Insights into Nurses' Work: Exploring Relationships among Work Attitudes & Work-related Behaviours

by

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Institute of Health Policy, Management and Evaluation
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Abstract

Work motivation has been associated with work productivity. In health care, low motivation levels are associated with low productivity and linked to poor performance, decreased patient safety, and overall poor quality care. Hence the importance, ascribed in the literature, to clearly identifying the relationships between and among factors associated with work motivation, including work attitudes, and behaviours linked to work performance such as extra-role behaviours. Despite their importance to performance in health care, these relationships are understudied and poorly understood. The purpose of this study is to better understand work attitudes and their relationships to one another and to extra-role behaviours amongst nurses working in hospitals, the community, and long-term care settings in Ontario. This study comprises two stages: first, a scoping review focused on identifying individual-, unit-level, and organization-level characteristics that influence work motivation in health service organizations. The findings from the scoping review, augmented by a more in-depth review of the literature, aided in the development of a conceptual framework that guided the second stage of the study, to examine relationships amongst a specific set of nurses' work attitudes - including perceptions of organizational justice, perceived organizational support, and affective commitment - and extra-

role behaviours – specifically, organizational citizenship behaviours - in Ontario health care settings. In the second stage of the study, a survey was developed and administered to frontline nurses actively working in hospitals, the community, and long-term care settings in Ontario. Relationships amongst the constructs of interest were examined using structural equation modeling and path analysis. Examining the relationships of these concepts in a single model is novel, and offers insights regarding their complexity. The analyses further suggest that prior studies may be under-nuanced, and approaches to conceptualizing the concepts of perceived organizational justice and affective commitment in particular may have led to erroneous conclusions regarding their associations with perceived organizational support and organizational citizenship behaviours. This study further addresses four significant gaps previously identified in the work motivation and work behaviour literature: (1) how affective commitment relates to behavioural efforts, specifically organizational citizenship behaviours; (2) utilization of reliable and validated instruments to study work motivation; (3) use of a sufficiently large sample to have empirical support for generalizability; and (4) examination of these phenomena, among nurses, across diverse health care settings.

Keywords: work attitudes, organizational justice, perceived organizational support, affective commitment, organizational citizenship behaviours, structural equation modeling, path analysis

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Chapter 1

Introduction

Recent changes to health care settings in Canada (Alameddine, Baumann, Laporte, & Deber, 2012) present nurse managers with new challenges including decentralized decision-making, increased demands for accountability, and enlarged spans of control in work environments. Decreasing numbers of practicing nurses and concurrent increased workloads are expected to lead to a shortfall of nurses by 2016 (Wilson, Squires, Widger, Cranley, & Tourangeau, 2008). The impacts of these work conditions on nurse managers and nursing staff are understudied; however, the literature in organizational behaviour would suggest that these conditions are likely to negatively impact work attitudes and, by association, positive work-related behaviours related to work performance.

Work motivation is defined as a set of energetic forces that originate within and outside of an individual's being, to initiate work-related behaviour, and to determine its form, direction, intensity, and duration (Pinder, 2008). To clarify, work motivation is an overarching concept comprised of energetic forces which can be either internal or external. Internal forces include work attitudes, defined as positive or negative evaluations about aspects of one's work environment, e.g., perceptions of organizational justice or organizational support (O'Reilly, 1991). External forces consist of characteristics of the work environment e.g., the nature of work being performed or the style of leadership (Pinder, 2008). My interests lie in internal forces, specifically work attitudes. A number of studies have shown important linkages between internal forces - work attitudes specifically - and work-related behaviours (Greenberg, 2009; Lavelle et al., 2009; Mathieu & Zajac, 1990; Moorman, Blakely, & Niehoff, 1998; Organ, 1988; Solinger, van Olffen, & Roe, 2008; Suliman & Kathairi, 2013). In health care settings, work motivation has been shown to be directly related to organization-level performance including productivity, patient safety, and overall quality care (Chandler, Chonya, Mtei, Reyburn, & Whitty, 2009). Hence, it is important to clearly identify factors that motivate behaviours and impact behaviour outcomes that are in line with organizational goals. While these linkages have been established in disparate studies, a coherent understanding of the inter-relationships amongst employee work attitudes and work-

related behaviours in health care settings has yet to be established. Further, there is a paucity of literature evaluating the link between work attitudes and work-related behaviours in nursing practice. With a focus on nurses, I evaluate extra-role work-related behaviours in health care and how they are influenced by work attitudes.

Purpose

The purpose of this study is to better understand work attitudes and their relationships to one another and to extra-role behaviours amongst nurses working in hospitals, the community, and long-term care settings in Ontario. The focus is on a set of work attitudes and work-related behaviours shown to relate to work motivation in the health services literature (Chu, Lee, Hsu, & Chen, 2005; Dargahi, Alirezaie, & Shaham, 2012; Lee & Allen, 2002) and in the organization studies literature (Greenberg, 2009; Lavelle, 2007; Lavelle et al., 2009; Mathieu & Zajac, 1990; Morin et al., 2011; Rhoades, Eisenberger, & Armeli, 2001; Rupp & Cropanzano, 2002; Solinger et al., 2008). Specifically, I examine the relationships amongst three distinct work attitudes: perceived organizational justice, perceived organizational support, and affective commitment – and a form of extra-role work behaviour referred to as organizational citizenship behaviours.

Organizational justice refers to the study of people's **perceptions** of fairness in organizations (Greenberg, 1987). The importance of an association between a just and fair culture and the role of nurse leaders have been emphasized in safety literature. In health services research, perceived injustice is reportedly associated with poor job performance and lower perceptions of the quality of patient care (Faulkner & Laschinger, 2008).

Human behaviours - whether constructive or destructive - are directed toward a target (Solinger et al., 2008). In a work setting, the chief target for workers' behaviours is generally assumed to be the organization in which they work (Solinger et al., 2008). Organization scientists refer to this orientation as workers' organizational commitment, or *affective commitment* – or emotional attachment - to their workplace (Mowday, 1982; Solinger et al., 2008). The process by which commitment develops and manifests as behaviour has not been well researched in any work setting; there is limited understanding of the commitment process (i.e., how commitment builds,

or declines) and the cognitive, emotional, and behavioural components of the commitment attitude that is expressed as target-directed behaviours (Solinger et al., 2008). Commitment has been found to be positively associated with workplace behaviours which affect organizational effectiveness and performance (Choi, 2007; Organ, 1988; Podsakoff, MacKenzie, Paine, & Bachrach, 2000).

Perceived organizational support (POS) is defined as an employee's belief that their work organization cares about their well-being and values their contribution (Rhoades & Eisenberger, 2002). The behaviour literature suggests that POS has been found to play an antecedent role in the commitment process and acts as a mediator between organizational justice and affective commitment (Rhoades et al., 2001).

