ .50</td>
</tr>
</tbody>
</table>

### 6.5 Correlations

The correlation matrix, depicted in table 6.13, provides insight into the bi-variate relationships between the eight constructs used in this study. The results from the correlation analysis depict that most factors were correlated to the innovative behaviour of nursing employees, except for LMX and procedural justice. More interestingly, affective organisational commitment, POS and tie strength had the most significant relationships with innovative behaviour. All of the factors within the model were correlated with affective organisational commitment and POS. POS was highly correlated with affective organisational commitment, and LMX was highly correlated with POS and affective organisational commitment.

Confirming the conclusion by Masterson et al. (2000), interactional justice was most highly correlated with LMX, while procedural justice was most highly correlated with POS. This relationship can be explained by the fact that if an employee perceives organisational policies and procedures as being fair they are most likely to consider this as organisational support. On the other hand, the perception of fairness with regards to interpersonal relationships is more likely to be a reflection of, amongst other things, the relationship nurses have with their supervisors.
However, the relationship between LMX and innovative behaviour was not significant, although based on a review of the literature it was expected that LMX would influence innovative behaviour. The relationship between LMX and innovative behaviour will be further discussed in the discussion chapter (chapter seven). Tie strength was related to all variables included in the study, but most significantly to innovative behaviour and interactional justice. Innovative organisational culture was correlated with all variables, except for interactional justice, and most significantly correlated with procedural justice, LMX, POS and affective organisational commitment.

Table 6.12  Correlation matrix

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Innovative behaviour</td>
<td>4.52</td>
<td>.71</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Affective organisational</td>
<td>4.15</td>
<td>1.08</td>
<td>.229**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>commitment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Perceived organisational</td>
<td>3.93</td>
<td>1.10</td>
<td>.184** .564**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Leader-member exchange</td>
<td>4.62</td>
<td>1.03</td>
<td>.013 .367** .405**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Interactional justice</td>
<td>4.66</td>
<td>.87</td>
<td>-.019 .182** .332** .527**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Procedural justice</td>
<td>4.05</td>
<td>.95</td>
<td>.152** .377** .589** .267** .218**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Tie strength</td>
<td>4.76</td>
<td>.71</td>
<td>.239** .147* .167* .174* .291** .066</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Innovative organisational</td>
<td>3.78</td>
<td>1.08</td>
<td>.112* .225** .384** .222** .123 .452** .155*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>culture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05  
**p < .01

6.6 Structural model specification (step 5)

As outlined in chapter five, section 5.10, specifying the structural model includes modifying (combining) the measurement models to reflect the hypothesised paths. As depicted in figure 6.9, there were 19 paths specified within the initial structural path model, which reflect
the 19 hypotheses made in Chapter three. Due to the number of paths in figure 6.9, the hypothesised paths are also depicted in table 6.14.

**Figure 6.9** Hypothesised structural path model including all hypothesised paths. *To simplify the model, the measurement part of the model is not included in this diagram*.
### Table 6.13 Hypothesised paths

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Paths</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1:</td>
<td>Affective organisational commitment $\rightarrow$ Innovative behaviour</td>
</tr>
<tr>
<td>H2:</td>
<td>POS $\rightarrow$ Affective organisational commitment</td>
</tr>
<tr>
<td>H3:</td>
<td>POS $\rightarrow$ Innovative behaviour</td>
</tr>
<tr>
<td>H4:</td>
<td>LMX $\rightarrow$ Innovative behaviour</td>
</tr>
<tr>
<td>H5:</td>
<td>LMX $\rightarrow$ POS</td>
</tr>
<tr>
<td>H6:</td>
<td>LMX $\rightarrow$ Affective organisational commitment</td>
</tr>
<tr>
<td>H7:</td>
<td>Tie strength $\rightarrow$ Innovative behaviour</td>
</tr>
<tr>
<td>H8:</td>
<td>Tie strength $\rightarrow$ POS</td>
</tr>
<tr>
<td>H9:</td>
<td>Tie strength $\rightarrow$ Affective organisational commitment</td>
</tr>
<tr>
<td>H10:</td>
<td>Procedural justice $\rightarrow$ Innovative behaviour</td>
</tr>
<tr>
<td>H11:</td>
<td>Interactional justice $\rightarrow$ Innovative behaviour</td>
</tr>
<tr>
<td>H12:</td>
<td>Procedural justice $\rightarrow$ POS</td>
</tr>
<tr>
<td>H13:</td>
<td>Procedural justice $\rightarrow$ Affective organisational commitment</td>
</tr>
<tr>
<td>H14:</td>
<td>Interactional justice $\rightarrow$ Affective organisational commitment</td>
</tr>
<tr>
<td>H15:</td>
<td>Interactional justice $\rightarrow$ POS</td>
</tr>
<tr>
<td>H16:</td>
<td>Interactional justice $\rightarrow$ LMX</td>
</tr>
<tr>
<td>H17:</td>
<td>Innovative organisational culture $\rightarrow$ Innovative behaviour</td>
</tr>
<tr>
<td>H18:</td>
<td>Innovative organisational culture $\rightarrow$ POS</td>
</tr>
<tr>
<td>H19:</td>
<td>Innovative organisational culture $\rightarrow$ Affective organisational commitment</td>
</tr>
</tbody>
</table>

### 6.7 Assessing structural model validity (step 6)

As outlined in chapter five, section 5.11, assessing the structural model requires that the structural model be examined for goodness-of-fit before the paths can be estimated. A CFA is conducted on the specified structural path model to determine the validity and fit of the model. The same fit indexes applied to examine the measurement model can be applied to assess the structural model. The initial results from a factor analysis with all the paths specified suggested a poor model-fit. As depicted in table 6.15, the p value was significant, SRMR was too high, also GFI, CFI and TLI did not meet the required 0.90 cut-off values (Byrne, 2010; Hair et al., 2010; Kline, 2011).
Table 6.14  Assessing structural model fit

<table>
<thead>
<tr>
<th>Fit index</th>
<th>All paths specified (initial model-fit)</th>
<th>Post model re-specification</th>
<th>Single method factor</th>
<th>Delta chi square test</th>
<th>Good fit rules-of-thumb</th>
<th>Was good fit achieved?</th>
</tr>
</thead>
<tbody>
<tr>
<td>χ²</td>
<td>1527.38</td>
<td>1083.231</td>
<td>976.203</td>
<td>399.46</td>
<td>&gt; .05</td>
<td>-</td>
</tr>
<tr>
<td>df</td>
<td>801</td>
<td>611</td>
<td>574</td>
<td>154</td>
<td>≤ 3</td>
<td>✓</td>
</tr>
<tr>
<td>P</td>
<td>.000</td>
<td>.000</td>
<td>.001</td>
<td>.001</td>
<td>≤ .08</td>
<td>✓</td>
</tr>
<tr>
<td>χ²/df</td>
<td>1.907</td>
<td>1.773</td>
<td>1.701</td>
<td>1.701</td>
<td>≤ .05</td>
<td>✓</td>
</tr>
<tr>
<td>SRMR</td>
<td>.1184</td>
<td>.0487</td>
<td>.0412</td>
<td>.0412</td>
<td>≤ .05</td>
<td>✓</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.066</td>
<td>.061</td>
<td>.058</td>
<td>.058</td>
<td>≤ .08</td>
<td>✓</td>
</tr>
<tr>
<td>GFI</td>
<td>.745</td>
<td>.784</td>
<td>.803</td>
<td>.803</td>
<td>≥ .9</td>
<td>-</td>
</tr>
<tr>
<td>CFI</td>
<td>.875</td>
<td>.909</td>
<td>.923</td>
<td>.923</td>
<td>≥ .9</td>
<td>✓</td>
</tr>
<tr>
<td>TLI</td>
<td>.877</td>
<td>.901</td>
<td>.910</td>
<td>.910</td>
<td>≥ .9</td>
<td>✓</td>
</tr>
<tr>
<td>PNFI</td>
<td>.738</td>
<td>.748</td>
<td>.719</td>
<td>.719</td>
<td>Improved</td>
<td>✓</td>
</tr>
<tr>
<td>AIC</td>
<td>1731.38</td>
<td>1267.231</td>
<td>1234.203</td>
<td>1234.203</td>
<td>Smaller</td>
<td>✓</td>
</tr>
</tbody>
</table>

In addition, the following nine paths were found not to be significant:
1. Interactional justice → POS
2. Tie strength → POS
3. Procedural justice → Affective organisational commitment
4. Innovative organisational culture → Affective organisational commitment
5. POS → Innovative behaviour
6. Procedural justice → Innovative behaviour
7. Interactional justice → Innovative behaviour
8. Innovative organisational culture → Innovative behaviour
9. LMX → Innovative behaviour

Only paths one to seven were removed from the structural model. To explain, a review of the literature revealed that there was not enough empirical support to retain hypothesis one to seven, the removal of these paths are further discussed in chapter seven (discussion and conclusions).

Paths number eight and nine were retained because there is stronger theoretical support that relationships between these paths should be significant (Ahmed, 1998; Ishak, 2005; Martins & Treblanche, 2003; Sanders et al., 2010; Scott & Bruce, 1994b). Following the removal of the non-significant paths, any item with a factor loading above one was removed from the model.
This included the removal of the following item: the first of the innovative organisational culture questions ‘This hospital promotes a willingness to experiment’. This item was removed because factor loadings above one provide an indication that there may be an issue with the item. If the removal of the item does not solve the problem, the issue may be with the entire measure.

Due to a poor fit of the initial structural path model, it is important to further re-specify the model before estimating the parameters. Modification indices can provide an indication of how the model can be re-specified to improve model-fit. Hair et al. (2010) suggest that re-specification should be guided by the modification indices, but should also have some theoretical relevance. According to the modification indices, the addition of several co-variances between the independent variables will provide an overall improvement to the fit of the structural model. As such, the following six covariances were added to the structural path model:

1. Interactional justice ↔ Procedural justice
2. Interactional justice ↔ Innovative organisational culture
3. Interactional justice ↔ Tie strength
4. Procedural justice ↔ Innovative organisational culture
5. Procedural justice ↔ Tie strength
6. Tie strength ↔ Innovative organisational culture

The exogenous constructs are all in some way related to social exchange and developing workplace relationships; therefore, there is theoretical relevance for adding these covariances to the structural model. Following the addition of the covariances, the assessment for structural model fit is re-calculated. The fit of the re-specified (modified) structural path model was an improvement on the initial model and overall suggested that a reasonable fit was achieved. The single-method factor model fit the data reasonably well (see table 6.14) and the parameter estimates for all hypothesised relationships found in the post model re-specification were significant in the single-method factor model, suggesting common method variance is of no
major concern in this study. The results from a delta chi-square test \( \Delta \chi^2 = 399.46, \text{ df} = 154, p < .001 \) reveal that the re-specified model provides a statistically significantly better fit to the null model. Following the attainment of a reasonable fit for the structural path model, the hypothesised paths can now be estimated.

6.8 Assessing the similarities and differences between public and private sector nursing employees – testing hypothesis 1

Hypothesis 1 suggested that there would be no significant differences between public and private sector nurses working within Australian hospitals. The results from the MANOVA depicted in table 6.16 outline that there were some small mean differences between public and private sector nurses; although none of these differences were found to be significant. The results provide support for hypothesis 1, outlining no significant differences of the constructs examined, between public and private sector nursing employees’ perceptions and behaviour. Therefore, the results from the MANOVA (Table 6.15) provide support for combining the public and private sector samples, because no sample specific statistically significant differences were found. As such, the remaining hypotheses will be examined with a combined sample of public and private sector nurses (N = 210).
Table 6.15 Results of MANOVA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Public</th>
<th>Private</th>
<th>Mean</th>
<th>SD</th>
<th>Mean</th>
<th>SD</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovative behaviour</td>
<td>4.38</td>
<td>4.55</td>
<td>.72</td>
<td>.67</td>
<td>.253</td>
<td>.616</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affective organisational</td>
<td>4.06</td>
<td>4.23</td>
<td>1.04</td>
<td>.155</td>
<td>.694</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>commitment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POS</td>
<td>3.90</td>
<td>3.95</td>
<td>1.05</td>
<td>1.16</td>
<td>.732</td>
<td>.393</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LMX</td>
<td>4.69</td>
<td>4.55</td>
<td>1.04</td>
<td>1.02</td>
<td>.898</td>
<td>.344</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interactional justice</td>
<td>4.75</td>
<td>4.58</td>
<td>.83</td>
<td>.90</td>
<td>.250</td>
<td>.138</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedural justice</td>
<td>4.01</td>
<td>4.09</td>
<td>.93</td>
<td>.97</td>
<td>.415</td>
<td>.520</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tie strength</td>
<td>4.83</td>
<td>4.69</td>
<td>.72</td>
<td>.69</td>
<td>.250</td>
<td>.115</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovative organisational</td>
<td>4.01</td>
<td>3.60</td>
<td>1.11</td>
<td>1.03</td>
<td>3.52</td>
<td>.062</td>
<td></td>
<td></td>
</tr>
<tr>
<td>culture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Wilks’ Lambda = .96

*Mean: 1 = strongly disagree to 6 = strongly agree

*a N = 106; b N = 104

6.9 Assessing the structural model – testing the hypotheses (step 6)

As previously mentioned a path analysis is conducted to estimate the parameters and to either provide support to accept or reject the hypothesised paths. The results depicted in figure 6.10 outline direct, positive and significant relationships between affective organisational commitment and innovative behaviour, as well as between tie strength and innovative behaviour. In addition, POS, LMX, interactional justice, procedural justice, innovative organisational culture and tie strength had an indirect, positive and significant impact upon innovative behaviour (see figure 6.10). Due to the large number of variables interacting within the model, the results from the path analysis will be discussed in relation to the hypotheses and to all of the specific significant paths.
In addition, the results from the covariances have been omitted from figure 6.10 to ensure the model remains legible. As such, the covariance results are summarised within table 6.16 and outline significant covariances between interactional justice and innovative organisational culture, procedural justice and innovative organisational culture, tie strength and innovative organisational culture, interactional justice and procedural justice, and interactional justice and innovative organisational culture.
tie strength. To ensure the discussion of the path analysis results is easy to comprehend, the hypotheses, direct effects, indirect effects, total effects and intervening variables are summarised on p. 191, Table 6.17.