In this study I focus on a particular form of work behaviour, *organizational citizenship behaviours* (OCBs). OCBs refer to discretionary, extra-role behaviours that promote the effective functioning of the organization, and are not directly or explicitly recognized by a formal reward system (Organ, 1988). OCBs were selected as they have most consistently and strongly been shown to be associated with work attitudes (Greenberg, 2009; Lavelle et al., 2009; Mathieu & Zajac, 1990; Moorman et al., 1998; Organ, 1988; Solinger et al., 2008; Suliman & Kathairi, 2013).

There are numerous studies that establish dyadic relationships amongst (some of) these concepts in the empirical literature (Beugre, 1997; Greenberg, 1994, 2009; Lavelle et al., 2009; Loi, Hang-Yue, & Foley, 2006; McNabb, 2009; Moorman et al., 1998; Motlagh, Yarmohammadian, & Yaghoubi, 2012; Organ, 1988, 1990; Rhoades et al., 2001; Solinger et al., 2008; Suliman & Kathairi, 2013), however the inter-relationships amongst them is poorly understood and underexplored. Our limited understanding of the nuances of these relationships – that is, the subtle ways in which these complex concepts interrelate – limits our ability to develop strategies to positively influence work-related behaviours that in turn can influence work performance.

These concepts are understudied in health care generally, and are poorly understood as they pertain specifically to the nursing workforce. Investigating the work attitudes of nurses and how they relate to work-related behaviours may contribute to understanding about the concept of work

motivation in nursing, add empirical evidence regarding factors that motivate nurses (Toode, Routasalo, & Suominen, 2011), and aid in addressing key nursing human resource issues such as enhancing nursing recruitment, retention, satisfaction, and healthy work environments (Cummings et al., 2010; Price & Mueller, 1986). Based on my review of extant research on work motivation, I developed and tested the inter-relationships among work attitudes and extra-role work-related behaviours in a comprehensive framework. In addition to affording insights into the complex inter-relationships amongst these concepts, this study addresses four significant gaps identified in the work motivation and organizational behaviour literature: (1) it examines how affective commitment is related to behavioural efforts, specifically organizational citizenship behaviours (Boezeman & Ellemers, 2008); (2) it utilizes reliable and validated instruments (Toode et al., 2011); (3) it comprises a fairly large sample to have empirical support for generalizability (Ayupp & Kong, 2010); and (4) by using a cross-sector design, it is generalizable to nurses actively working in hospitals, the community, and long-term care settings in Ontario, Canada (Park, 2010).

Chapter 2

Review of the Literature

This chapter presents the results of a two-step literature review. A scoping review is first conducted, followed by an more detailed literature review. A scoping review is an approach to reviewing literature that provides a quick way of mapping fields of study where it is difficult to visualize the range of material that might be available (Arksey & O'Malley, 2005). The purpose of the scoping review in this study is to determine what is known from the extant literature about individual-, unit-, and organization-level characteristics that can and/or do influence work motivation. The focus of my thesis is on work attitudes and work-related behaviours. To ensure the greatest breadth, my scoping review was therefore conducted on work motivation, defined as a set of energetic forces that originate within and outside of an individual's being, to initiate work-related behaviour (Pinder, 2008). Internal forces include work attitudes, while the external forces consist of characteristics of the work environment. The scoping review is used to help identify potential work attitudes that I can further examine using a detailed literature review.

Scoping Review

The concept of work motivation has been around for decades. Researchers have and are expending a lot of energy examining it. Despite its portrayal as a critical element of work and work performance, work motivation is not defined consistently, is not interpreted the same by different authors, and is rarely measured using the same techniques (Toode et al., 2011). Kleinginna & Kleinginna (1981) reported and categorized over 140 definitions (Kleinginna Jr & Kleinginna, 1981). Work motivation, for example, can be defined as an individual's degree of willingness to exert and maintain an effort towards organizational goals (p.13) (Franco, Bennett, & Kanfer, 2002), or as the degree to which an individual wants and chooses to engage in certain specified behaviours (Mitchell, 1982).

Although there are numerous models, framework and theories of work motivation, there is no single absolute doctrine. This is in part because of the diversity of philosophical orientations

toward the nature of human beings. Some believe behaviour stems from a physiological or subconscious perspective, while others feel it is goal oriented and the result of conscious choice processes. Common to many theories is the concept of intrinsic and extrinsic motivation. To help provide an overview of the vast amount of literature on this topic, a chronological summary of work motivation theories and key findings up until 2005 can be found in Appendix A. One of the most comprehensive definitions of work motivation is provided by Pinder (2008). In his book, he also discusses at length the complexity of the concept of work motivation and one's personally held philosophical beliefs regarding the nature of human beings and behaviour, so it is not surprising that confusion exists.

In an attempt to bring some clarity to the definition, Pinder (2008) defines work motivation as “a set of energetic forces that originate within and outside of an individual's being, to initiate work-related behaviour, and to determine its form, direction, intensity, and duration” (p.11). It includes the concept of force, which allows for motivation levels to be either weak or strong, to vary between individuals at any particular time, and implies multiplicity of needs, drives, instincts and external factors. The definition implies the notion of movement and both internal (e.g., work attitudes) and external drivers (characteristics of the environment) of behaviour. It does not presume to be a general definition of human motivation, but rather the definition purports to deal with events and phenomena of work (Pinder, 2008). There is also no implication that motivation is the sole source of human or work behaviour. As Pinder points out, most critical is the feature that motivation is an invisible, internal concept, or ‘hypothetical concept’ representing an assumed physical process that is unobservable directly (p. 13). The definition entails direction toward which motivated force is focused, and incorporates intensity, defined as the momentary magnitude of actual motivational arousal (Pinder, 2008). The definition also takes into account behaviour patterns such as choice, persistence and continuing motivation. Finally, Pinder's definition incorporates duration, implying that goal attainment may be a possible outcome of behaviour.

Shared goals, linking employee goals and company goals, has been shown to reinforce work motivation (Ayupp & Kong, 2010), where pursuing set goals reduces the negative effects of high demands (Tadic, Bakker, & Oerlemans, 2013). High demands refer to jobs that are onerous, over-

challenging, or require an unreasonable amount of effort. Negative effects of high demands can include stress, disengagement, and displeasure. As a result of the association made between work motivation and work performance, health services researchers suggest that investigating the factors that contribute to work motivation amongst nurses may provide valuable insights into the challenges facing health care institutions (Gaki, Kontodimopoulos, & Niakas, 2013). I completed a scoping review to examine the extent, range, and nature of research activity in this area. This method of review is selected as it permits a rigorous and transparent method for mapping areas of research for a wide range of research designs and methodologies, and identification of specific research gaps in the existing literature (Arksey & O'Malley, 2005).

The purpose of this scoping review is to determine what is known from the existing literature (theoretical and empirical) about work motivation in health service organizations. The specific objectives are to: (1) conduct a systematic search of the work motivation literature (organization and health services literature); (2) identify key individual- and unit-level characteristics, organization-level characteristics, and processes that influence an individual's work motivation; (3) identify gaps in the evidence base for research in health care (Arksey & O'Malley, 2005); and (4) utilize both theoretical and empirical findings to develop a conceptual framework and inform a research study design that will address significant gaps within the work motivation and behaviour literature.

Scoping Review Methods

Study Design, Publication Status, Time Period

Articles published in English are included regardless of publication status, study design, and duration of trial. Articles are included if they were published between January 1, 2005 to March 28, 2014. This interval was chosen as prior literature was summarized in a review article by Latham and Pinder published in 2005 discussing the evolution of work motivation since a seminal article by Korman, Greenhaus, and Badin published in 1977 (Korman, Greenhaus, & Badin, 1977; Latham & Pinder, 2005). Refer to Appendix A for a chronological summary of work motivation theories and key findings up until 2005.

Search Strategy

The following electronic databases were searched: Business Source Premiere, ProQuest, PsycINFO, MEDLINE, and CINAHL. These databases were searched on March 28, 2014 and retrieved 8, 13, 15, 63, and 81 studies respectively. No restrictions were placed on the search. The following search terms were used: work motivation. Appropriate wildcards were used in searches to account for plurals and variations in spelling. Additional articles were identified through reference lists and discussions with experts. Three experienced librarians (LP, DK, HI) were consulted regarding the search. An example of the literature search can be found in **Appendix B**. Searches used a combination of medical sub-headings (MeSH) and free text terms, with modifications as necessary for the other databases.

Eligibility Criteria

A study was included if it involved work motivation and included individual- and unit-level characteristics, organization-level characteristics and/or processes that influence work motivation. Only articles published in peer-reviewed journals are included. Grey literature was excluded. No restrictions are applied with respect to age, sex, race, educational status, specific population characteristics, government or private, status (casual, part-time, full-time, permanent, or contract), or country of origin.

Study Selection

Two reviewers (JI, TP) independently screened the results of the literature search. Prior to commencing the screening process, a calibration exercise was conducted to ensure reliability in correctly selecting articles for inclusion. This entailed independently screening a random sample of 5% of the included citations. Each citation, (title and abstract) generated by the literature search was screened by both reviewers independently using our pre-established eligibility criteria. The article needed to involve work motivation and individual- and unit-level characteristics, organization-level characteristics and/or processes that influence work motivation. Conflicts were resolved by discussion ($n = 6$). In the event that agreement could not be reached, the involvement

of a third reviewer (WB) was sought ($n = 34$). 138 full-text articles were reviewed, of which 96 were included in the study. The consort diagram is located in Appendix C.

Data Collection

A data abstraction form was tested independently by two reviewers on a random sample of 10 articles and revised iteratively, as needed. The data items, see Appendix D, included study and participant characteristics, e.g., first author, year of publication, country of origin, industry, major theory, population examined, sample size, whether it was theoretical or empirical, the methodology, and main findings. Major publications are sorted from companion reports (or duplicate publications).

Synthesis of Results

The results of the scoping review are synthesized descriptively to identify individual-, unit-, and organization-level characteristics associated with individual work motivation. The review also led to the identification of gaps in the evidence base and topic areas for future research. Analysis of the data, gleaned from the review, involved qualitative analysis.

Work Motivation Literature (2005 – present): Results

The literature is global, with authors from Europe, Asia, Africa, North and South America. Most of the studies are set in Europe or the United States, with a range of industries covered (i.e., pharmaceutical, health care, business, education, recreation, food, military, technology, manufacturing, retail, energy, policing, hospitality and tourism, organization and management, public, private and non-profit sectors). The predominant industries are health care and education. The majority of the studies were cross-sectional and consisted of self-reported questionnaires/surveys. Attitude surveys made generalizations to other organizations difficult as they are for the most part tailored to specific institutions. This data can be found in Appendix D, under the columns: Major Theories/Focus Area, Country of Origin, Industry, and Methodology.

Individual- and Unit- Level Characteristics Influencing Work Motivation

A number of individual- and unit-level characteristics, or factors, have been shown to influence work motivation. Individual-level characteristics are endogenous. Examples of endogenous characteristics are work attitudes, defined as positive or negative evaluations about aspects of one's work environment (O'Reilly, 1991). Unit-level characteristics are exogenous to individual workers and are characteristics of the unit-level work environment that influence work motivation.

The most common individual- and unit- level characteristics identified in the scoping review that influence work motivation are organizational justice - feeling respected and valued (Dickin, Dollahite, & Habicht, 2011; Greenberg, 2009; Kuvaas, 2006; Latham, 2005; Organ, 1988; Purohit, 2014; Sahoo, 2011; Suliman & Kathairi, 2013) and affective commitment - the importance of (emotional attachment to) autonomy and/or supportive relationships (Dickin et al., 2011; Lavelle et al., 2009; Mathieu & Zajac, 1990; Organ, 1988, 1990; Solinger et al., 2008). Additional characteristics identified include the need for acknowledgement (Tolli & Schmidt, 2008); intrinsic rewards, a meaningful job, observing impacts (Dickin et al., 2011), security (Sahoo, Sahoo, & Das, 2011), and preference for certain job characteristics (Bipp & Kleinbeck, 2011). Other important motivators identified are: satisfied needs and values (Toode et al., 2011), and perceived behavioural control (Hinsz, Nickell, & Park, 2007). Multi-industry studies from Africa, Asia, Europe, North and South America found motivation can be increased with task significance (Grant, 2008); variety, learning, skill acquisition, and working with preferred populations (Toode et al., 2011); job assignment where employees feel competent (Nafziger, 2011); and finally both income and job security (Haagh, 2011; Purohit & Bandyopadhyay, 2014). Finally, work motivation is impacted by leadership characteristics, whether leaders are benevolent, moral, and/or charismatic (Jung & Sosik, 2006; Niu, Wang, & Cheng, 2009), affective commitment to one's unit (Bard Kuvaas, 2006), clearly understood, important, achievable yet challenging tasks (Gaki et al., 2013), collaboration, co-worker and supervisor support, and salary (Chandler et al., 2009; Toode et al., 2011; Tsai, Chen, & Liu, 2007).

Gaps in the individual- and unit- level literature. A number of gaps are identified in the literature. Future research in work motivation, it is suggested, should focus on investigating: emotional bonds and personal attributes (Jung & Sosik, 2006); individual characteristics, teams and effectiveness (Tremblay, Blanchard, Taylor, Pelletier, & Villeneuve, 2010); measuring ‘feelings’ (Toode et al., 2011); moods and task performance (Tsai et al., 2007); perceptions versus reality (Von Bonsdorff, 2011); emotions and psychological empowerment (Wegge et al., 2010); health care worker motivation and incentives (Chandler et al., 2009); task design, emotional labour, and well-being; (Bhat & Shah, 2010); matching job and personal resources (de Jonge, Le Blanc, Peeters, & Noordam, 2008); targeted sampling; non-financial reward preferences; management practices; reward preferences; and subjective components of security (Sahoo et al., 2011). Several of the features identified in this section are once again captured by the concept of affective commitment, relating to moods, feeling, attitudes, and emotional attachment to a target – a person, object, place or thing selected as the aim.