Table 6.16: Covariances added to the structural path model

<table>
<thead>
<tr>
<th>Covariances</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interactional justice &lt;-&gt; Innovative organisational culture</td>
<td>.184</td>
<td>.091</td>
<td>2.009</td>
<td>.045</td>
</tr>
<tr>
<td>Procedural justice &lt;-&gt; Innovative organisational culture</td>
<td>.590</td>
<td>.115</td>
<td>5.131</td>
<td>***</td>
</tr>
<tr>
<td>Innovative organisational culture &lt;-&gt; Tie strength</td>
<td>.283</td>
<td>.084</td>
<td>3.374</td>
<td>***</td>
</tr>
<tr>
<td>Procedural justice &lt;-&gt; Tie strength</td>
<td>.064</td>
<td>.060</td>
<td>1.067</td>
<td>.286</td>
</tr>
<tr>
<td>Interactional justice &lt;-&gt; Procedural justice</td>
<td>.230</td>
<td>.071</td>
<td>3.239</td>
<td>.001</td>
</tr>
<tr>
<td>Interactional justice &lt;-&gt; Tie strength</td>
<td>.207</td>
<td>.056</td>
<td>3.702</td>
<td>***</td>
</tr>
</tbody>
</table>

The results depicted in table 6.17 provide support for the acceptance of hypothesis 1, 2, 5, 6, 7, 9, 12, 14, 16, 18 and 20. The results also provide support that hypothesis 3, 4, 8, 10, 11, 13, 15, 17 and 19 should be rejected. Overall LMX, procedural justice and innovative organisational culture predicted 47.3 per cent of the variance of POS. Moreover, tie strength, interactional justice, LMX and POS predicted 35.3 per cent of the variance of affective organisational commitment. On the other hand, LMX predicted 47.3 per cent of the variance of POS. Finally, affective organisational commitment, tie strength, innovative organisational culture and LMX predicted 15.7 per cent of the variance of innovative behaviour. These results including the acceptance and rejection of the hypotheses will now be discussed in further detail, as mentioned; the figures for these results are depicted in table 6.18.

Hypothesis 1 outlined that affective organisational commitment should be positively and significantly correlated with innovative behaviour. The results provide support for the
acceptance of hypothesis 1, depicting both a positive and significant relationship between
nursing employees’ affective organisational commitment and their innovative behaviour ($\beta = .18$,
p < .01). As such, hypothesis 1 should be accepted.

Hypothesis 2 suggested that POS should be positively and significantly correlated
affective organisational commitment. The results provide support for the acceptance of
hypothesis 2, outlining that the relationship between POS and affective organisational
commitment is both positive and significant ($\beta = .47$, p < .001). Therefore, based on the results
hypothesis 2 should be accepted.

Hypothesis 3 proposed that there should be a positive and significant relationship
between POS and innovative behaviour. The results provide support for the rejection of
hypothesis 3, because while there is a weak positive relationship ($\beta = .06$), the relationship is not
significant (p > .05). However, while there is no direct significant relationship, POS does appear
to provide a weak indirect effect through affective organisational commitment ($\beta = .07$).
Therefore, based on the results hypothesis 3 should be rejected.

Hypothesis 4 delineated that LMX should be positively and significantly correlated with
the innovative behaviour of nursing employees. However, the results provide support that the
hypothesis should be rejected, because the relationship was negative and not significant ($\beta = -
.09$, p > .05). Although there was no direct significant relationship between LMX and innovative
behaviour, LMX did have a weak indirect effect on innovative behaviour through POS and
affective organisational commitment ($\beta = .07$). As such, based on the results hypothesis 4 should
be rejected.
Hypothesis 5 advocated that LMX should be positively and significantly correlated with POS. The results provide support for the acceptance of hypothesis 5 ($\beta = .29$, $p < .001$); therefore, the hypothesis should be accepted.

Hypothesis 6 suggested that LMX should be positively and significantly correlated with the affective organisational commitment of nursing employees. The results provide support for the acceptance of hypothesis 6, outlining a direct relationship between LMX and affective organisational commitment ($\beta = .28$, $p < .001$), so the hypothesis should be accepted. Additionally, the results suggest that LMX indirectly effects affective organisational commitment through POS ($\beta = .135$). Therefore, LMX is related both directly and indirectly to affective organisational commitment with a total effect of $\beta = .414$.

Hypothesis 7 proposed that tie strength would be positively and significantly correlated with the innovative behaviour of nursing employees. The results provide support for the acceptance of hypothesis 7 suggesting that the direct relationship between tie strength and innovative behaviour is positive and significant ($\beta = .28$, $p < .01$). Furthermore, tie strength also had an indirect effect on innovative behaviour through affective organisational commitment ($\beta = .02$). Therefore, the total effect of tie strength upon innovative behaviour was $\beta = .302$. As such, hypothesis 7 should be accepted.

Hypothesis 8 delineated that tie strength should be positively and significantly correlated with POS. The results suggest that while there is a positive relationship between tie strength and POS ($\beta = .12$), this relationship was not significant ($p > .05$). Therefore, the results provide support that hypothesis 8 should be rejected.
Hypothesis 9 proposed that tie strength should be positively and significantly correlated with the affective organisational commitment of nursing employees. The results provide support that the relationship between tie strength and affective organisational commitment is positive and significant (β = .12, p < .05). As such, the results imply that hypothesis 9 should be accepted.

Hypothesis 10 suggested that procedural justice as perceived by nursing employees should be positively and significantly correlated with innovative behaviour. The results indicate that hypothesis 10 should be rejected, outlining that there is a positive relationship (β = .11) although the relationship was not significant (p > .05). Therefore, hypothesis 10 is rejected.

Hypothesis 11 outlined that interactional justice should be positively and significantly correlated with the innovative behaviour of nursing employees. However, the results depict that there is a positive relationship (β = .15), but the relationship was not significant (p < .05). Although there was no direct significant relationship between interactional justice and innovative behaviour, interactional justice did have a weak indirect effect on innovative behaviour through LMX and affective organisational commitment (β = .05). Therefore, based on the results hypothesis 11 should be rejected.

Hypothesis 12 proposed that procedural justice would be positively and significantly correlated with POS. The results provide support for the acceptance of hypothesis 12, suggesting that as procedural justice increases so does POS (β = .60, p < .001). In summary, hypothesis 12 should be accepted.

Hypothesis 13 stated that procedural justice would be positively and significantly correlated with the affective organisational commitment of nursing employees. The results
provide support to reject hypothesis 13, because while procedural justice is slightly related to affective organisational commitment (β = .10), the relationship was not significant (p > .05). Therefore, hypothesis 13 should be rejected.

Hypothesis 14 suggested that interactional justice would be positively and significantly correlated with the affective organisational commitment of nursing employees. The results provide support for the acceptance of hypothesis 4, outlining a positive and significant relationship between interactional justice and affective organisational commitment (β = .23, p < .05). As such, hypothesis 14 should be accepted.

Hypothesis 15 implied that interactional justice would be positively and significantly correlated with POS. However, the results suggest that interactional justice has a very weak relationship with POS (β = .03) and this relationship was not significant (p > .05). Therefore, the results provide support that hypothesis 15 should be rejected.

Hypothesis 16 put forward that interactional justice would be positively and significantly correlated with LMX. The results provide support that there is a positive and significant correlation between interactional justice and LMX (β = .71, p <.001). Therefore, based on the results, hypothesis 16 should be accepted.

Hypothesis 17 put forward that innovative organisational culture should be positively and significantly correlated with the innovative behaviour of nursing employees. The results provide support that the hypothesis should be rejected, because there was a negative relationship that was not significant (β = -.05, p >.05). Therefore, hypothesis 17 should be rejected.
Hypothesis 18 proposed that an innovative organisational culture would be positively and significantly correlated with POS. The results suggest that there is a positive and significant relationship between an innovative organisational culture and POS ($\beta = .12$, $p < .05$). As such, based on the results, hypothesis 18 should be accepted.

Hypothesis 19 outlined that there should be a positive and significant relationship between an innovative organisational culture and affective organisational commitment. The results provide support for the rejection of hypothesis 19, suggesting that there is no direct relationship between innovative organisational culture and affective organisational commitment ($\beta = -.07$, $p > .05$). Although innovative organisational culture was not directly related to affective organisational commitment, there did appear to be a small indirect effect through POS ($\beta = .053$). However, because the relationship between innovative organisational culture and affective organisational commitment is not positive and not significant, hypothesis 19 should be rejected.
<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Direct effects</th>
<th>Paths</th>
<th>Regression Weights</th>
<th>Significance level</th>
<th>Indirect effects</th>
<th>Intervening variable/s</th>
<th>Total effect</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: AC → Innovative behaviour</td>
<td>.175</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Accept</td>
</tr>
<tr>
<td>H2: POS → AC</td>
<td>.465</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Accept</td>
</tr>
<tr>
<td>H3: POS → Innovative behaviour</td>
<td>.056</td>
<td>.423</td>
<td>.068</td>
<td>AC</td>
<td>.068</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H4: LMX → Innovative behaviour</td>
<td>-.093</td>
<td>.075</td>
<td>.072</td>
<td>POS &amp; AC</td>
<td>-.021</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H5: LMX → POS</td>
<td>.289</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Accept</td>
</tr>
<tr>
<td>H6: LMX → AC</td>
<td>.279</td>
<td>.000</td>
<td>.135</td>
<td>POS</td>
<td>.414</td>
<td></td>
<td></td>
<td>Accept</td>
</tr>
<tr>
<td>H7: Tie strength → Innovative behaviour</td>
<td>.281</td>
<td>.002</td>
<td>.021</td>
<td>AC</td>
<td>.302</td>
<td></td>
<td></td>
<td>Accept</td>
</tr>
<tr>
<td>H8: Tie strength → POS</td>
<td>.121</td>
<td>.289</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H9: Tie strength → AC</td>
<td>.118</td>
<td>.032</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Accept</td>
</tr>
<tr>
<td>H10: Procedural justice → Innovative behaviour</td>
<td>.110</td>
<td>.077</td>
<td>.049</td>
<td>POS &amp; AC</td>
<td>.049</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H11: Interactional justice → Innovative behaviour</td>
<td>.154</td>
<td>.054</td>
<td>.054</td>
<td>AC &amp; LMX</td>
<td>.054</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H12: Procedural justice → POS</td>
<td>.601</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Accept</td>
</tr>
<tr>
<td>H13: Procedural justice → Affective organisational commitment (AC)</td>
<td>.102</td>
<td>.312</td>
<td>.279</td>
<td>POS</td>
<td>.279</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H14: Interactional justice → AC</td>
<td>.227</td>
<td>.028</td>
<td>.292</td>
<td>LMX</td>
<td>.519</td>
<td></td>
<td></td>
<td>Accept</td>
</tr>
<tr>
<td>H15: Interactional justice → POS</td>
<td>.036</td>
<td>.732</td>
<td>.181</td>
<td>LMX</td>
<td>.181</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H16: Interactional justice → LMX</td>
<td>.705</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Accept</td>
</tr>
<tr>
<td>H17: Innovative organisational culture → Innovative behaviour</td>
<td>-.045</td>
<td>.275</td>
<td>.009</td>
<td>POS &amp; AC</td>
<td>.054</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H18: Innovative organisational culture → POS</td>
<td>.115</td>
<td>.023</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Accept</td>
</tr>
<tr>
<td>H19: Innovative organisational culture → AC</td>
<td>-.066</td>
<td>.268</td>
<td>.053</td>
<td>POS</td>
<td>.053</td>
<td></td>
<td></td>
<td>Reject</td>
</tr>
</tbody>
</table>
6.10 PLS results

The hypotheses are retested using PLS, as discussed in chapter five, section 5.13 and 5.14, and will be used to analyse the models proposed in figure 6.9 and figure 6.10. As previously discussed, a PLS analysis is conducted in addition to the SEM analysis as a confirmatory procedure. As such, this section will use a PLS analysis technique to examine reliability, validity, examine path coefficients and to determine the stability of the results. The results from the PLS analysis were similar to the SEM results, but as expected the results were not exactly the same. It was expected that the results would be somewhat different, because as mentioned SEM is a covariance based technique, while PLS is a regression based technique. However with this said, Hoyle (1995) suggests that instead of viewing PLS as a competing approach to covariance-based SEM, the two methods can be thought of as complimentary.

The results from the PLS overview analysis suggest that the model outlined in figure 6.10 explained approximately 36 per cent of the variance of affective organisational commitment, 43 per cent of the variance of POS, 30 per cent of the variance of LMX and 13 per cent of the variance of innovative behaviour. Furthermore, as depicted in table 6.18 all of the composite reliabilities and AVEs met the required minimum cut-off values of 0.50 and 0.70 respectively. The square root of each AVE is greater than the corresponding correlations, providing support that each construct shares more variance with its indicators than with other constructs in the model (see Table 6.19). Therefore, the PLS results suggest that there are no issues with reliability or validity.
### Table 6.18  Reliability and validity overview

<table>
<thead>
<tr>
<th>Variable</th>
<th>AVE</th>
<th>Composite Reliability</th>
<th>R²</th>
<th>Cronbach’s Alpha</th>
<th>Communality</th>
<th>Redundancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective organisational commitment</td>
<td>0.71</td>
<td>0.92</td>
<td>0.36</td>
<td>0.90</td>
<td>0.71</td>
<td>-0.01</td>
</tr>
<tr>
<td>Innovative organisational culture</td>
<td>0.63</td>
<td>0.90</td>
<td>0.00</td>
<td>0.86</td>
<td>0.63</td>
<td>0.00</td>
</tr>
<tr>
<td>Interactional justice</td>
<td>0.75</td>
<td>0.94</td>
<td>0.00</td>
<td>0.92</td>
<td>0.75</td>
<td>0.00</td>
</tr>
<tr>
<td>Innovative Behaviour</td>
<td>0.52</td>
<td>0.85</td>
<td>0.13</td>
<td>0.77</td>
<td>0.52</td>
<td>0.03</td>
</tr>
<tr>
<td>Leader-member exchange</td>
<td>0.76</td>
<td>0.95</td>
<td>0.30</td>
<td>0.94</td>
<td>0.76</td>
<td>0.23</td>
</tr>
<tr>
<td>Procedural justice</td>
<td>0.68</td>
<td>0.91</td>
<td>0.00</td>
<td>0.88</td>
<td>0.68</td>
<td>0.00</td>
</tr>
<tr>
<td>Perceived organisational support</td>
<td>0.68</td>
<td>0.93</td>
<td>0.43</td>
<td>0.90</td>
<td>0.68</td>
<td>0.11</td>
</tr>
<tr>
<td>Tie Strength</td>
<td>0.63</td>
<td>0.83</td>
<td>0.00</td>
<td>0.72</td>
<td>0.63</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Table 6.19  Square root of AVEs

<table>
<thead>
<tr>
<th>Variable</th>
<th>√AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Innovative behaviour</td>
<td>0.84</td>
</tr>
<tr>
<td>2 Affective organisational commitment</td>
<td>0.80</td>
</tr>
<tr>
<td>3 Perceived organisational support</td>
<td>0.87</td>
</tr>
<tr>
<td>4 Leader-member-exchange</td>
<td>0.72</td>
</tr>
<tr>
<td>5 Interactional justice</td>
<td>0.87</td>
</tr>
<tr>
<td>6 Procedural justice</td>
<td>0.83</td>
</tr>
<tr>
<td>7 Tie strength</td>
<td>0.79</td>
</tr>
<tr>
<td>8 Innovative organisational culture</td>
<td>0.79</td>
</tr>
</tbody>
</table>

The path coefficients were estimated twice; the first estimation examined the initial structural model (see figure 6.9) and the second estimation examined the model depicted in figure 6.10. The results outlined in table 6.20 are very similar to the previously discussed SEM results. Specifically, the PLS results from the first estimation outline that the same paths were significant in the PLS analysis as the SEM analysis. Although there was one exception, the path between interactional justice and affective organisational commitment was significant when analysed using SEM, but not significant when using PLS.
Table 6.20  Path coefficients: all hypothesised paths

|                                | Original Sample Mean (O) | Sample Mean (M) | Standard Deviation (STDEV) | Standard Error (STERR) | T Statistics (|O/STERR|) |
|--------------------------------|--------------------------|-----------------|-----------------------------|------------------------|------------------|
| AC -> Innovative Behaviour     | 0.1788                   | 0.1785          | 0.0912                      | 0.0912                 | 1.9596           |
| IOC -> AC                      | -0.033                   | -0.0279         | 0.0717                      | 0.0717                 | 0.4603           |
| IOC -> Innovative Behaviour    | -0.0069                  | -0.0048         | 0.0803                      | 0.0803                 | 0.0858           |
| IOC -> POS                     | 0.2272                   | 0.2297          | 0.0659                      | 0.0659                 | 3.4465           |
| IJ -> AC                       | -0.1256                  | -0.1198         | 0.0834                      | 0.0834                 | 1.5052           |
| IJ -> Innovative Behaviour     | 0.1302                   | 0.1388          | 0.0828                      | 0.0828                 | 1.5716           |
| IJ -> LMX                      | 0.547                    | 0.5523          | 0.0654                      | 0.0654                 | 8.3624           |
| IJ -> POS                      | 0.097                    | 0.0918          | 0.0842                      | 0.0842                 | 1.1516           |
| LMX -> AC                      | 0.2209                   | 0.2132          | 0.0895                      | 0.0895                 | 2.4697           |
| LMX -> Innovative Behaviour    | -0.0512                  | -0.0411         | 0.0942                      | 0.0942                 | 0.5434           |
| LMX -> POS                     | 0.2075                   | 0.2094          | 0.076                       | 0.076                  | 2.7303           |
| PJ -> AC                       | 0.1004                   | 0.0983          | 0.0719                      | 0.0719                 | 1.3961           |
| PJ -> Innovative Behaviour     | 0.1365                   | 0.1399          | 0.0851                      | 0.0851                 | 1.6049           |
| PJ -> POS                      | 0.359                    | 0.3617          | 0.0706                      | 0.0706                 | 5.086            |
| POS -> AC                      | 0.4614                   | 0.454           | 0.0764                      | 0.0764                 | 6.0364           |
| Tie Strength -> AC             | 0.1874                   | 0.1502          | 0.0977                      | 0.0977                 | 1.9948           |
| Tie Strength -> Innovative Behaviour | 0.2585   | 0.2704          | 0.0751                      | 0.0751                 | 3.4421           |
| Tie Strength -> POS            | 0.0717                   | 0.0792          | 0.0683                      | 0.0683                 | 1.0495           |

Note: (yellow) not significant; (blue) not significant, but retained for theoretical reasons. All others were significant.

Additionally, the PLS results from the second estimation were also similar to the original covariance-based SEM analysis. That is, the same paths that were significant in the SEM analysis were also significant in the PLS analysis, again with the exception of the path between interactional justice and affective organisational commitment. An explanation of this difference may not be due to the instability of the SEM analysis, but the fact that covariances cannot be added to the PLS model. Therefore, the model examined using SEM was slightly different to the model analysed using the PLS approach. However, the overall PLS results confirm the SEM results discussed previously.
Table 6.21  Path coefficients: model with non-significant paths dropped (except three paths that were retained based on theoretical relevance)

<table>
<thead>
<tr>
<th>Path</th>
<th>Original Sample Mean</th>
<th>Sample Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
<th>T Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC -&gt; Innovative Behaviour</td>
<td>0.2189</td>
<td>0.221</td>
<td>0.094</td>
<td>0.094</td>
<td>2.3289</td>
</tr>
<tr>
<td>IOC -&gt; Innovative Behaviour</td>
<td>0.0505</td>
<td>0.0546</td>
<td>0.082</td>
<td>0.082</td>
<td>0.6158</td>
</tr>
<tr>
<td>IJ -&gt; POS</td>
<td>0.2618</td>
<td>0.2703</td>
<td>0.0676</td>
<td>0.0676</td>
<td>3.8733</td>
</tr>
<tr>
<td>IJ -&gt; LMX</td>
<td>0.1214</td>
<td>0.1205</td>
<td>0.0799</td>
<td>0.0799</td>
<td>1.5192</td>
</tr>
<tr>
<td>LMX -&gt; AC</td>
<td>0.5482</td>
<td>0.5526</td>
<td>0.0629</td>
<td>0.0629</td>
<td>8.7131</td>
</tr>
<tr>
<td>LMX -&gt; Innovative Behaviour</td>
<td>-0.1101</td>
<td>-0.1071</td>
<td>0.0848</td>
<td>0.0848</td>
<td>1.2983</td>
</tr>
<tr>
<td>PJ -&gt; POS</td>
<td>0.42</td>
<td>0.4213</td>
<td>0.0642</td>
<td>0.0642</td>
<td>6.5433</td>
</tr>
<tr>
<td>POS -&gt; AC</td>
<td>0.501</td>
<td>0.4958</td>
<td>0.0735</td>
<td>0.0735</td>
<td>6.8116</td>
</tr>
<tr>
<td>Tie Strength -&gt; AC</td>
<td>0.189</td>
<td>0.1877</td>
<td>0.0913</td>
<td>0.0913</td>
<td>1.9739</td>
</tr>
<tr>
<td>Tie Strength -&gt; Innovative Behaviour</td>
<td>0.2291</td>
<td>0.2498</td>
<td>0.0793</td>
<td>0.0793</td>
<td>2.8897</td>
</tr>
</tbody>
</table>

Note: (blue) not significant, but retained for theoretical reasons. All others were significant.

The results from the blindfolding procedure provide support that the model from the second estimation is stable and possess predictive relevance (see table 6.22). The blindfolding procedure was run twice; once with 10 omission distances and once with 25 omission distances (Chin, 1998). The results from the blindfolding procedure depicted that the communality and the redundancy Q-square indices were greater than zero. As such, indices greater than zero indicate the predictive relevance and stability of the model.

Table 6.22  PLS blindfolding procedure

<table>
<thead>
<tr>
<th>Variables</th>
<th>Distance 10</th>
<th>Distance 25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective organisational commitment</td>
<td>SSO 1050</td>
<td>SSE 462.4823</td>
</tr>
<tr>
<td>Innovative organisational culture</td>
<td>SSO 840</td>
<td>SSE 391.9151</td>
</tr>
<tr>
<td>Interactional justice</td>
<td>SSO 1050</td>
<td>SSE 395.8119</td>
</tr>
<tr>
<td>Innovative Behaviour</td>
<td>SSO 1050</td>
<td>SSE 756.234</td>
</tr>
<tr>
<td>Leader-member exchange</td>
<td>SSO 1260</td>
<td>SSE 431.9043</td>
</tr>
<tr>
<td>Procedural justice</td>
<td>SSO 1050</td>
<td>SSE 498.059</td>
</tr>
<tr>
<td>Perceived organisational support</td>
<td>SSO 1260</td>
<td>SSE 549.2226</td>
</tr>
<tr>
<td>Tie Strength</td>
<td>SSO 630</td>
<td>SSE 455.1377</td>
</tr>
</tbody>
</table>
6.11 Conclusion

This chapter examined both the measurement and structural models using SEM. The findings from the SEM analysis were also confirmed using PLS. The findings outlined no issues with normality, linearity, homoscedasticity, multicollinearity, common method variance, unidimensionality, reliability, convergent and discriminant validity. Confirmatory factor analysis was used to assess the fit for each latent construct. After acceptable levels of model-fit were established, the structural path model was then examined. The re-specified structural path model had an acceptable level of model-fit. The results indicated that affective organisational commitment and tie strength were directly and significantly correlated with innovative behaviour. On the other hand, POS, LMX, innovative organisational culture, interactional and procedural justice, and tie strength indirectly related to innovative behaviour through affective organisational commitment. In conclusion, 10 of the original 20 hypotheses were accepted, leaving ten rejected. The results from the SEM analysis were also confirmed using PLS. The PLS results provided support as to the stability of the SEM analysis. The next chapter discusses the conclusions drawn from the findings, as well as the implications and limitations.
7.0 CHAPTER SEVEN: DISCUSSION AND CONCLUSION

7.1 Introduction

This chapter explores the findings discussed in chapter six to address the major research questions proposed in chapter one, section 1.1.1. The chapter begins with a summary of the thesis, which includes an overview of each chapter. This is followed by a discussion, which addresses the major issues related to nursing employees’ affective organisational commitment and innovative behaviour. These issues are addressed through a social exchange lens, which provides insight in understanding how workplace social relationships affect behaviour in the workplace. Moreover, an explanation will also be provided to explore the trends identified in the results chapter (chapter six). As mentioned, a pattern-matching procedure will be adopted to examine the similarities and differences between the findings from this study and the body of literature examined. The implications for hospital management and for nursing practice will then be discussed. The discussion of implications is followed by the studies limitations and areas for future research.

7.2 Research questions

The overarching research questions for this study were concerned with examining the impact of several organisational factors (procedural and interactional justice, innovative organisational culture, tie strength and LMX) on POS, affective organisational commitment and innovative behaviour and the similarities and differences between public and private sector nursing employees. The research questions are depicted and addressed in Table 7.1 below.

To effectively answer the research questions, a conceptual research model was developed based on an in-depth review of the extant literature. The construction of the conceptual model was framed using SET. That is, to examine the problem of fostering affective organisational
commitment and innovative behaviour a conceptual model was developed based on SET. More specifically, from a review of the literature it seemed obvious that workplace relationships are an essential part of transferring information, knowledge and resources, which are required to foster innovative behaviour in the workplace. The notion about the importance of workplace relationships led to a decision about framing the research within a social exchange context. Furthermore, because nursing employees’ form the nursing profession the research was also framed using theory about professionals in the workplace.

This study was conducted on nursing employees working within an Australian context, it was important to examine both public and private sector nursing employees. As such, the second primary research question (PRQ 2) was developed. The second primary research question was developed based on literature suggesting the once clear line between public and private health care has become blurred (Baxter & Kroll-Smith, 2005; Brown & Barnett, 2004; Brunetto, Farr Wharton, et al., 2010). As such, this study aimed to examine whether, from the constructs examined, there were any significant differences between nursing employees’ perceptions and behaviour.

A further review of the literature highlighted that affective organisational commitment (Basu & Green, 1997; Jafri, 2010; Thompson & Heron, 2006) and POS (Eisenberger, Fasolo, & Davis-LaMastro, 1990) have been found to be predictors of innovative behaviour. However, the antecedents of affective organisational commitment and innovative behaviour required further examination within a nursing context. Following a review of literature about SET, professionals, affective organisational commitment and innovative behaviour the conceptual model depicted in figure 3.1, chapter 3 was constructed. The conceptual model is developed to provide a way of addressing the research questions.
Table 7.1 Addressing the research questions

<table>
<thead>
<tr>
<th>Research question</th>
<th>Answer to research question</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRQ 1: What is the impact of some organisational factors (procedural and interactional justice, innovative organisational culture, tie strength, LMX and POS) upon work-related outcomes (affective organisational commitment and innovative behaviour) of nursing employees’ working within Australian healthcare?</td>
<td>The results outline that the organisational factors, which are predominantly social relationships in the workplace, interact with one another to significantly influence nurses’ affective commitment and innovative behaviour. The results also imply that when social relationships in the workplace are of a high quality then the effect is a positive contribution on nurses’ emotional attachment to the organisations (affective commitment) and their propensity to be innovative in the workplace (innovative behaviour).</td>
</tr>
<tr>
<td>PRQ 2: What are the similarities and differences in behaviour in terms of some organisational factors (procedural and interactional justice, innovative organisational culture, tie strength, LMX and POS) and work-related outcomes (affective organisational commitment and innovative behaviour) for public and private sector nurses?</td>
<td>The results from a multiple analysis of variance (MANOVA) test indicate that from the mean responses pertaining to each of the constructs examined, there were no statistically significant differences between public and private sector nurses. Therefore, in relation to each of the constructs the public and private sector nurses appeared to be similar in their perceptions.</td>
</tr>
</tbody>
</table>
7.3 Summary and discussion of the overall results

This section addresses the issues raised and the voids in the literature by reviewing the literature discussed in chapter 2 and 3, and the results reported in chapter 6. As previously discussed, this process is referred to as pattern-matching. The summary of findings are depicted in Table 7.2 below.