Organization-Level Characteristics Influencing Work Motivation

Organization-level characteristics, or organization-level factors, also influence work motivation. The most common organization-level characteristic identified in this review is organizational support (Boezeman & Ellemers, 2008; Dickin, Dollahite, & Habicht, 2011; Gillet, Huart, Colombat, & Fouquereau, 2013; Jakobsen & Andersen, 2013; Wei Ting, Kou Hsien, Yi Ching, Chia Huei, & Hui Chin, 2013). European and American studies (multi-industry) find work motivation is also enhanced by compatibility with others and teamwork (Gallie, Zhou, Felstead, & Green, 2012); an organization’s mission (Wright, 2007); social networks (van Beek, Wagner, Frijters, Ribbe, & Groenewegen, 2013), contact with beneficiaries (Grant et al., 2007); and training opportunities (Dysvik & Kuvaas, 2008). Canadian, European, Indian and American studies (multi-industry) highlight contextual features that influence work motivation including: feedback (Bedny & Karwowski, 2006); merit pay (Sung Min, 2010); performance linkage with rewards, remuneration and promotions (Dwivedula & Bredillet, 2010); high emotional support (de Jonge et al., 2008); and job resources allowing basic psychological needs to be met (Fernet, Austin, & Vallerand, 2012). Lower motivation levels are associated with shiftwork, rotations that include

nights, and exhaustion (Toode et al., 2011). Workplace bullying, a form of workplace violence, also decreases performance and increases error (Yildirim, 2009). Many of these features are captured by the work-attitude concept of perceived organizational support (POS) which entails an employee's belief that their work organization cares about their well-being and values their contribution (Rhoades & Eisenberger, 2002). POS has been identified as playing an antecedent role in the commitment process and acts as a mediator between organizational justice and affective commitment (Rhoades et al., 2001).

Gaps in the organization-level literature. Opportunities for further research include organizational commitment, culture, union status, effect of individual motivation on groups, and whether individual or group needs take priority (Lewis, 2011); varied work settings and cultures (Lewis, 2011); organizational identification; more organizational variables (Bhat & Shah, 2010); team work (Gallie et al., 2012); beneficiaries (Grant et al., 2007); private versus public sector (Negussie, 2012); motivators across sectors (Sung Min & Word, 2012); and the development of hierarchical models of motivation (Wei Ting, Kou Hsien, Yi Ching, Chia Huei, & Hui Chin, 2013). Additional research on organizational commitment is required as recent work by Morin et al. (2011) disputes the former conceptualization of organizational commitment as an aggregate construct representing the sum of one's commitment to all possible 'constituencies' of an organization (Hunt & Morgan, 1994; Morin et al., 2011).

Although only key individual-, unit- and organization-level characteristics are cited in this section, the sum of the results from the scoping review can be found in Appendix E.

Gaps in Work Motivation Research Methodology

With respect to the research conducted to date in this area, the most common concern identified is its lack of generalizability. Researchers underscore the importance, in future research, of: the use of larger samples, cross-national and cross-cultural testing (Jung & Sosik, 2006; Park & Rainey, 2012); empirical research testing generalizability (Gillet et al., 2013); social and religious components; more rigorous comparative and experimental designs, field, laboratory, situated experiments, mixed methods (Brewer & Brewer, 2011; Fernet, Gagne, & Austin, 2010);

longitudinal studies (Von Bonsdorff, 2011); research from the organization's or employee's perspective (Buchner, 2007); and the use of validated instruments (Toode et al., 2011).

Limitations of the Scoping Review

The original literature search initially revealed more articles of supposed relevance than anticipated: over 7000 articles. Information specialists helped ensure the scope was appropriately technically described, and manageable. Only if the term 'work motivation' was utilized by authors, was the article identified. Due to the volume of literature, and varying writing styles, it was challenging to sometimes accurately categorize methods, theories, findings, and effect sizes, however best attempts were made to interpret, abstract and summarize findings.

Scoping Review Conclusions

The most common work attitudes identified in the scoping review, the internal forces of work motivation, are perceived organizational justice, perceived organizational support and affective commitment. In the next chapter, I augment the results of this scoping review with an in-depth review of organizational behaviour and health sciences literature to develop a comprehensive framework, by which to examine the relationships among perceived organizational justice, perceived organizational support, and affective commitment to different targets. Further, I address some of the identified gaps in methodology through my use of a large cross-sectoral sample, and reliable and validated survey instruments.

Detailed Literature Review Methods

Study Design, Publication Status, Time Period

Articles published in English are included regardless of publication status, study design, and duration of trial. Articles are included if they were published between January 1, 2005 to March 28, 2014, to coincide with the scoping review.

Search Strategy

The following electronic databases were searched: Business Source Premiere, ProQuest, PsycINFO, MEDLINE, and CINAHL. These databases were searched on June 26, 2014. No restrictions were placed on the search. The following search terms were used: organizational justice, perceptions of organizational support, affective commitment, organizational citizenship behaviour, extra-role behaviour. Appropriate wildcards were used in searches to account for plurals and variations in spelling. Additional articles were identified through reference lists and discussions with experts. Searches used a combination of medical sub-headings (MeSH) and free text terms, with modifications as necessary for the other databases.

Development of Conceptual Framework & Propositions

Recall that the overarching aim of this study is to better understand work attitudes and their relationships to extra-role work-related behaviours amongst nurses working in hospitals, the community, and long-term care settings in Ontario.

The scoping review helped to identify three common work attitudes which influence work motivation (i.e. organizational justice, perceived organizational support, and affective commitment). A more in-depth review of the literature revealed common recurring dyadic relationships involving these three work attitudes and a common behaviour outcome, extra-role organizational citizenship behaviours, see Table 2.1. This more in-depth review also exposed a dearth of comprehensive theories that explain the relationships among work attitudes and their linkages to work-related behaviours. The theory of reasoned action (TRA) theory, depicted in Figure 2.1, is one theory that has been used in the organizational behaviour literature to predict work-related behaviours (Muse & Stamper, 2007; Teh & Yong, 2011; Williams & Shiaw, 1999). This theory suggests that there are competing interests at play that must be taken into consideration when understanding factors which motivate behavioural intention - although work motivation is not made explicit in the theoretical framework. According to the TRA, attitudes and norms are the main predictors of behavioural intention. The TRA separates behavioural intention from behaviour, allowing for the explanation of attitudinal influence (Ajzen & Fishbein, 1980). However, while reference is made to “attitudes”, these refer to attitudes about specific behaviours

in TRA, not the more generalized feelings about work, or “work attitudes”, discussed in prior chapters. For example, TRA would explore an individual’s *attitude* about a specific behaviour (whether their attitude is positive or negative) and the *norms* that the individual perceives (i.e., based on their co-workers reactions and attitudes) about whether or not this behaviour would be a desirable thing to perform. In addition, the TRA is criticized for neglecting the importance of social factors (Werner, 2004), environmental influences which surround the individual (Ajzen, 1991).