Table 7.2 Summary of findings

<table>
<thead>
<tr>
<th>Direct relationships</th>
<th>Direct effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Innovative organisational culture had a direct, positive and significant correlation with POS, but not with innovative behaviour.</td>
<td>Innovative organisational culture → Perceived organisational support: β = .115, p &lt; .05</td>
</tr>
<tr>
<td>2. Tie strength had a direct, positive and significant correlation with affective organisational commitment and innovative behaviour.</td>
<td>Innovative organisational culture → innovative behaviour: β = .045, p &gt; .05</td>
</tr>
<tr>
<td>3. Procedural justice had a direct, positive and significant correlation with POS</td>
<td>Tie strength → affective organisational commitment: β = .118, p &lt; .05</td>
</tr>
<tr>
<td>4. Interactional justice had a direct, positive and significant relationship with LMX and affective organisational commitment</td>
<td>Tie strength → innovative behaviour: β = .281, p &lt; .001</td>
</tr>
<tr>
<td>5. Supervisor-nurse relationship had a direct, positive and significant relationship with POS and affective organisational commitment</td>
<td>Procedural justice → POS: β = .601, p &lt; .001</td>
</tr>
<tr>
<td>6. POS had a direct, positive and significant relationship with affective organisational commitment</td>
<td>Interactional justice → LMX: β = .705, p &lt; .001</td>
</tr>
<tr>
<td>7. Affective organisational commitment had a direct, positive and significant relationship with innovative behaviour</td>
<td>Interactional justice → affective organisational commitment: β = .227, p &lt; .05</td>
</tr>
</tbody>
</table>

LMX → POS: β = .289, p < .001
LMX → affective organisational commitment: β = .279, p < .001
POS → affective organisational commitment: β = .465, p < .001
Affective organisational commitment → innovative behaviour: β = .175, p < .05
### Indirect relationships

1. Innovative organisational had a positive and indirect correlation with affective organisational commitment through POS.  
   \[ \beta = .053 \]

2. Innovative organisational culture also had a positive and indirect correlation with innovative behaviour through POS and affective organisational commitment.  
   \[ \beta = .009 \]

3. Tie strength had a positive and indirect correlation with innovative behaviour through affective organisational commitment  
   \[ \beta = .021 \]

4. Interactional justice had a positive and indirect correlation with POS through LMX.  
   \[ \beta = .181 \]

5. Interactional justice also had a positive and indirect correlation with innovative behaviour through affective organisational commitment, POS and LMX.  
   \[ \beta = .054 \]

6. Supervisor-nurse relationship had a positive and indirect relationship with affective organisational commitment through POS.  
   \[ \beta = .135 \]

7. Supervisor-nurse relationship also had a positive and indirect relationship with innovative behaviour through affective organisational commitment.  
   \[ \beta = .072 \]

8. Procedural just had a positive and indirect relationship with innovative behaviour through POS and affective organisational commitment.  
   \[ \beta = .049 \]

9. POS had a positive and indirect relationship with innovative behaviour through affective organisational commitment.  
   \[ \beta = .068 \]

### 7.3.1 Discussing the structural path model: innovative behaviour, affective organisational commitment, perceived organisational support and leader-member exchange

There are numerous contributions in this thesis to knowledge about the innovative behaviour of nursing employees. The findings from this thesis support and contribute to previous studies suggesting, amongst other things, that an increase in affective organisational commitment should contribute to boosting innovative behaviour in the workplace (Jafri, 2010).
As stated in chapter three, there are but a few studies that have examined the relationship between affective organisational commitment and innovative behaviour, and none examined nursing employees. The existing knowledge from previous research suggests a positive and significant relationship between organisational commitment and innovative behaviour of employees (Basu & Green, 1997). However, there were some differences between the two studies, the study by Basu and Green used supervisors’ perceptions to measure innovative behaviour, where this study used employees’ perceptions. As such, the contribution of this thesis is that it adds new knowledge about innovative behaviour in the workplace, particularly about the antecedents and innovative behaviour of nursing employees.

This study also supports and contributes new knowledge to more recent literature, suggesting that if employees are affectively committed to the organisation they are more likely to strive to be innovative in the workplace. Jafri (2010) found that affective organisational commitment was positively and significantly related to the innovative behaviour of employees working within the retail sector. Furthermore, Thompson and Heron (2006) found that affective organisational commitment was positively and significantly related to the innovative behaviour of employees working within research and development firms. The findings from this study confirm and support past literature suggesting that affective organisational commitment has a direct, significant and positive relationship with the innovative behaviour of employees ($\beta = .175, p < .05$). However, there was a lack of empirical knowledge about the impact of affective organisational commitment on the innovative behaviour of nursing employees. Therefore, the findings from this research contribute new knowledge and understanding about the impact of affective organisational commitment on the innovative behaviour of nursing employees. Also the new knowledge about the affective organisational commitment and innovative behaviour of
nursing employees highlights an implication for practice that will be discussed in section 7.6 Implications for practice.

Additionally, the findings from this thesis add to previous research by Eisenberger et al. (1990) who found a direct effect between POS and innovative behaviour. The results from this study, however, found only an indirect relationship between POS and innovative behaviour through affective organisational commitment ($\beta = .068$). A possible explanation for the difference in findings may be due to the addition of affective organisational commitment to the model and/or the fact that the study by Eisenberger was conducted on manufacturing employees (non-professional employees). More specifically, manufacturing employees may be more reliant on organisational support, where professional employees may be more reliant on the support of other colleagues within the profession. This way of thinking can be attributed to the notion that professional employees are often more committed to their profession as opposed to their organisation (Wallace, 1995). Therefore, the commitment of professional employees may be more significant when compared to manufacturing based employees. On the other hand, a lack of convergence in the literature may indicate that there are other variables that may potentially influence the model. This uncertainty within the literature highlights an implication for practice (to be discussed in section 7.6) and the need for further research into the impact of POS on the innovative behaviour of nursing employees.

The results from this study also add to previous studies about the relationship between LMX and innovative behaviour, as well as provide further clarification. The basic premise of SET suggests that when employees form effective workplace relationships and networks, a mutual benefit for employees, supervisors and the organisation can be realised (Cole et al., 2007; Cropanzano, & Mitchell, 2005; Maurer et al., 2002). As previously mentioned, Yuan and Woodman (2010) and Sanders et al. (2010) both found a direct and indirect relationship between
LMX and innovative behaviour, although the mediating factors used within each study were different. In contrast, this study found that there was only an indirect relationship between LMX and innovative behaviour through affective organisational commitment and POS ($\beta = .135$). As such, the findings from this study support Yuan and Woodman (2010) and Sanders et al. (2010), although both studies suggested a partially mediated model and this study found that affective organisational commitment and POS both completely mediated the relationship between LMX and innovative behaviour.

Moreover, the question arises as to why the results from this study differed from past research. It is possible that because different intervening variables were applied, there was a different impact on the relationship between LMX and innovative behaviour. Another explanation could be due to the context of nursing, for example, nursing supervisors are in charge of the hospital ward, so they are often busy with overall management and do not have time to partake in the direct duties related to patient care (clinical duties). As such, the results from this study suggest that support for the innovative behaviour of nursing employees may come in the form of other workplace network ties as opposed to a nurse’s relationship with their supervisor.

However, it is important to highlight that the supervisor still undertakes a vital role in contributing to developing the innovative behaviour of nursing employees. For example, this study supports previous literature suggesting that LMX is positively related to affective organisational commitment ($\beta = .279, p < .001$) and POS ($\beta = .289, p < .001$). In particular, Maertz et al. (2007) found that the strength of the relationship between a supervisor and subordinate will impact on an employee’s commitment to the organisation. On the other hand, Wayne et al. (2002) found that LMX was positively related to POS. Furthermore, it has already been established within this discussion that affective organisational commitment is related to
innovative behaviour. Therefore, this alludes to another implication for practice (to be discussed further in section 7.6); for example, organisations aiming to gain a competitive advantage through innovation will develop quality LMX relationships to improve affective organisational commitment and POS, which should contribute to fostering the innovative behaviour of nursing employees.

This study contributes new knowledge about the relationship between interactional justice and the innovative behaviour of nursing employees. As previously mentioned, there were no studies found that examined either the direct or indirect relationship between interactional justice and innovative behaviour. This thesis found that interactional justice was not directly related to innovative behaviour and because there was not enough empirical support the path was removed. However, an indirect relationship was found between interactional justice and innovative behaviour through several paths ($\beta = .054$). This indirect relationship highlights an implication for management because while interactional justice is not directly related to innovative behaviour, it is still indirectly related (to be discussed further in section 7.6).

To explain the indirect relationship, interactional justice was positively associated with affective organisational commitment, which was related to innovative behaviour. Additionally, interactional justice was indirectly related to innovative behaviour through LMX and affective organisational commitment. Therefore, this study contributes new knowledge about the relationship between interactional justice, several intervening variables and innovative behaviour. Moreover, this study supports research by Luo (2007) which found that interactional justice was directly and positively related to LMX. One explanation for these findings could be if employees perceive that the interactions they have in the workplace, in this case with the supervisor, are fair; this is likely to positively influence the LMX relationship and the affective organisational commitment of employees.
It was expected that procedural justice would more likely be related to organisational type factors such as POS and affective organisational commitment, as opposed to individual factors such as innovative behaviour. This expectation came from two studies. First, Niehoff and Moorman (1993) suggest that procedural justice would mostly affect organisational-level factors. Second, Luo (2007) suggests that interactional justice would mostly affect individual-level factors. Therefore, the findings from this study supports past literature outlining that procedural justice is positively related to POS ($\beta = .601$, $p < .001$), as opposed to an individual-level factor such as LMX. Moreover, procedural justice was a strongly correlated with POS and there was an indirect relationship between procedural justice and innovative behaviour through POS and affective organisational commitment ($\beta = .049$).

The path between procedural justice and innovative behaviour has two strong and highly significant relationships. One relationship is between procedural justice and POS and the other between POS and affective organisational commitment ($\beta = .465$, $p < .001$). The relationship between POS and affective organisational commitment has already been discussed, so the relationship between procedural justice and POS will now be examined. To explain the path, if employees perceive that organisational policies and procedures are fair they are more likely to perceive the organisation to be supportive (Erdogan, 2006; Niehoff & Moorman, 1993). The challenge for management is, therefore, to develop policies and procedures that meet all the legal requirements, while still being perceived as fair to employees. Therefore, this highlights an implication for practice (to be discussed further in section 7.6), because if management can improve procedural justice this should have a positive influence on POS, which should have a positive influence on affective organisational commitment; and in the end is likely to positively contribute to improving innovative behaviour in the workplace.
As previously discussed, an innovative organisational culture was also found to be a predictor of POS. The examination of this relationship is important, mainly because there is little empirical research examining the antecedents of POS, particularly in a nursing context (Rhoades & Eisenberger, 2002). Similar to procedural justice, there was a positive and significant path between an innovative organisational culture and innovative behaviour through POS and affective organisational commitment ($\beta = .009$). As mentioned, Dobni (2008) suggested that for innovative behaviour to be fostered, the organisation must begin by proving to employees that they value innovative shared values, systems and beliefs. Therefore, it was expected that there would be a direct, significant and positive relationship between an innovative organisational culture and the innovative behaviour of nursing employees. However, the results from this study found that an innovative organisational culture was directly related to POS ($\beta = .115$, $p < .05$), but not to innovative behaviour ($\beta = .045$, $p > .05$). There are numerous reasons for the lack of a direct relationship between an innovative organisational culture and innovative behaviour, which will now be discussed in further detail.

The innovative organisational culture instrument was developed by O’Reilly et al. (1991). As previously mentioned, this study used the innovation sub-scale of the organisational culture instrument to measure the innovative organisational culture that has formed within the organisation. This instrument was initially tested on MBA students and was developed to examine organisational culture in accounting firms. Therefore, it may be that the absence of a relationship between innovative organisational culture and innovative behaviour can be explained by the lack of the generalisability of the instrument and the context of the research. For example, the instrument was developed to measure organisational culture in professional accounting firms, so this instrument may be ill suited to examine organisational culture in a professional nursing context. As such, while nurses and accountants are both considered as
professional employees, the two cultures of these professional groups may be different in many ways.

For instance, literature about professionals in the workplace provides a way of viewing behaviour. One of the hallmarks of being a professional is that employees are expected to continually increase their knowledge base, which should provide a foundation to improve their performance in the workplace (Friedman, 2001; Lega & DePietro, 2005). As previously mentioned, literature about innovative behaviour suggests attaining and developing knowledge is one of the factors required to facilitate innovative behaviour (Åmo, 2006; Carmeli & Spreitzer, 2009). However, the attainment and use of knowledge highlights one area where nursing and accounting professional organisational culture may differ.

Due to the nursing shortage, nurses are sometimes not able to attend compulsory training to add to their knowledge base and often do not have time to attain information, knowledge and resources in the workplace (Farr-Wharton et al., 2011; Knowles, O’cathain, Morrell, Munro, & Nicholl, 2002). In particular, the increased accountability, high demand on nurses and the low amount of resources available often results in nurses not having the time or resources to be innovative in the workplace (Åmo, 2006). Therefore, it may be that these factors have created an environment that is not reflective of an innovative organisational culture and as such the results suggest no significant impact on innovative behaviour.

Taking into account the factors discussed in the previous paragraph, the clear difference between accountants and nurses, is that most accountants are expected to be innovative in the workplace. Such expectations about being innovative are then often tied to performance indicators and are fostered and facilitated by management (Shafer, Park, & Liao, 2002). On the other hand, while hospital management may see the benefit in fostering the innovative behaviour
of nursing employees, this is yet to become embedded in the organisational culture and seems not to be tied to any specific performance indicators. The factors mentioned highlight some of the differences between professional nursing and accounting employees and provides support that the organisational culture instrument designed to examine professional accountants may not be well suited to examine the innovative organisational culture of nursing employees.

It is clear from the literature that workplace social relationships/ties are particularly important for gathering information, knowledge and resources in the workplace. Therefore, it was expected that the strength of workplace ties would influence the access an employee has to information, knowledge and resources to support innovative behaviour. As such, because information, knowledge and resources can be used to support innovative behaviour, it was expected that tie strength may impact on the innovative behaviour of employees. However, there was no research with the exception of Xerri and Brunetto (2011) that has empirically tested the relationship between tie strength and innovative behaviour. The study by Xerri and Brunetto examined engineering employees and found a significant and positive relationship between tie strength and innovative behaviour. This study supports the findings by Xerri and Brunetto outlining that there is a direct ($\beta = .281$, $p < .001$) and indirect ($\beta = .118$, $p < .05$) relationship between tie strength and innovative behaviour. Additionally, the findings from this study provide an implication for practice and contribute new knowledge about the impact of tie strength on the innovative behaviour of nursing employees.

The findings from this study highlight a possible issue with the current strength of workplace ties in the nursing profession within Australia. For example, as highlighted in table 6.3, when asked about the strength of ties in the workplace, the average response from nurses reflected that networks in hospital wards consist predominantly of strong ties (mean = 4.76, S.D = .71). However, past literature highlights the benefits of both strong and weak ties, particularly
for organisations attempting to facilitate and foster the innovative behaviour of employees (Burt, 1992; Granovetter, 1973; Hansen, 1999; Krackhardt, 1992; Levin & Cross, 2004). Therefore, a gap has formed between what past literature prescribes as an ideal mixture of workplace ties for supporting innovative behaviour and the current workplace ties of nursing employees working within an Australian context. The gap between theory and practice highlights an implication for practice about the mixture of workplace ties and their impact on innovative behaviour, which will be further discussed in section 7.6.

7.4 Contribution to the literature

This study has made several contributions to the literature. One such contribution is derived from the lack of empirical research that has examined the innovative behaviour of nursing employees. As mentioned, only the impact of transformational leadership (Reuvers et al., 2008) and empowerment (Åmo, 2006; Knol & van Linge, 2009) on the innovative behaviour of nurses has been examined. Therefore, this study contributes to the current body of literature by outlining, within a nursing context, that nurses that are affectively committed to the organisation will have a greater propensity to be innovative in the workplace. It is clear from the previous review of extant literature that affective organisational commitment is only one factor that relates to innovative behaviour, but provides impetus that even with appropriate amounts of knowledge and support that innovative behaviour may not be so prominent if employees are not emotionally attached to the organisation. In particular, this study contributes to the literature by examining a path model, which provides new knowledge about fostering the affective organisational commitment and innovative behaviour of nursing employees.

Another contribution to the literature is made with regards to the relationship between tie strength and innovative behaviour. This is because a review of previous literature found there was almost no empirical research that had examined the relationship between tie strength and
innovative behaviour, except for research by Xerri and Brunetto (2011). Research examining tie strength and innovative behaviour is important because workplace relationships provide a vehicle from which to transfer information, knowledge and resources that are beneficial for fostering innovative behaviour. Therefore, it is important to develop insight into the types of ties (relationships) present in a nursing context and the impact that such relationships have on the innovative behaviour of nursing employees. As previously mentioned, this study confirms past research by Xerri and Brunetto (2011), which found that tie strength was both directly and indirectly related to innovative behaviour. As such, this study contributes new knowledge to the literature suggesting that tie strength positively relates to the innovative behaviour of nursing employees. Additionally, the findings provide new implications for hospital managers and supervisors seeking to facilitate innovative behaviour in their hospitals and hospital wards.

There were no studies found that have previously examined the relationship between interactional justice and innovative behaviour. Therefore, although this study found there to be no significant relationship between interactional justice and the innovative behaviour of nursing employees, this still provides a new contribution to the literature. To further explain, interactional justice is a perception about a relationship or set of relationships, so it seems this perception is more likely to influence the workplace relationships and network ties required to support innovative behaviour. Although it was expected that interactional justice would influence innovative behaviour, a possible explanation may be that an employees’ perception about the fairness of interpersonal exchange may influence the relationships or networks in the workplace, which will then impact on how much information, knowledge and resources employees can attain to support innovative problem-solving and innovative behaviour in the workplace.
As mentioned, there is no shortage of empirical research that has separately examined affective organisational commitment (e.g. Bagraim & Sader, 2007; Carmeli & Freund, 2009; Meyer et al., 1990; Meyer, Irving, & Allen, 1998; Meyer et al., 2002; Shore et al., 2008; Shum et al., 2008) and innovative behaviour (e.g. Carmeli et al., 2006; De Jong & Den Hartog, 2007; Janssen, 2005; Kleysen & Street, 2001; Knol & van Linge, 2009; Sanders et al., 2010; Scott & Bruce, 1994a). However, there is a shortage of research that has examined the relationship between affective organisational commitment and innovative behaviour (Jafri, 2010). The study by Jafri examined employees in the service sector and found there to be a positive relationship between affective organisational commitment and innovative behaviour. However, the study was conducted on a small sample (N = 80) and was not conducted on nursing employees. Therefore, this study contributes to the literature by using a larger sample to confirm Jafri’s findings and contributes new knowledge about the influence of affective organisational commitment on the innovative behaviour of nursing employees.

As previously mentioned, there is some past literature that has found sample specific significant differences between public and private sector healthcare. This study contributes new knowledge about the line between public and private sector health care in Australia. Following a review of the literature, this study proposed that due to the blurring between public and private sector health care in Australia that there would be no sample specific significant differences between the public and private sector samples. In contrast to research findings by Zeffane (1994) and Brunetto et al. (2010), this study found no significant differences between public and private sector nursing employees’ perceptions and behaviour.

It would be naïve to think that there are no significant differences at all between public and private sector nursing employees. However, this study found no significant differences, with the eight constructs used, between the public and private sector. Therefore, it is acknowledged that
there will be some differences between public and private sector nursing employees; however, the line between the public and private has become blurred (Brown & Barnett, 2004) and, as Steane (1997) suggests, the differences between public and private are now more subtle. In summary, finding no significant differences provides some support that there are now fewer differences between public and private sector nursing employees.

7.5 Contribution to theory

This study makes two main contributions to theory, particularly to the theory regarding social exchange and professionals. The contribution to SET will be discussed first and this will be followed by the contribution to theory regarding professionals. The findings from this study confirm several underlying factors of SET. For example within organisations, if employees are satisfied with the outcomes of their workplace exchanges, they are more inclined to respond with greater performance in the workplace (Shaw et al., 2009). The findings from this study confirm SET research suggesting, for example, that perceptions of organisational support, organisational justice and LMX were all positively related to affective organisational commitment. Additionally, this study also confirmed that employees who are affectively committed to the organisation are more likely to respond with greater effort and in turn performance in the workplace. Examining these relationships provides a clear contribution to theory because these factors have never been analysed simultaneously, and so this study provides an enhancement to SET about how the concepts applied in this study relate to one another in a simultaneous model. More specifically, the main contribution to SET is that workplace social relationships can be used to foster the innovative behaviour of employees.

There has also been minimal research that has used SET as a lens to examine the social interaction and exchange between colleagues and work-based teams (Pascal, 2009). As such,
this study adds to the understanding about SET, particularly about the exchange between colleagues in a workplace. More specifically, past studies have examined the relationship between the employee and the organisation (POS and affective organisational commitment); and between employees and their supervisors (LMX). This study adds to the understanding about SET, by examining the relationship between colleagues using the interactional justice and tie strength concepts. This study contributes to the understanding about SET between colleagues and work-based teams with findings that suggest interactional justice is directly and positively related to the supervisor-nurse relationship and the affective organisational commitment of nurses. As well as the finding that tie strength is directly and positively related to nurses’ affective organisational commitment and innovative behaviour in the workplace. Hence, the insight is that nursing employees’ perception of interactional equity and the strength of relationships relating to their work-based teams are important if organisations are to foster affective organisational commitment and innovative behaviour in the workplace.

There have been few studies that have examined nursing employees using a SET lens. Schaufeli, Van Dierendonck and Van Gorp (1996) suggest that a lack of reciprocity with regards to workplace social exchange between nurses, as well as the relationship nurses have with their supervisor and employing organisation, infers inequality in the relationship. Such inequality can lead to nursing employees having low morale and low levels of organisational commitment. As such, this study contributes new knowledge about using SET as a framework for examining the innovative behaviour of nursing employees. This study also provides insight about the importance of workplace relationships that are built around mutual trust and reciprocity and the impact such relationships can have on the affective organisational commitment and innovative behaviour of nursing employees.
This study contributes new knowledge and understanding about professionals in the workplace. As mentioned, the changes in public management over the past three decades have shifted hospital management from a traditional bureaucratic model to a new, more contemporary public management model (Felts & Jos, 2000; Parker & Bradley, 2000). The contemporary model encompasses many management strategies observed in the private sector. Additionally, the changes in public management re-positioned hospitals to be more flexible, and focussed on outcomes, efficiency and productivity. The changes in hospital management have seen the accountability of nursing employees increase and as a result seen their autonomy decrease. As such, the changes to the context in which nurses operate will, more than likely, change the goals, perceptions, expectations and behaviour of professionals in the workplace. The results from this study contribute to this understanding, outlining that, amongst other things; employees should be committed to the organisation and have an adequate amount of strong and weak ties if innovative behaviour is to be fostered. More to the point, there is past research that has identified that increases in accountability and the reduction of autonomy have decreased nursing employees’ commitment to the organisation (Brunetto & Farr-Wharton, 2004a). Therefore, the clear overall contribution to the understanding about professionals is that workplace relationships and affectively committed employees are vital for fostering the innovative behaviour of professional employees such as nurses.

However, there is research to suggest that many health care organisations are still structured in the traditional bureaucratic models (Farr-Wharton et al., 2011; Lega & DePietro, 2005). The traditional bureaucratic models focus on control and traditional forms of management that are not typical of an environment that supports and facilitates innovative behaviour (Cameron & Quinn, 1999). Therefore, while public policy and expectations on professionals may have changed, it seems that hospitals require further change if an environment
is to be created that fosters efficiency, effectiveness and innovative behaviour in the workplace. In particular, these changes have implications for practice because hospital management need to ensure the changes in public policy are reflected in the hospitals policies, procedures and practice. In addition, this study contributes new knowledge to theory about aligning the practice and behaviour of nursing employees with the goals of a new more contemporary public management strategy.

This study also provides further contribution to the theory about professionals; particularly about developing innovative behaviour, examining innovative behaviour and the context of nursing professionals. For example, there are many differences between nursing professionals and other occupations and professions (Brunetto et al., 2012). As previously mentioned, the differences between professional groups and other occupations indicate that it may not be appropriate to use some research scales (instruments) for some professions or occupations. For example, it may not be appropriate to use a scale developed for accountants on nursing professionals or it may not be appropriate to use a scale developed for the construction industry on the nursing profession. Therefore, because the current instruments used were not contextualised within the context of professionals and in particular nursing professionals, this provides an implication for theory.

More specifically, nurses, unlike some professionals and like others, operate in a strict bureaucracy where a supervisor (nursing unit manager) determines the idiosyncrasies of practice in each ward, which may contribute to or thwart innovative behaviour in the workplace (Maben et al., 2006). The issue is that nursing employees are professionals that have their own unique culture and ways of operating in the workplace (Laperrière, 2008). So, what may be appropriate to examine innovative organisational culture and behaviour of other occupations and professions may not be appropriate in the nursing profession. In particular, new or modified instruments
may be needed to measure innovative behaviour and its antecedents in the context of nursing employees. More to the point, such instruments, in the context of this study, should have their foundations in professional and social exchange frameworks. For example, the new instruments should provide a contextualisation that includes the importance of workplace relationships and which captures the idiosyncrasies of a professional nursing context.

The literature about professionals and the environment that nurses operate within provides information for understanding the relationship between an innovative organisational culture and innovative behaviour. For example, nurse culture is not just a function of being a professional, but is most likely also related to the sector skill shortages. To explain, a strong professional focus, particularly within nursing, is to use education and training in a clinical sense to develop the efficiency of nurses (Stievano, Jurado, Rocco, & Sasso, 2009). As mentioned, developing the innovative behaviour of nurses is one method of contributing to such efficiency (Knol & van Linge, 2009). However, the organisational context within Australia provides strong limits on nurses’ opportunity and ability to be innovative. Such limits are caused by, amongst other things, the shortage of skilled nurses and current budget constraints. These limits may thus erode the impact that an innovative organisational culture has upon the innovative behaviour. Therefore, in contrast to previous research the results from this study indicate that an innovative organisational culture was not significantly correlated with the innovative behaviour of nursing employees, hence the professional lens and the environment that nurses operate within provides one way of understanding these results.

7.6 Implications for practice

If hospital management can create an environment where nurses have access to the information, knowledge and resources they require when solving work-based problems innovatively, this should have a positive influence on the effectiveness and efficiency of nurses
in the workplace. The maximisation of employee efficiency and effectiveness should in-turn improve overall organisational performance and therefore should positively affect patient outcomes, such as patient satisfaction and safety (Laschinger et al., 2001). However, the question arises as to whether there are performance indicators in place for hospital management/supervisors that are associated with creating an environment that supports innovative behaviour. More specifically, because innovative behaviour is a management driven process, it is important that managers and supervisors performance indicators are in line with facilitating the commitment and innovative behaviour of nursing employees.

Therefore, due to the fact that innovative behaviour is a management driven process, the facilitation of innovative behaviour provides implication for practice and hospital management. For example, according to SET, supervisors can create an environment that fosters reciprocity and mutuality, which should develop a foundation from which to build workplace relationships that can be used as a vehicle for transferring information, knowledge and resources to support innovative behaviour (Brunetto et al., 2008; Sin et al., 2009; Whitener et al., 1998). However, as mentioned not only should nursing employees be held accountable and have performance indicators that are aligned with developing innovative solutions to work-based problems, but supervisors/management should also be held accountable and have performance indicators that are aligned with managing innovative behaviour in the workplace.

There is a clear argument that supports the need for supervisors and management to be held accountable for the goals of the organisation, particularly within a hospital setting. For example, within hospitals the government sets the overall policy objectives to be met; however, it is management that decides the processes and goals that will be used to achieve such objectives. Therefore, as previously mentioned, if the objective set by government is to increase the accountability, effectiveness and efficiency of hospitals, a change in perceptions and practice
at the street-level (nurses and their supervisors) will be required (Dunleavy & Hood, 1994). However, due to the bureaucratic nature of hospital management, the changes may be difficult to implement due to the bureaucracy of red tape (Brewer & Walker, 2010). As such, it may be that the bureaucratic rules and routines that are associated with red tape and which create delays in organisational processes may reduce individual and organisational performance. Therefore, while red tape may make it more difficult to improve effectiveness and efficiency, if performance indicators are not linked to factors such as innovative behaviour, the street-level bureaucrats have little to no incentive to be innovative in a challenging bureaucratic context.

As previously mentioned, the shortage of nurses highlights the importance of maximising the efficiency and effectiveness of nursing employees by developing an environment that fosters innovative behaviour. However, it may be that the shortage of skilled nurses means that nurses have a reduced workplace network from which to gather information, knowledge and resources (Bartram, Joiner, & Stanton, 2004) to support their innovative behaviour. Also as previously mentioned, the shortage of nurses may also imply that nurses do not have the time to identify workplace problems or create solutions for such problems. As such, the issues associated with the shortage of nurses outline another implication for management and provides further support as to the importance of developing effective workplace relationships, so that nurses have access to and can attain information, knowledge and resources available in the organisation.

Moreover, the findings from this study depict that a number of factors, including tie strength, interactional justice, LMX and POS indirectly influence nurses’ innovative behaviour through affective organisational commitment. The findings provide implications for hospital management seeking to meet the goals of new public management, that is, to encourage an environment that promotes and facilitates efficiency, outcomes and productivity in the workplace. As such, successful hospital managers will create an environment that aligns the
goals, practice and behaviour of nursing employees with the goals of the organisation and public policy (Casida & Pinto-Zipp, 2008). However, it should not be discounted that creating an environment that aligns employee practice with organisational goals requires some form of organisational change and that changing an organisation has manifested as a major challenge for management (Elias, 2009). Therefore, management needs to, amongst other things, develop affective organisational commitment in the workplace if employees are going to put in the extra effort to be innovative.

The results further highlight that there are several factors that influence contribute to creating an environment that fosters the affective organisational commitment and innovative behaviour of nursing employees. More specifically, hospital managers that can develop high quality LMX relationships in the workplace, where both weak and strong ties are developed, where nursing employees perceive the interactions they have in the workplace as being fair, and where nursing employees perceive that the organisation is supportive and cares about their wellbeing; will have developed an organisational framework to foster and facilitate the affective organisational commitment and innovative behaviour of nursing employees. On the other hand, hospital managers that can develop high quality LMX relationships, and where employees perceive the organisation’s policies and procedures as being fair; will have developed an organisational framework that enhances nursing employees perceptions of organisation. By improving employee perceptions of the organisation this should contribute to their commitment to the organisation and thus their willingness to be innovative in the workplace.