Table 2.1. Sample of *Common Dyadic Relationship*

Author	Sample Dyadic Relationships
Organ 1988	Organizational justice is positively related to Organizational citizenship behaviors (OCBs)
Organ 1988	Organizational commitment is positively related to OCBs
Organ 1990	Affective commitment is positively related to OCBs
Greenberg 1994	High levels interactional justice mitigate negative reactions to distributive justice
Beugre 1997	Organizational justice is positively related to affective organizational commitment
Moorman 1998	Procedural justice is an antecedent to POS
Rhoades 2001	Perceived organizational support (POS) leads to affective organizational commitment
Rhoades 2001	POS related and contributes to affective organizational commitment
Loi 2006	Procedural justice contributes to the development of POS
Loi 2006	Distributive justice contributes to the development of POS
McNabb 2009	Organizational justice is positively related to affective organizational commitment
Greenberg 2009	OCBs are related to perceptions of organizational justice
Greenberg 2009	Procedural justice enhances OCBs
Greenberg 2009	Procedural justice strongly predicts organizational commitment
Greenberg 2009	Procedural justice strongly predicts OCBs
Solinger 2008	low levels of commitment are likely associated with destructive and deviant behaviours
Solinger 2008	Organizational commitment is positively, significantly related to OCBs
Lavelle 2009	affective commitment is a strong predictor of extra-role OCBs
Motlagh 2012	Perceived organizational justice is related to work commitment
Suliman 2013	Interactional and procedural justice are strong independent predictors of OCBs
Suliman 2013	Interactional and procedural justice are strongly associated with affective commitment,

Figure 2.1. Theory of Reasoned Action

While I considered TRA as a theory with which to frame my research, the shortcomings I discuss above ultimately led me to proceed with the development of my own conceptual framework that takes into account general work attitudes and the influence of social factors such as organizational justice and organizational support. I was also interested in actual behaviours, as opposed to intended behaviors, and wished to include behaviours that benefited both individuals and organizations. Thus, I created a conceptual framework based on my review of additional articles, suggested by my scoping review that focussed on work attitudes and work-related extra-role behaviours. Hence, both the scoping review and this additional review informed the model. I developed propositions predicated on what the research evidence suggests regarding factors relevant to work attitudes and behaviours in the nursing context, such as the relationships between organizational justice, perceived organizational support, affective commitment and extra-role work-related behaviours.

Extra-Role Organizational Citizenship Behaviours

Other literature in organizational behaviour which affords insights (albeit not well integrated) into the linkages between work attitudes and work-related behaviours, is drawn upon to discuss and elaborate upon a specific form of 'behaviour,' **extra-role behaviours (ERBs)**. These behaviours are of critical importance to health care organizations because they contribute to the efficient use of scarce resources, and increase organizational and effectiveness (Chu et al., 2005; Organ, 1988). ERBs are defined as behaviours that attempt to benefit the organization, extending beyond existing role expectations (Organ, Podsakoff, & MacKenzie, 2006).

Organizational citizenship behaviours (OCBs) are examples of ERBs, empirically linked to organizational effectiveness (Organ, 1988). OCBs are discretionary behaviours that are not directly or explicitly recognized by a formal reward system, and in the aggregate promote the effective functioning of the organization (Organ, 1988). OCB's are 'targeted' behaviours that can benefit the organization (OCB-O) or the individual (OCB-I) (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). An example of an OCB-O would be giving advanced notice when unable to come to work. Helping someone who has been absent would be an example of an OCB-I. Both OCB-O and OCB-I will be measured in this study.

OCBs have been observed in health care. A 2002 study by Lee and Allen consisting of 149 RNs from Ontario Canada, with over 70 percent working in a general hospital, found that job affect (feelings about work) was associated more strongly than are job cognitions (thoughts about work such as fairness, recognition) with OCBs directed at individuals, whereas job cognitions correlated more strongly than did job affect with OCBs directed at the organization (Lee & Allen, 2002). A cross-sectional, descriptive and analytical study by Dargahi, Alirezaie, and Shaham (2012) conducted amongst 510 nurses working in 15 teaching hospitals in Tehran, Iran, confirmed the existence of OCBs amongst nurses with frequent demonstration of sportsmanship, civil virtue, conscientiousness, and altruism behaviours (Dargahi et al., 2012).

OCBs are important to hospitals. Health care delivery is changing with a shift from acute inpatient delivery of care to a more dispersed (i.e. to home and community) delivery system (Chu et al.,

2005). With the increase of expenditure caps and cutbacks, hospitals need to facilitate the provision of services, on the part of health care professionals, at that point in the continuum of care where the greatest efficiency is achieved (Chu et al., 2005). OCBs are of critical importance to organizations because they contribute to the efficient use of scarce resources and increase organizational productivity. In addition, the quality of health care has become a major concern in all health-care systems. The assurance of quality is heavily dependent on experience, expertise, and interaction amongst different health care professions. OCBs are deemed indispensable due to their importance in promoting positive relationships amongst employees and involving employees in the organization's activities (Chu et al., 2005). In acute care settings, for example, there are not always dedicated individuals to perform discharge planning, and this is often done on an as needed basis by the health care professional who is at hand upon discharge, which, if not done well, could have serious repercussions for patients and organizational outcomes such as readmissions. Figure 2.2 depicts the extra-role workplace behaviours OCBIs and OCBOs. .

Figure 2.2. Extra-role behaviours.

Factors that Influence Extra-Role Organizational Citizenship Behaviours

The scoping review together with a more in-depth review of the literature, revealed that the most common work attitudes (i.e. affective commitment, perceived organizational support, and organizational justice) were frequently shown to be related to extra-role work-related behaviours.

Affective Commitment. The term ‘commitment’ refers to an individual’s emotional affective attachment to a target; ‘affective’ relates to moods, feelings and attitudes; organizational commitment refers to a worker’s affective commitment to their organization (Mowday, 1982; Solinger et al., 2008). Thus for the purpose of this paper, affective commitment simply means an emotional attachment to a target – a person, object, place or thing selected as the aim. Morin, Madore, Morizot, Boudrias, and Tremblay (2009) demonstrated that employees (analysts, research specialists, insurance agents, account managers, technicians, call center, and customer services) from three Canadian organizations can be affectively committed towards at least eight work-related targets: organization, career, co-workers, supervisor, tasks, profession, customers, and work. In health care, amongst nurses, it is feasible to think of targets for nurses’ affective commitment as similarly comprising the hospital, their careers, their co-workers, their manager, the tasks they perform, their profession, their patients, and their work. Hence, predictions of behaviours can be improved by considering commitment to other targets, not solely the organization (Meyer, Allen, & Smith, 1993).

Research suggests that individuals will only engage in behaviours that may benefit those constituencies to which they feel committed (Lavelle, 2007; Morin et al., 2011; Rupp & Cropanzano, 2002). High levels of affective commitment are known to be positively, significantly related to a wide range of extra-role work-related behaviours (Lavelle et al., 2009; Mathieu & Zajac, 1990; Solinger et al., 2008). Solinger et al. (2008) suggest that high levels of commitment can inspire people to go to great lengths, sacrificing their own personal well-being for a greater good that they identify with, whether it be a unit, a team, or a community (Solinger et al., 2008).

Understanding how commitment is formed, and what is targeted, is highly relevant to understanding work attitudes and work-related behaviours since commitment (the attitude) has been shown to lead directly to behavioural intention (the conscious plan to carry out a behaviour) (Solinger et al., 2008). The relationships discussed here amongst affective commitment, behavioural intention and extra-role work-related behaviours are reflected in Proposition 1, and illustrated in *Figure 2.3*. Employees can be affectively committed towards eight work-related

targets. Affective commitment influences extra-role work-related Organizational Citizenship Behaviours that can benefit the organization (OCBO) and/or individuals (OCBI).

Proposition 1: *Affective commitment experienced by nurses will influence their demonstration of extra-role organizational citizenship behaviours.*

Figure 2.3. Employees can be affectively committed towards eight work-related targets. Affective commitment influences extra-role work-related Organizational Citizenship Behaviours that can benefit the organization (OCBO) and/or individuals (OCBI).

Perceived Organizational Support (POS). POS is defined as an employee's belief that their work organization cares about their well-being and values their contribution (Rhoades & Eisenberger, 2002). POS has been associated with affective commitment, where Rhoades, Eisenberger, and Armeli (2001) identified a direct, positive relationship between POS and AC in a study involving 333 employees in one sample and a second sample of 226 employees of a large electronics and appliance sales organization located in the Northeastern U.S. (Rhoades et al., 2001). In another study, the authors identified in a study involving 367 employees from variety of organizations, that POS plays an antecedent role in the commitment process (Rhoades et al., 2001). Finally, a third study by the authors, involving 1124 retail employees and 262 retail, poultry, and feed processing employees, found that POS related and contributes to affective organizational commitment, with POS playing an antecedent role in the commitment process (Rhoades et al., 2001).

This discussion is described in Proposition 2. Figure 2.4 depicts the influence of POS on affective commitment.

Proposition 2: *Perceived organizational support experienced by nurses will influence their affective commitment to various targets.*

Figure 2.4. Perceived organizational support by an employee influences their affective commitment.

Organizational justice. Organizational justice refers to the study of people's perceptions of fairness in organizations (Greenberg, 1987), and has been shown to be related to other work attitudes and work-related behaviours. There are three primary distinct forms of organizational justice: distributive, procedural, and interactional justice. *Distributive justice* refers to the perceived fairness of how outcomes are distributed (Greenberg, 2009). *Procedural justice* refers to the perceived fairness of the procedures or manner in which outcomes are determined (Greenberg, 2009). *Interactional justice* has two components: *informational justice* - the manner in which outcomes and procedures are communicated, and *interpersonal justice* - the expectation that things be explained in an adequate and respectful manner (Bies & Moag, 1986). Research

suggests that fair procedures and communication processes can enhance both individual and organizational outcomes (Greenberg, 2009).

Research findings regarding the relationship between affective commitment, perceived organizational support, organizational justice, and extra-role organizational citizenship behaviours. The three dimensions of organizational justice are known to work together. High levels of interactional justice mitigate negative reactions to distributive and/or procedural injustices (Greenberg, 1994) and adverse reactions to procedural injustice are exacerbated when combined with interactional injustice (Greenberg, 2009).

A study from Hong Kong, involving 514 practicing solicitors, suggests that procedural and distributive justice contributed to the development of POS (Loi et al., 2006). An additional study involving 255 civilian subordinate and supervisors from a large military hospital in the Midwest USA, found that procedural justice is an antecedent to POS (Moorman et al., 1998).

High levels of extra-role behaviours are observed even in unjust environments. Qualitative studies on commitment reveal that it is present when a person continues in a behaviour even under circumstances that would otherwise have caused him/her to change that behaviour (such as an unjust environment or one which lacks organizational support); inspiring individuals to go to great lengths, even sacrificing their own personal well-being for a greater good (Adler & Adler, 1988; Shamir, 1991; Solinger et al., 2008). This suggests that commitment ‘trumps’ injustice. This tends to occur when there are extremely high levels of commitment to a particular target (Adler & Adler, 1988). For example, nurses or allied health professionals who perceive that they are unfairly treated, may provide superlative care for their patients, regardless of their perceptions of fairness, because their targeted commitment is to their patients. Similarly, employees may perceive that they are not supported by their organization or perhaps that their hard work is not being recognized by their supervisor, however they continue to go above and beyond to assist co-workers in spite of the situation, because their targeted commitment is to their co-workers. Individuals working in health care likely have more than one ‘target’ for affective commitment at a time, resulting in different behaviours.

This discussion is reflected in Figure 2.5 and in the third and final proposition.

Proposition 3: *Distributive, procedural, and interactional justice experienced by nurses directly impact their perceived organizational support.*

Figure 2.5. Employee perceptions of organizational justice impacts their perception of organizational support, which directly impacts affective commitment.

Framework Summary

In the interests of developing a more fulsome understanding of the complex inter-relationships amongst work attitudes and work-related behaviours amongst nurses working in health care contexts, a conceptual framework was created with concepts from the extensive literatures on work attitudes and work motivation. The framework depicts the relationships between organizational justice, perceived organizational support, affective commitment and extra-role organizational citizenship behaviours as suggested by extant literature. The final hypothesized framework that is tested in this study is depicted in Figure 2.6.

Figure 2.6. Final Hypothesized Framework.

Chapter 3

Methods and Procedures

This chapter describes the methodology and procedures used in the study. Outlined are the research design, sample, survey design, data collection, data management, analyses, instruments used, ethics approval, risks and benefits.

Research Design

The study design is cross-sectional. The method of data collection was an electronic survey. Participants received an information email containing a link to an online survey. An online survey was used as it was an inexpensive method that allowed for rapid surveying of a large, geographically distributed sample across the Province of Ontario, Canada (Dillman, Smyth, & Christian, 2014). My underlying aim of this study is to examine relationships among nurses' work attitudes - specifically perceived organizational justice, perceived organizational support, and affective commitment - and their relationships to extra-role behaviours, specifically organizational citizenship behaviours. My sample is multi-sectoral, including nurses working in hospitals, the community, and long-term care settings in Ontario. Cross-sectional studies are carried out at one point in time, over a short period of time (Dillman et al., 2014). This design was selected as it enabled me to obtain a subgroup within a population at a given time to find the prevalence of my outcome measures.