At this stage it is also important to highlight that the direct relationship between tie strength and innovative behaviour also provides an implication for practice. For example, the findings suggest a direct and positive relationship between affective organisational commitment and innovative behaviour. As previously mentioned, the findings outline that there is a
difference between what is prescribed as being a good mix of weak and strong ties and what was actually found within this research. More specifically, the ties within the three hospitals examined were predominantly strong, while strong ties are required to support innovative behaviour, so too are weak ties (Burt, 1992; Granovetter, 1973; Hansen, 1999; Krackhardt, 1992; Levin & Cross, 2004). Moreover, it is the role of management to facilitate the development of workplace relationships. For example, one way management can foster workplace relationships is to develop formal relationships within an organisation, which provide a foundation from which to develop social workplace relationships (Cole et al., 2007). Therefore, the lack of weak ties highlights an implication for practice, because management are required to foster the development of both weak and strong ties if nursing employees are to have an appropriate workplace relationships from which to gain new information and knowledge about a particular problem (from weak ties) and the support/resources required to solve the problem (from strong ties).

To add to the argument, the findings suggest that an employee’s perception of fairness regarding organisational policies and procedures (procedural justice) was found to have a major impact on POS. Therefore, an implication for practice and management is to develop effective relationships where an employee’s perception of fairness is easily feedback and is clear to management. The development of effective workplace relationships will provide management with an understanding about employees’ perceptions (Thompson & Heron, 2005) and will provide information that can be used to improve POS and in turn affective organisational commitment and innovative behaviour. This implication also highlights an area for further research, because it is unclear exactly how procedural justice can be improved within the context of nursing employees.
On the other hand, an employee’s perception of fairness with regards to their interactions in the workplace was also found to be directly related to affective organisational commitment and LMX; and indirectly related to innovative behaviour. Similar to procedural justice, while interactional justice did not directly influence innovative behaviour, the results regarding the concept still provide an implication for practice. In particular, the results suggest that interactional justice positively influences affective organisational commitment, which directly influences innovative behaviour. Interactional justice also directly influences LMX, which directly impacts on affective organisational commitment and indirectly effects innovative behaviour. Therefore, management seeking to foster affective organisational commitment and innovative behaviour should develop a strategy that will work towards improving overall nursing employees’ perceptions of fairness regarding their interactions in the workplace. The improvement or maximisation of such perceptions should positively contribute to developing LMX, affective organisational commitment and in turn innovative behaviour in the workplace.

After considering what concepts may contribute to developing an environment that fosters high levels of POS, affective organisational commitment and innovative behaviour further implications for management are derived. For example and just to mention a few implications, how can management foster an environment that is rich in both strong and weak ties? How do they ensure that the most amount of nursing employees perceive organisational policies and procedures to be fair? How do they ensure that the most amount of nursing employees perceive their interactions within the workplace as being fair? How do they ensure that an innovative organisational culture is developed and how can such a culture be sustained? These questions for management highlight further implications for practice and outline some areas for future research (see also key implications for hospitals managers Table 7.3 below).
Additionally, while there is a body of research that has examined these questions, there is still a lack of empirical research that has examined these factors in relation to nursing employees.

**Table 7.3 Key implications for hospital manages**

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<tr>
<td>1</td>
<td>Focus on creating a framework that fosters the development of workplace relationships, including the organisation-nurse relationships, supervisor-nurse relationships, and relationships between other employees.</td>
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<tr>
<td>2</td>
<td>Innovative behaviour requires, amongst other things, knowledge. So, it is important to ensure nurses have an adequate amount of strong ties for problem solving and weak ties for novel information. Employees usually have adequate amounts of strong ties, so a solution may be to get nurses interacting between wards.</td>
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<tr>
<td>3</td>
<td>Committed nurses will often have a greater propensity to be innovative, so it will be beneficial to conduct regular ‘climate’ type surveys that assess the commitment of nurses and the factors that may be contributing to their level of commitment.</td>
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<td>4</td>
<td>A nursing employee’s perception of fairness in relation to organisational policies and procedures will greatly influence how they perceive the organisation. Hospitals promoting the development of good organisation-nurse relationships will seek constant feedback from employees about the equity of organisational policies and procedures.</td>
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<tr>
<td>5</td>
<td>Fostering creativity and innovative behaviour and creativity requires a suitable environment. Supervisors should be informed of the role they play in this environment. For example, they should support employees, not criticise attempts to provide innovative solutions to problems, and to facilitate the development of workplace relationships and the transfer of knowledge within and between hospital wards.</td>
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Innovative behaviour requires extra effort, that is, it is additional to a nurse’s already hectic list of daily duties. Hence, supervisors and the organisation should praise nurses for their innovative behaviour, which should be formally recognised with suitable rewards.

7.7 Limitations

This study contained some limitations that need to be highlighted and that should also provide some areas for possible further research. Additionally, it is important to take note of the studies limitations when interpreting the findings. As such, this section will outline and discuss some overall limitations of the study, while the next section will discuss some possible areas for further research. First and foremost, a structural equation model is often developed to test a number of causal relationships; however, this study used cross sectional data. Cross-sectional data is known to not be ideal for testing causal relationships and for deducing generalisable patterns (Bowen & Wiersema, 1999). However, while cross-sectional data does pose as a limitation, it is a common practice to use such data.

The two-step, six-stage SEM approach also poses a limitation to the study. More specifically, there is a concern that examining the model-fit of each individual measurement model and modifying/ re-specifying the models to improve fit may produce sample specific results (Byrne, 2010). In particular, the problem is that researchers may act opportunistically and capitalise on chance opportunities to increase model-fit. The capitalisation of chance opportunities is not good for replicability and generalisability, because this may see a relationship in one sample that is not present in other similar samples. To improve replicability of the final measurement model the data can be cross-validated; this involves splitting the
sample into two, using one half to develop the model/s and the second half to validate (Anderson & Gerbing, 1988; Hoyle, 1995; Kline, 2011). However, because the sample size for this study was on the borderline for being appropriate using a SEM model, the data was not cross-validated and as such this poses a limitation to the study.

The quantitative data used within this study provided a good examination into several antecedents of affective organisational commitment and innovative behaviour. However, there was a limitation associated with this approach. That is, while quantitative data can be used to measure relationships and to determine what are the relationships, such data cannot be used to explain why a relationship exists or does not exist (Denzin & Lincoln, 2003). In the context of this study, qualitative data may have been beneficial for determining why the relationship between an innovative organisational culture and innovative behaviour was not significant; or why the relationship between LMX and innovative behaviour was not significant. As such, a mixed-methods approach may provide a more in-depth analysis into the innovative behaviour of nursing employees.

As previously mentioned, it was expected that an innovative organisational culture would positively and significantly influence innovative behaviour. However, the results suggest that there was no significant relationship and it was suggested that one explanation may be that the instrument was not suitable for examining innovative organisational culture within a professional nursing context. This, therefore, highlights a limitation to using the innovation sub-scale of the organisational culture instrument in its current form. As suggested, a professional theoretical framework may provide an appropriate lens to modify the instrument to better suit an examination of nursing employees.
Another limitation of the studies generalisability is typical of a study focusing on networks, because it is difficult to measure outcomes in the context of an organisation when the data is collected from the organisation itself (this theory is known as the self-report bias) (Spector, 1994). Spector (1994) argues however, that as long as there is enough supporting evidence of the hypothesis then the self-report method is practical when outlining trends and to provide a useful insight into the thoughts and perceptions of the people completing the survey. Therefore, although this study will provide results from three hospitals and a variety of different hospital wards, the generalisability of the results is limited.

Moreover, another potential limitation arises because the nursing employees who participated in the study were predominantly female. However, this was unavoidable due to the fact that men only represent approximately 10 per cent of the registered nursing workforce (Shields, Hall, & Mamun, 2011). To explain, on the one hand, a sample made up mostly of females could be seen to skew the results. On the other hand, nursing is a female dominated profession, so having a sample that was predominantly female is less of a limitation and more of a reflection of the current nursing workforce.

7.8 Areas for further research

The results from this study open up a number of areas that are recommended for further research. The methodology undertaken for this study was based on a post-positivist approach, although rich in quantitative findings, this methodological approach lacked the in-depth qualitative findings that an interpretivist style study may obtain. Furthermore, although the model proved advantageous in this study, further research using a larger sample of employees and a larger sample of organisations will increase the generalisability of the results and provide further clarification and refinement of the model. Greater in-depth research, possibly including a longitudinal approach, into the organisational factors that impact on an employee’s innovative
behaviour is also recommended. A longitudinal approach will improve the generalisability of the results and the ability to be able to test a set of causal relationships.

In addition, this study was only investigated from an organisational perspective. Therefore, an examination into innovative behaviour within several hospital wards might provide an alternative explanation of the factors that impact on a nursing employee’s innovative behaviour. It would also be helpful to conduct further research into a more gender-balanced sample to compare the results. However, the general population of nursing employees consists 90 per cent of females, as such it may be difficult to increase the number of male nurses in any research (Skinner, Van Dijk, Elton, & Auer, 2011).

The model tested within this study specifically looked at the antecedents of POS, affective organisational commitment and innovative behaviour. However, to provide a greater understanding into the research model, further research is required into the antecedents of the exogenous (independent) variables used within this study. Moreover, as previously mentioned, a relationship between a set of exogenous variables and their impact upon an endogenous variable/s may be altered in some way by an intervening variable. Therefore, research using other possible interviewing variables may provide further insight into the innovative behaviour of nursing employees. To provide one example, past literature suggests that new knowledge is vital for organisations seeking to foster innovative behaviour. However, an employee’s level of sociability (social skill) may impact on how well the employee can attain new knowledge in the workplace. In summary, employees’ sociability may be one construct that provides insight into the innovative behaviour of employees and as such may be one suitable area for future research.

This study provided a contribution to the literature about the similarities between public and private sector nursing employees. The literature provides support that the notion of statistically significant differences between public and private sector employees is still a
contested area of research. More specifically, there is some literature to suggest there are still significant differences between public and private sector health care (Brunetto et al., 2010; Zeffane, 1994) and other literature to suggest no significant differences (Hegney et al., 2006; Hegney et al., 2003; Rodwell & Teo, 2004). Additionally, it is clear that the similarities and/or differences between the public and private sector is a contested terrain, but one explanation of this is the different variables that have been examined in the studies to date. Another possible reason may be that some studies have been conducted at the individual-level and others at the organisational-level. The mixture of results highlights the need for further research into the similarities and differences between nursing employees working within an Australian context.

This research, based on past literature, expected to find a significant relationship between an innovative organisational culture and innovative behaviour. As previously mentioned, there are several possible reasons for the lack of a direct relationship between an innovative organisational culture and innovative behaviour and the lack of such a relationship highlights a possible area for future research. For example, the issue may be with the instrument itself, while there were no issues with reliability, validity or fit; there may have been issues with using the instrument on nursing employees. As such, further research is required to validate the use of the innovative organisational culture instrument for nursing employees. As suggested, a professional theoretical framework may provide an appropriate lens from which to modify the instrument to better suit nursing employees.

The findings from this study suggest that procedural justice influences an employee’s perception of organisational support. However, as previously mentioned, there is a lack of knowledge about how to develop an environment, within a nursing context, where the most amount of employees perceive the organisational policies and procedures as being fair (Tangirala & Ramanujam, 2008). Therefore, further research is required into the antecedents
and outcomes of the procedural justice of nursing employees. Such research will provide information for researchers and practitioners alike who are aiming to improve perceptions of fairness, perceptions of organisational support, affective organisational commitment and innovative behaviour.

As previously mentioned, there is a shortage of past literature that has examined social exchange relationships between colleagues and teams in the workplace. In particular, this study provided an examination into the relationship between nursing employees (colleagues) and as such was one attempt to address the gap in the literature. However, there still remains a lack of empirical research that has examined team-based social exchange (Cole, Schaninger, & Harris, 2002; Scott & Bruce, 1994b). Moreover, the development of team relationships based on trust and reciprocity should have a positive influence on the innovative behaviour of employees (Scott & Bruce, 1994b). Therefore, while there is some literature that has examined team-based exchange and innovative behaviour (Scott & Bruce, 1994b), a gap in the literature still remains. More specifically, there is a paucity of knowledge about developing reciprocity and mutual trust in team-based exchange, as well there is a lack of understanding about how team-based exchange influences innovative behaviour. Furthermore, while Scott and Bruce (1994b) found that team-based exchange is an important predictor of innovative behaviour, this relationship is yet to be tested on nursing employees.

7.9 Conclusion

Despite the extant literature on innovation and innovative behaviour in the workplace, empirical research on innovation within health care and on nursing employees is limited. In particular, examining the innovative behaviour of nursing employees within the health sector is important to hospitals and hospital management seeking a competitive advantage. Additionally, examining the innovative behaviour of nursing employees is important because it is considered
as vital to achieving organisational goals and the goals of new public management and it is evident that there is a clear gap in the literature. The aim of this study was to address the gap in the literature by examining some of the factors that affect a nursing employee’s affective organisational commitment and innovative behaviour in the workplace. A proposed model of these factors was tested and confirmed. The findings suggest several factors proposed in the model either directly or indirectly affected an employee’s innovative behaviour. To ensure clarity, the main contributions relating to the results depicted in Table 7.1 will be discussed in in the following paragraphs. This study provided insight into how hospitals can foster the efficiency and effectiveness of nursing employees and thus contributed to the understanding about a current and important workplace issue. With this said, the main overall contribution is that social relationships in the workplace can be used to foster innovative behaviour.

The lack of knowledge about the antecedents relating to the innovative behaviour of nurses has been previously discussed. The contribution that is made in this thesis is that there are several social exchange mechanisms (social relationships in the workplace) that positively influence nurses’ innovative behaviour. In particular, there are three main contributions that can be highlighted. First, there is an important contribution to the literature about the antecedents of innovative behaviour. Second, there is an important contribution to theory because the mechanisms of SET can be used to foster innovative behaviour. Third, there is a contribution to practice as managers can utilise this information when aiming to develop a workplace environment that fosters innovative behaviour. The contributions relating to the connection between social relationships in the workplace and nurses’ innovative behaviour, and their valence will now be discussed in more detail.

An examination of the antecedents and outcomes of affective organisational commitment in the context of nursing is the first contribution that will be discussed. Such an examination
contributes predominantly to the nursing literature and practice. For example, as mentioned, a review of the extant literature revealed no studies that have examined the impact of affective organisational commitment on the innovative behaviour of nurses. To add to this, no studies have simultaneously tested the impact of POS, LMX, interactional and procedural justice, tie strength and an innovative organisational culture on nurses’ affective organisational commitment. Therefore, the contribution to the literature and practice is that to foster the innovative behaviour of employees, hospitals must first ensure that, amongst other things, nurses are emotionally attached to the organisation and have adequate social relationships in the workplace to be able to attain the information, knowledge and resources to support the innovative process. Without the attachment to the organisation, it is likely that nurses will be less inclined to undertake the extra role of innovative behaviour. Then it becomes clear that it does not matter if nurses have access to ample information, knowledge and resources, if they are not committed they will not extend themselves in attempt to be innovative. To explain, in the context of hospitals, being innovative is not a task that is included into a nurse’s position description or daily duties for that matter. Hence, hospital management seeking to foster innovative behaviour must ensure that nurses have a number of things that will assist and motivate them to be innovative. For example, considering the constructs examined in this thesis, they do need adequate social relationships in the workplace, but more importantly they must be committed to the organisation, so that they want to work towards contributing to improving organisational efficiency and effectiveness.