Sample

The College of Nurses of Ontario (CNO) is the governing body for registered nurses (RNs), registered practical nurses (RPNs) and nurse practitioners (NPs) in Ontario, Canada (CNO, 2015). Therefore, the CNO have data representing all RNs in Ontario, the population of interest. The unit of analysis in this study is the individual front-line registered nurse working in Ontario. Unfortunately, I was not able to work and collaborate with the CNO. Instead, I accessed my survey respondents via the Registered Nurses' Association of Ontario (RNAO). All participants in this study were members of the Registered Nurses' Association of Ontario (RNAO). The RNAO is a

professional association representing approximately 41, 000 registered nurses, nurse practitioners and nursing students in Ontario. The RNAO advocates for healthy public policy, promotes excellence in nursing practice, increases nurses' contribution to shaping the health-care system, and helps influence decisions that affect nurses and the public they serve (RNAO, 2015). Membership is voluntary and satisfies the CNO's professional liability protection (PLP) requirement. This is important as it is a convenient way for all Ontario nurses to meet this requirement. Hence, of the 104, 298 general class RNs registered with the CNO, 41, 000 are members of the RNAO (CNO, 2015). Representativeness of my sample is discussed in the demographics section of the Results chapter.

The survey was distributed to all 25 RNAO "interest groups." For a complete list of interest groups included in the study, see Appendix F. These interest groups were identified by RNAO because collectively they represent the unique specialties or populations within the nursing spectrum, the diversity of the profession, and consist mainly of front-line staff. In total, there are 7,375 RNAO members in the selected interest groups, representing approximately 18% of all RNAO registrants. Although data were not available from the RNAO to verify how representative these 18% were of the entire RNAO registrant population, I am able to verify in the Results chapter, that the sample is representative of the CNO population, the population of interest. The inclusion criteria for potential participants were that they be a front-line, registered nurse, actively working in Ontario. Because it was not possible to contact only front-line staff, invitational emails containing the survey link were sent out to all nurses registered with the RNAO whom were active members of the 25 interest groups listed in Appendix F. Nurses who responded to the survey were asked to indicate their role so that front-line staff responses could be distinguished from the responses of nurses in other roles (e.g., leadership).

Sample Size

Data analysis uses Structural Equation Modeling (SEM) analytic techniques. SEM is appropriate for my study as it allows me to confirm my developed framework, it assesses and corrects for measurement error, and can incorporate both unobserved (i.e. latent) and observed variables (Byrne, 2014). Sample size requirements when using SEM are somewhat dependent on model

complexity, the estimation method used, the distributional characteristics of observed variables, and the amount of missing data (Kline, 2011), although guidelines regarding sample size for SEM are conflicting and not well established (Weston, Gore, Chan, & Catalano, 2008). Bentler (1989) suggest a ratio of sample size to number of free parameters as low as 5:1, whereas Weston et al. (2008) suggest between 10 and 20 participants per observed variable (Bentler, 1995; Weston et al., 2008). Having 34 observed variables, the more conservative number was opted for to reduce the likelihood of insufficient statistical power. The target sample size, 680, was achieved; once exclusions, survey non-response and duplicates were accounted for.

Survey Development

Measures

Behaviours.

Organizational citizenship behaviours. Organizational Citizenship Behaviours (OCBs) were measured using a 16-item self-report scale previously adapted by Lee and Allen (2002) (Lee & Allen, 2002), see Appendix G. This measure distinguishes OCBs directed towards the organization (OCBO: 8 items) from that directed towards fellow employees/individuals (OCBI: 8 items). Lee and Allen confirmed construct validity; an empirical distinction between OCBI and OCBO (Lee & Allen, 2002). The significance of this distinction is established in the literature (McNeely & Meglino, 1994; Williams & Anderson, 1991). An example of scale items for OCBI is “help others who have been absent” and an example of an OCBO scale items is “express loyalty towards the organization.” Responses to these items were made on a 5-point scale (1 = Never, 5 = Always) (Dunlop & Lee, 2004). This scale has been utilized in health care settings, with good reliabilities of $\alpha = .83$ (OCBI) and $\alpha = .88$ (OCBO) (Lee & Allen, 2002).

Work Attitudes.

Affective Commitment. The Workplace Affective Commitment Multidimensional Questionnaire (WACMQ) is the only questionnaire designed to measure affective commitment towards eight work-related targets identified in the literature (organization, career, co-workers,

supervisor, tasks, profession, customers, and work) (Morin, Madore, Morizot, Boudrias, & Tremblay, 2009). The original WACMQ is comprised of 49 items (Morin et al., 2009). Following further psychometric work, a short version of this instrument containing 24 items, was developed by Morin and colleagues (Morin et al., 2009). Sample statements for each of the eight targets of commitment are as follows: organization (e.g., "I am proud to say that I work for this organization"), supervisor (e.g., "I like the values my immediate supervisor conveys"), co-workers (e.g., "I'm happy to work with my coworkers"), work itself (e.g., "Work is a priority in my life"), tasks (e.g., "I find the tasks I perform in my current position stimulating"), career (e.g., "It is important for me to move up through the ranks or obtain promotions"), customers (e.g., "Delivering quality products and/or services to customers is a major source of satisfaction for me"), and profession (e.g., "I am proud to say this is my profession").

This new 24-item short version of the instrument was used in this study. This instrument, see Appendix H, has not been utilized in acute care settings, but has been used in long-term care facilities with alpha reliabilities ranging from 0.70 – 0.87 (Morin, Vandenberghe, Turmel, Madore, & Maïano, 2013). Morin et al. (2009) reported evidence of factorial validity and measurement invariance across gender and language. Responses to these items were made on a 5-point scale (1 = Totally Disagree, 5 = Totally Agree). The multi-target conceptualization of affective commitment has applicability to complex health care contexts where providers of care may develop commitment toward a multiplicity of targets.

Nursing industry experts with extensive nursing experience, with whom I have collaborated and worked with for many years, identified that the care models, organizational and reporting structures can be quite diverse hospital acute care and emergency departments. As a result, they suggested that I ensure that the WACMQ was applicable and worded appropriately for acute care and emergency department of hospitals in Ontario. Since the WACMQ had not been used in hospital acute care or emergency department settings, two focus groups were convened in order to undertake linguistic validation through cognitive debriefing. The groups were representative of the intended survey target population, and consisted of nurses working in acute care and emergency departments in hospitals in Ontario. Cognitive debriefing is the dominant mode for

testing questionnaire items (Dillman & Groves, 2011). In this study, cognitive debriefing entailed exposing the participants to each item (a total of 24), then asking them to “brainstorm” on the meaning they ascribed to each item, in response to the question “explain what you think the item means in your own words.” This made apparent the participants’ understanding of the item, and congruence – or lack of it – with the meaning intended by the original item. Participants were then asked to offer suggestions for alternative wording (for each item) (“how the wording could be improved to make the meaning more clear for their respective health care departments?”), if they felt this was needed.