As mentioned, the relationship between tie strength and innovative behaviour was positive and significant. The contribution of this finding is that this relationship has only previously been tested by Xerri and Brunetto (2011) on a small sample of engineers, so this thesis adds a contribution with findings that such a relationship is also important in a nursing
context. This is an important contribution to the existing body of knowledge and to nursing practice because as per the extant literature, having a combination of strong and weak ties is vital for the development of innovative behaviour. Therefore, the results from this study imply that the majority of nurse ties could be considered as strong and as such to better foster innovative behaviour hospital management may need to develop a framework that fosters the creation of weak ties. Weak ties are important, in addition to strong ties, because they provide nurses with access to new ideas and novel information. As one example, creating weak ties may include something as simple as informal events that bring together nurses from different wards.

Another key contribution of this thesis is derived from examining the connection between interactional justice, procedural justice and innovative behaviour of nurses. As mentioned, a review of the existing literature revealed no studies that have previously examined the impact of interactional justice on innovative behaviour, and only one study by Janssen (2004) that has examined the impact of procedural justice on innovative behaviour, although this study examined the perception of managers. Therefore, the main contribution is derived from examining the connection between procedural justice, interactional justice and innovative behaviour from the perspective of nurses. More to the point, the findings outline that there were no directly significant relationships between procedural justice and innovative behaviour, or between interactional justice and innovative behaviour, although as mentioned there were indirect effects. The contribution is that procedural and interactional justices are important because they are strongly related to factors such as POS and affective organisational commitment that are significantly connected to innovative behaviour.

With this in mind, hospital management with the goal of fostering employee innovative behaviour need to regularly assess these social relationships to determine if they are having the desired impact on POS and affective organisational commitment and indirectly innovative
behaviour. To better explain this point, it is best to refer back to Gouldner’s (1960) notion of reciprocity, if the perception of nurses is inequity in relation to organisational policies and procedures (procedural justice) then the outcome is likely to be a negative effect on their perception of organisational support. The flow on effect is that if they perceive that the organisational policies and procedures are unfair and that the organisation is not very supportive, the reciprocation over time is likely to be less of an emotional attachment to the organisation (less committed) and thus such employees are less likely to have a propensity to be innovative.

The same can be said for nurses’ perception of the fairness of workplace relationships (interactional justice); if there is perceived inequality then over time the reciprocation by nurses will be less commitment to the organisation. To explain, if nurses’ perceive that there is fairness to their relationships, so in a sense they feel that they have good quality relationships, then they are more likely to feel obligated to reciprocate in the form of an improved perception of the relationship they have with their supervisor and/or their emotional attachment to the organisation. The contribution for hospital management, literature and SET, therefore, converge at this point and hinge on the notion of reciprocity. For example, based on the findings and prior literature, it is important to focus on, amongst other things, the development of social relationships in the workplace (e.g. procedural and interactional justice, supervisor-nurse relationships, organisation-nurse relationship, and nurse-nurse relationships) if hospital management are to develop affectively committed nurses that have a propensity to be innovative in the workplace.
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APPENDIX ONE: RESEARCH PARADIGMS (INTERPRETIVISM, PRAGMATISM, AND POST-POSITIVISM)

Interpretivism

Interpretivist research is associated with other research paradigms, such as constructivism and phenomenology. Some scholars argue that positivism is inadequate for the study of human social interactions, because people attach their own meanings to events and the world they operate within. One such school of thought is interpretivism. Ontologically, interpretivism assumes multiple, subjective, socially constructed realities (Guba & Lincoln, 1994). Interpretivism is based on the epistemological assumptions that ‘knowledge’ is based on the perception of the individual, and is context dependent; time-bound; and value-laden. From an axiology perspective, interpretivism strives to make sense of the meaning people find in their own lives and situations (Creswell, 2003). Methodologically, interpretivists generate theory inductively through the identification of themes or patterns from “a rich and complex description of how people think, react and feel under certain contextually specific situations” (Cavana, Delahaye, & Sekaran, 2001, p. 8). Interpretivists also make no claim to be able to generalise from their findings, as they are focused on understanding specific contexts rather than generating universal laws (Lincoln & Guba, 2000).

Additionally, interpretivist researchers aim to understand the way people think, construe and conceptualise events. Cook and Reichardt (1979) suggest that field experiments need to include qualitative research to describe and clarify the context and conditions in which research is conducted. Furthermore, interpretive research seeks to understand a situation and then tests and modifies this understanding until an interpretation is reached (Kaplan & Duchon, 1988). Jones and Noble (2007) suggest this can be achieved through a grounded theory where the
researcher begins the study with a mind open to the data and information possibilities. While the interpretivist method seeks to understand why something occurs, it cannot be generalised in order to predict human behaviour (Neuman, 2011). An interpretivist approach would not be best suited to this study, because it cannot be generalised to predict human behaviour or in the context of this study the behaviour of nursing employees.

**Pragmatism**

Pragmatists prescribe that a hypothesis or proposition is only accepted (considered true) if the theory works in practice. To understand how the theory works in practice, pragmatism links both theory and the procedure of implementing theoretical knowledge into practice. Therefore, pragmatists propose that theory and practice are not separate; instead theories are considered as the frameworks and tools for both research and practice alike. Pragmatists also argue that when undertaking research that the research questions are significantly more important when compared to the philosophical paradigm or the methodological approach. Furthermore, pragmatic researchers will often use whatever paradigm and methodology they perceive as available and able to help ascertain answers to their research questions. Pragmatism as a paradigm examines actions, situations and consequences unlike post-positivism which examines antecedent conditions (Morgan, 2007).

To provide further understanding into pragmatism the assumptions associated with the paradigm will now be discussed. Ontologically pragmatism assumes that “truth is what works at the time; it is not based on a strict dualism between the mind and reality completely dependent of the mind” (Creswell, 2003, p. 12). From an axiology perspective, pragmatists suggest that values of the researcher undertake a pivotal role in influencing how the research will be conducted, the conclusions that will be drawn. Epistemologically, pragmatism is based on the idea that it is acceptable to utilise both objective and subjective viewpoints when examining a
particular research problem in a single study. The methodological assumption outlines that pragmatists will use a combination of inductive and deductive processes when examining a research problem in a single study (Alise & Teddlie, 2010). Although a pragmatist approach may be appropriate for this study, the research design is deductive by nature and does not include an inductive component. Hence, a pragmatic paradigm is not ideal for use in this study, which lends support to reviewing the positivist and post-positivist paradigms.

**Post-positivism and its relation to positivism**

Until recently, positivist research methods have dominated social science research. In particular, Feldman (1998) goes as far as to suggest that even though the positivism ideal has been rejected by philosophers for more than half a century, current research books still associate positivism with quantitative research. For example, Newman and Benz (1998); Babbie (2007); and Tashakkori and Teddlie (1998) all refer to positivists as quantitative researchers. However, some suggest that this generalisation is incorrect, because while positivist research can often be associated with being quantitative, it is not always the case, especially with the introduction of post-positivist research. Ryan (1995) proposes that even though research about post-positivism is growing, its application within empirical literature is still lacking and researchers still find it difficult to attain funding for post-positivist research. On the other hand, other researchers specifically suggest that positivism is no longer valid and should be replaced by post-positivism (Clark, 1998; Letourneau & Allen, 1999). It is therefore important to discuss both positivist and post-positivist research, which can be explained as conceptual frameworks created in a moderately controlled environment that produces replicable and generalisable data (Guba & Lincoln, 1994).

To further explain, positivists believe that reality can be observed through the lens of the researcher and then explained logically and rationally making sociology almost as scientific as
chemistry or physics (Babbie, 2007). In order to create such an environment and be able to generalise results to predict human behaviour, positivists and post-positivists abide by strict scientific guidelines when conducting research. Such methods, more often than not, include the use of independent and dependent variables to test a particular hypothesis or set of hypotheses. However, while common, this is not the case in all positivist and post-positivist research (Ford & Ogilvie, 1996).

Post-positivist research is thought to simplify and control the social world, creating a more convincing analysis of reality when compared with positivism. Ontologically speaking and when considering reality, it is important to note that post-positivists abide by the theory of critical realism (Clark, Lissel, & Davis, 2008). Critical realism refers to the belief that there is a reality that is independent of the world's current thinking (Fleetwood, 2005). Post-positivist critical realists suggest that all observations are not a perfect description of reality and contain some errors (Clark et al., 2008). The distinction between positivism and post-positivism now becomes clear; the goal of positivism was to examine factors and hypothesise about the truth of reality. In contrast, post-positivists suggest that to understand the truth about reality is unrealistic and that the importance of research lies in providing the best possible understanding of reality.

Another difference between positivism and post-positivism is the theory that objectivity is a characteristic of a researcher. For example, positivists suggest that researchers are objective in their approach (Wicks & Freeman, 1998). In contrast, post-positivists suggest that this is unrealistic and instead that an understanding or observation of reality is provided through the researchers own lens or biases of reality (Clark, 1998). Post-positivist researchers identify causal relationships between variables from a critical perspective, building on other research in
order to increase the accuracy of observing and predicting human behaviour (Sale & Brazil, 2004).

The development of post-positivism facilitated the acceptance and use of qualitative research, its incorporation into research methodologies and acceptance for publication into top ranking journals (Letourneau & Allen, 1999). As such, post-positivist researchers, unlike positivists, do not reject qualitative data or information derived outside of quantitative methods. Post-positivists in contrast to positivists apply a modified deductive approach, which means that qualitative data does not have to be excluded from the study and can be used to support or inform the quantitative data and results. However, while post-positivist research allows for and provides the opportunity for the inclusion of qualitative data, this is not to say that qualitative data must be used when formulating a post-positivist study. Additionally, Creswell (2009) suggests that post-positivist research assumptions are better applied to research that has a quantitative focus rather than a qualitative focus.

Guba and Lincoln (1994) propose that either quantitative or qualitative research methods can be successfully applied to any research paradigm. To add to the argument, Morgan (2007) outlined that the debate between quantitative and qualitative research may be a redundant argument. In particular, they suggest that research methods should not be selected regarding the paradigm being applied by the researcher, but by the questions the researcher seeks to answer. In practice it is often incorrectly assumed that positivism implies a quantitative approach and post-positivism infers a mixed methods approach. However, there is a growing body of research outlining the importance of selecting a research approach that effectively answers the research questions and as such achieves the goals of the research (Creswell, 2009; Sousa et al., 2007; Tashakkori & Teddlie, 2003a).
This research is conducted within a post-positivist paradigm utilising a quantitative approach to examine a path model and to examine ‘what’ are the predictors of affective organisational commitment and the innovative behaviour of nursing employees. Specifically, the post-positivism paradigm was selected to answer the research questions, which can be answered using a deductive approach (Creswell, 2009). The post-positivism paradigm was also selected over positivism based on some of the key points previously mentioned. For example, it would seem more logical that researchers cannot be completely objective. It is also far more plausible that researchers can only develop the best understanding of reality at that time and may not ever completely understand the truth about the reality. At this point, the selection of post-positivism cannot be discussed without some reference to critical multiplism.

A major component of post-positivism is referred to as ‘critical-multiplism’, which is thought of as a type of methodological pluralism that allows for the introduction of quantitative and qualitative approaches to research. Additionally, Kim (1993) outlined that pluralism through critical multiplism within a nursing context provides scientific knowledge about human behaviour and provides information about how to best manage nurses in the workplace. The theory of multiplism postulates that research can be approached using a number of different perspectives, allowing for the introduction of mixed methods research, which is the most popular method to multiplism. However, Cook (1985) and Houts, Cook and Shadish (1986) propose several other methods that can be used to ensure critical multiplism within a post-positivist study. The alternative methods include: research questions developed from multiple stakeholders, the examination of a multitude of issues within a single study, the development of complex multivariate models, the inter-connection of several research studies, using multiple-researchers to examine the research questions, and the use of several theoretical frameworks to examine the research questions. Therefore, to ensure critical multiplism, this study seeks to
examine a complex multivariate model using two theoretical frameworks to examine the conceptual model proposed to be examined (see figure 3.1).

It is also important to note that there are advantages and limitations associated with using a post-positivist approach to research. Some limitations include the simplistic nature of the paradigm and the fact that it generally considers quantitative data as the primary source of information (Johnson & Onwuegbuzie, 2004). More specifically, post-positivists research usually focuses on quantitative data, using and applying qualitative data, in some cases, as a supplement to the quantitative results. On the other hand, scientific (Post-Positivist) research has many advantages over interpretive research methods. In particular, post-positivist research is highly replicable, meaning that the research can be repeated in a similar context producing a higher level of generalisability (Saunders et al., 2000). Generalisability, sometimes referred to as external validity, infers that the theory is applicable to other studies (Maxwell, 1992). This is highly valued when attempting to establish causality and together with generalisability increases the validity of the research (Ghauri & Gronhaug, 2002). Another advantage of post-positivist research is that researchers aim to separate themselves from the research being undertaken (Healy & Perry, 2000). A separation from researchers increases the level of objectivity and decreases the likelihood of researcher bias (Kaplan & Duchon, 1988). In summary, post-positivist research will be used in this study because it is highly valid, replicable and generalisable (Karami, Rowley, & Analoui, 2006; Oke, 2007; Zupan & Case, 2007).
APPENDIX TWO: PARTICIPANT INFORMATION SHEET

Participant Information Sheet

Name of project – Retaining committed and innovative nursing employees: the gap between policy and practice

Introduction –
My name is Matthew Xerri and I'm from Southern Cross University. I will be collecting data, for my PhD research, intended to examine workplace relationships and management practices at insert hospital name. These are important issues for Australian healthcare managers because the quality of workplace relationships affects the satisfaction and retention of skilled and innovative employees.

What does this research involve?
The study involves surveying a selection of nursing professionals. It should take approximately 15 minutes. We use ‘NUM’ to represent your ‘supervisor’ in this survey. If your supervisor is not a NUM, please answer the questions for your supervisor and add a note at the very end saying this.

What is expected of you?
You are invited to participate in this study. As such, your participation is voluntary and you may withdraw at any time. The information participants give will be treated confidentially. There are no risks with participating in this study.

It is possible that you will be invited to participate in other stages of this project. Therefore, to help us compare your responses in this survey with a future survey and to maintain your anonymity, please include your unique identification code at the top of the first page of the survey. PLEASE ENTER:

1. The first three letters of your mother's maiden name e.g. Kirby would be KIR
2. The first three letters of the town/ city you were born in e.g. Carlton would be CAR

Your completed identification code would be KIRCAR

Expected Outcomes
For details of the results, please contact Mr Matthew Xerri, Ph.: (07) 5589 3049; Email: matt.xerri@scu.edu.au. The broad results of this study may be published in a peer-reviewed journal and presented at conferences.

All information is confidential and will be handled as soon as possible.

Any complaints or concerns about the research project may be made to the Southern Cross University Human Research Ethics Committee:

The Ethics Complaints Officer
Southern Cross University
PO Box 157
Lismore NSW 2480
Email: ethics.lismore@scu.edu.au

All information is confidential and will be handled as soon as possible.
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<th>Innovative Behaviour</th>
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<td>13. I create new ideas for difficult issues</td>
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<td>14. I search out new working methods, techniques, or instruments</td>
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<td>15. I generate original solutions for problems</td>
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<td>16. I mobilise support for innovative ideas and solutions</td>
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<td>17. I encourage important organisational members to be enthusiastic about innovative ideas and solutions</td>
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<td>18. I transform innovative ideas into useful applications</td>
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<td>Affective organisational commitment (commitment to the hospital)</td>
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<td>19. I would be very happy to spend the rest of my career with this hospital</td>
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<td>20. This hospital has a great deal of personal meaning for me</td>
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<td>21. I enjoy discussing my hospital with people outside it</td>
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<td>22. I do not feel ’emotionally attached’ to this hospital (reverse score)</td>
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<td>23. I feel a strong sense of belonging to this hospital</td>
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<td>24. I feel strong ties with this hospital</td>
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<td>Leader-Member Exchange (LMX)</td>
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<td>25. My supervisor is satisfied with my work</td>
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<td>26. My supervisor understands my work problems and needs</td>
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<td>27. My supervisor knows how good I am at my job</td>
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<td>28. My supervisor is willing to use her/his power to help me solve work problems</td>
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<td>29. I have a good working relationship with my supervisor</td>
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<td>30. My supervisor is willing to help me at work when I really need it</td>
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<td>31. I have enough confidence in my supervisor that I would defend and justify his/her decision if he/she were not present to do so</td>
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<td>Perceived Organisational Support</td>
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<td>32. This organisation cares about my opinion</td>
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<td>33. This organisation really cares about my well being</td>
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<td>34. This organisation strongly considers my goals and values</td>
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<td>35. Help is available from this organisation when I have a problem</td>
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<td>36. This organisation would forgive an honest mistake on my part</td>
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<td>37. If given the opportunity, this organisation would take advantage of me *</td>
<td>SD</td>
<td>DA</td>
<td>SE</td>
<td>SL</td>
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<td>SA</td>
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<td>38. This organisations shows very little concern for me *</td>
<td>SD</td>
<td>DA</td>
<td>SE</td>
<td>SL</td>
<td>AG</td>
<td>SA</td>
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<td>39. This organisation is willing to help me if I need a special favour</td>
<td>SD</td>
<td>DA</td>
<td>SE</td>
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<td>SA</td>
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<td>Procedural Justice</td>
<td>SD</td>
<td>DA</td>
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<td>SA</td>
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<td>40. The procedures used by this organisation in their decision-making processes are fair</td>
<td>SD</td>
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<td>No.</td>
<td>Statement</td>
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<tr>
<td>41</td>
<td>The procedures used in negotiating, stipulating, and codifying contracts are fair</td>
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<tr>
<td>42</td>
<td>The procedures used in formulating and structuring the organisation are fair</td>
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<td>43</td>
<td>The procedures used in planning, organising, and managing the organisation are fair</td>
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<td>44</td>
<td>The procedures used to govern knowledge/resource sharing (i.e., knowledge transfer) is fair</td>
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<td>45</td>
<td>The procedures of executing strategic decisions are clearly defined and performed consistently</td>
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<td>46</td>
<td>The execution of the employer-employee contract is administered and monitored fairly</td>
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<tr>
<td>47</td>
<td>The implementation of strategic decisions are administered and monitored fairly</td>
<td></td>
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<tr>
<td>48</td>
<td>During daily interactions my colleagues are honest in dealing with me</td>
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<td>49</td>
<td>During daily interactions, my colleagues respect the importance of interpersonal relations</td>
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<td>50</td>
<td>Whenever conflict arises between any of my colleagues and myself, we always seek complete understanding of each other’s position and opinion in the first place</td>
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<td>51</td>
<td>My colleagues and I always communicate openly</td>
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<td></td>
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<tr>
<td>52</td>
<td>The working relationships with my colleagues and myself are close</td>
<td></td>
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<tr>
<td>53</td>
<td>I communicate often with my colleagues</td>
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<td>54</td>
<td>I typically interact frequently with most of the colleagues in my ward</td>
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<td>55</td>
<td>This hospital promotes a willingness to experiment</td>
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<td>56</td>
<td>In this hospital I am not being constrained by many rules other than the rules of being a professional</td>
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<tr>
<td>57</td>
<td>This hospital provides me support, information, training and knowledge to be innovative</td>
<td></td>
<td></td>
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<tr>
<td>58</td>
<td>This hospital supports and facilitates innovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>59</td>
<td>This hospital is tolerant of risk taking</td>
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</table>

Thank-you for taking the time to complete this survey
APPENDIX FOUR: GENERIC LETTER TO NURSING EMPLOYEES

Dear all,

We are writing to invite you to participate in an important research project that aims to capture the extent that nurses are committed to their job, as well as reasons explaining why. There is a lot of research that currently identifies factors that affect staff behaviour e.g. workloads, pay, shift work, and access to training and development. Additionally, more recent research highlights the importance of workplace relationships.

This study which involves nurses employed at insert hospital’s name, will investigate those factors that most affect the commitment and behaviour of nurses. This information may be useful in determining factors behind the feelings and perceptions of nurses.

We would be grateful if you could take the time to complete this questionnaire (handed to you by your Nurse Unit Manager - NUM) to help us increase our understanding of these important issues, however your participation is entirely voluntary.

A pre-paid envelope is provided with each survey, so all questionnaires will be returned directly to Southern Cross University and no information that identifies individual respondents will be reported back to insert hospital name.

The researcher who is conducting this study is: Matthew Xerri

This study has received special approval from Southern Cross University Human Research Ethics Committees.

Please complete and “post” the questionnaire by insert required return date here. If you have any concerns please do not hesitate to contact your Nurse Unit Manager, who will follow up with Matthew to assist with any questions or concerns.

Kind regards,
Nurses are invited to partake in a research project examining factors that impact upon the commitment and behaviour of nursing employees

What is this research about?

This research project aims to examine the role of workplace social relationships in developing committed and innovative nursing employees. These are important issues for Australian healthcare managers because the current shortage of nursing employees and the low levels of retention are having a significant impact on Australian health care.

Nurses are invited to participate (surveys can be collected from Nursing Unit Managers). Also if you would like to participate in an interview or for details of the results, please contact Mr Matthew Xerri, Ph.: (07)
The broad results of this study may be published in peer-reviewed management and nursing journals and presented at management conferences.
Appendix Six: Ethics Approval from Human Research Ethics Committee Southern Cross University and Human Research Ethics Committee North Coast Area Health Service (New South Wales, Australia Health)

HUMAN RESEARCH ETHICS COMMITTEE (HREC) NOTIFICATION

To: A/Prof Yvonne Brunetto/Matthew Xerri School of Commerce and Management yvonne.brunetto@scu.edu.au,matt.xerri@scu.edu.au

From: Secretary, Human Research Ethics Committee Division of Research, R. Block

Date: 4 November 2010

Project: Fostering the innovative behaviour of nursing employees within an Australian context: A social exchange perspective

Approval Number ECN-10-192

The Southern Cross University Human Research Ethics Committee has established, in accordance with the National Statement on Ethical Conduct in Human Research – Section 5/Processes of Research Governance and Ethical Review, a procedure for expedited review by a delegated authority.

This application and response has been considered by the HRESC at Tweed/Gold Coast Campus. The research is now been approved.

The approval is subject to the usual standard conditions of approval.
**Standard Conditions** in accordance with the National Statement on Ethical Conduct in Human Research (National Statement) *(NS)*.

1. **Monitoring**

   **NS 5.5.1 – 5.5.10**

   Responsibility for ensuring that research is reliably monitored lies with the institution under which the research is conducted. Mechanisms for monitoring can include:
   (a) reports from researchers;
   (b) reports from independent agencies (such as a data and safety monitoring board);
   (c) review of adverse event reports;
   (d) random inspections of research sites, data, or consent documentation; and
   (e) interviews with research participants or other forms of feedback from them.

   The following should be noted:

   (a) All ethics approvals are valid for **12 months** unless specified otherwise. If research is continuing after 12 months, then the ethics approval **MUST** be renewed. Complete the Annual Report/Renewal form and send to the Secretary of the HREC.

   (b) **NS 5.5.5**

   Generally, the researcher/s **provide a report every 12 months** on the progress to date or outcome in the case of completed research specifically including:
   - The maintenance and security of the records.
   - Compliance with the approved proposal
   - Compliance with any conditions of approval.
   - Any changes of protocol to the research.

   **Note:** Compliance to the reporting is **mandatory** to the approval of this research.

   (c) Specifically, that the researchers **report immediately** and notify the HREC, in writing, for approval of **any change in protocol. NS 5.5.3**

   (d) That a report is sent to HREC when the **project has been completed**.

   (e) That the researchers **report immediately any circumstance** that might affect ethical acceptance of the research protocol. **NS 5.5.3**

   (f) That the researchers **report immediately any serious adverse events/effects** on participants. **NS 5.5.3**

2. **Research conducted overseas**

   **NS 4.8.1 – 4.8.21**

   That, if research is conducted in a country other than Australia, **all research protocols for that country** are followed ethically and with appropriate cultural sensitivity.

3. **Complaints**

   **NS 5.6.1 – 5.6.7**
Institutions may receive complaints about researchers or the conduct of research, or about the conduct of a Human Research Ethics Committee (HREC) or other review body.

Complaints may be made by participants, researchers, staff of institutions, or others. All complaints should be handled promptly and sensitively.

*Complaints about the ethical conduct of this research should be addressed in writing to the following:*

Ethics Complaints Officer  
HREC  
Southern Cross University  
PO Box 157  
Lismore, NSW, 2480  
Email: ethics.lismore@scu.edu.au

All complaints are investigated fully and according to due process under the National Statement on Ethical Conduct in Human Research and this University. Any complaint you make will be treated in confidence and you will be informed of the outcome.

*All participants in research conducted by Southern Cross University should be advised of the above procedure and be given a copy of the contact details for the Complaints Officer. They should also be aware of the ethics approval number issued by the Human Research Ethics Committee.*

Sue Kelly  
HREC Administration  
Ph: (02) 6626 9139  
E. ethics.lismore@scu.edu.au

Prof Bill Boyd  
Chair, HREC  
Ph: 02 6620 3650  
E. William.boyd@scu.edu.au
2 December 2010

Matthew Xerri
School of Commerce and Management
Southern Cross University
Gold Coast Tweed Heads Campus (Beachside)
Locked Bag No.4
Coolangatta QLD 4225

Dear Matthew

RE: NCAHS HREC NO. 493N
Nurse retention: Retaining innovative nursing professionals in short supply: The gap between policy and practice

Thank you for your correspondence by email dated 15 November 2010 to the North Coast Area Health Service (NCAHS) Human Research Ethics Committee (HREC). The following documents were received:

Updated NEAF AU/1/54B7014 print date 15/11/2010
Participant Information Sheet, 3, dated 15 November 2010
SCU Ethics approval letter

The Chair reviewed the above documents on 2 December 2010 and approved the changes and noted the approval from SCU Ethics Committee.

Final ethics approval for a period of up to five years has now been granted for the above named study at the Tweed Hospital. The study cannot commence until the relevant Site Specific Assessment (SSA) has been submitted to the NCAHS RGO for Tweed and governance approval granted.

The NCAHS HREC is constituted and operates in accordance with the National Health and Medical Research Council’s National Statement on Ethical Conduct in Human Research (National Statement - 2007).

As part of this ethics approval, the following must be provided to the NCAHS HREC:

Amendments (including but not limited to updated protocols and Patient Information/Consent Forms) and Reporting of Serious Adverse Events

It is requested that updated Patient Information Consent Forms that are approved by the HREC, to be forwarded to all patients on the Trial.

An amendment to extend the duration of ethics approval will be required should the study continue after five years from the approval date.

Researchers should immediately report anything to the Research Ethics Committee which might warrant review of ethical approval of the protocol, including;

Human Research Ethics Committee
Clinical Governance Unit
North Coast Area Health Service
PO Box 126, Port Macquarie NSW 2444
Tel (02) 6588 2941 Fax (02) 6588 2942
Website www.ncahs.nsw.gov.au
ABN 37 940 606 983
APPENDIX SEVEN: CONGENERIC MEASUREMENT MODELS

Figure 6.1 Factor loadings for innovative behaviour scale

Figure 6.2 Factor loadings for affective organisational commitment scale
Figure 6.3 Factor loadings for leader-member exchange scale

Figure 6.4 Factor loadings for perceived organisational support scale
The procedures used by this hospital in their decision-making processes are fair
The procedures used in negotiating, stipulating, and codifying contracts are fair
The procedures used in formulating and structuring the organisation are fair
The procedures used in planning, organising, and managing the hospital are fair
The procedures used to govern knowledge/resource sharing (i.e., knowledge transfer) is fair.
The procedures of executing strategic decisions are clearly defined and performed consistently
The execution of the employer-employee contract is administered and monitored fairly
The implementation of strategic decisions are administered and monitored fairly

Figure 6.5 Factor loadings for procedural justice scale

During daily interactions my colleagues are honest in dealing with me
During daily interactions, my colleagues respect the importance of interpersonal relations
Whenever conflict arises between any of my colleagues and me, we always seek understanding of each other’s position.
My colleagues and I always communicate openly
My colleagues always provide me with timely feedback when I ask
In the process of making strategic decisions relating to organisational operations, my input is always respected

Figure 6.6 Factor loadings for interactional justice scale
This hospital promotes a willingness to experiment
In this hospital I am not being constrained by many rules other than the rules of being a professional
This hospital provides me support, information, training and knowledge to be innovative
This hospital supports and facilitates innovation
This hospital is tolerant of risk taking

Figure 6.7 Factor loadings for innovative organisational culture scale

The working relationships with my colleagues and me are close
I communicate often with my colleagues
I typically interact frequently with most of the colleagues in my ward

Figure 6.8 Factor loadings for tie strength scale