The final wording for items, as a consequence of this work, is summarized in Appendix I. As a consequence of the cognitive debriefing exercise, minor changes to the instrument were effected to reflect the health care context, e.g., instead of ‘supervisor’ or ‘coworkers,’ items were re-worded to explicitly reference ‘the authority figure who conducts performance appraisals,’ and ‘interprofessional co-workers’, respectively.

Organizational Justice. Organizational justice refers to the study of people’s perceptions of fairness in organizations (Greenberg, 1987). Colquitt (2001) developed a unique scale for measuring all dimensions of organizational justice perception, see Appendix J. This instrument was used in this study. The scale has been utilized in health care settings (Sulu, Ceylan, & Kaynak, 2010), is both valid and reliable (distributive, $\alpha = .93$; procedural, $\alpha = .93$; informational, $\alpha = .90$; interpersonal, $\alpha = .92$), and has 20 items with response options ranging from 1 (to a very small extent) to 5 (to a very large extent) (Colquitt, 2001). Colquitt (2001) established good construct validity, establishing some degree of generalizability for the justice measure. Respondents were asked to think about their supervisor as they responded to each item. Examples of items from each scale are as follows: ‘Have those procedures been free of bias?’ (Procedural), ‘Is your outcome justified given your performance?’ (Distributive), ‘Has he/she treated you in a polite manner?’ (Interpersonal), ‘Has he/she communicated details in a timely manner?’ (Informational). Although organizational justice is considered an external force, I am measuring one’s internal perception of organizational justice.

Perceived Organizational Support. Perceived organizational support (POS) refers to the extent to which employer organizations value employee contributions and care about their well-being (Eisenberger, Huntington, Hutchinson, & Sowa, 1986; Rhoades & Eisenberger, 2002). A short 8-item instrument was used in this study to assess POS, see Appendix K (Rhoades et al., 2001). The scale consists of eight items rated on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). An example of an item is ‘The organization really cares about my well-being.’ This scale has been used in health care with reliability coefficients ranging from $\alpha = 0.89 - 0.94$ (Rhoades & Eisenberger, 2002; Tourangeau, Cranley, Spence Laschinger, & Pachis, 2010; H. Wong, Wong, Wong, & Lee, 2010). The scale has been found to be unidimensional with good discriminant validity (Rhoades & Eisenberger, 2002). Similarly to organizational justice, although organizational support is an external force, I am measuring one’s internal perception of organizational support.

Demographic Information

Demographic data collected via the e-survey included: age, education, number of organizations employed by, employment status, geographic location, union status, involvement in academia, primary area of practice, years of nursing experience, years working with current organization, years working in current department, years working with current supervisor, and years remaining before retirement. These demographics are important for determining sample representativeness compared to data available from the Canadian Nurses of Ontario (CNO) database (see below).

Ethics

Ethical approval for this study was received from the Ethics Review Office at the University of Toronto.

Data Collection Procedures

The opportunity to complete the online survey was communicated to nurses by the Membership and Services Department Registered Nurses' Association of Ontario (RNAO) via an email prepared by the researcher containing a link to the online survey. The Dillman internet

methodology was used (Dillman et al., 2014). The steps included an advanced notice email; then one week later, a cover-email with instructions and the link to the survey; one week after that, a follow up email was distributed. Two weeks after the initial survey invitation a new cover email containing the link was distributed again; and finally, a termination email was distributed one week later (4 weeks after the initial pre-notification email), to notify all that the survey was closing in one week. Instructions on the survey explained that the questions related to respondents' perceptions, and that there were no "right" or "wrong" answers. All questions on the survey were mandatory (not optional) meaning that participants were unable to proceed to a new page of questions on the electronic survey before responding to all questions on the previous page. Upon completion of the survey, all participants were offered the opportunity to provide their name and contact information for a draw to win one of three \$100 prepaid VISA gift cards. Participants' names and contact information were not connected to their survey responses in order to assure anonymity of responses. For the communications relating to survey distribution, see Appendix L to Appendix P.

The survey was administered through FluidSurveys. Once participants clicked on the link, they were directed to an introduction page which explicitly stated "By completing and submitting your survey, you are consenting to participate in this study." If respondents identified in the demographic section that they were in a leadership position, were unemployed or a student, then they were immediately directed to the final draw at the end of the survey and were not invited to complete the main body of the survey.

Data Preparation: Cleaning and Screening

The purpose of data screening is to ensure that the data are an accurate representation of what was measured and that the underlying assumptions of analytic procedures are met (Meyers, Gamst, & Guarino, 2013). Data were imported from FluidSurveys into Excel. Each case was reviewed independently to ensure that there were no coding errors, no missing data, and that the survey logic performed correctly (e.g., if one worked outside of Ontario, the participant was not asked to which Ontario LHIN they belonged). The data were then sorted in Excel to ensure only cases meeting the inclusion criteria were retained (e.g., the inclusion of only frontline RNs actively working in

Ontario), and cases meeting exclusion criteria were removed (e.g., students, unemployed, or RNs working outside of Ontario).

Data from the Excel spreadsheet were then imported directly into SPSS IBM Statistics version 22. All data are categorical. Some researchers have argued that categorical variables should be treated as continuous variables, but Byrne (2014) identifies several risks with this approach: (i) Pearson correlation coefficients are higher when computed between two continuous variables than when computed between the same two variables restructured with an ordered categorical scale; (ii) greatest attenuation occurs with variables having fewer than five categories and those with a high degree of skewness; (iii) when categorical variables approximate a normal distribution, the number of categories has little effect on the chi-squared likelihood ratio test of model fit, although increasing skewness and differential skewness can lead to inflated chi-squared values; (iv) factor loadings and factor correlations are modestly underestimated, which becomes critical when there are fewer than three categories, skewness and differential skewness; (v) error variance estimates are sensitive, and (iv) standard error estimates for all parameters tend to be low. Due to these risks, the decision was made to treat the categorical data as categorical, not continuous.

Descriptive analyses were performed to generate frequency distributions for each variable. Z-tests were performed between the study sample and data from the CNO, to identify any statistical differences between the study sample and the population of Ontario nurses. P-values were calculated for two-tailed comparisons using the following website: <http://epitools.ausvet.com.au/content.php?page=z-test-2>. P-values of $\geq .05$ indicate that there are no significant differences, the null hypothesis should be accepted, and sample proportions are equal. P-values of $\leq .05$ indicate that there are significant differences, in which case Cohen's *d* was then calculated to determine the effect size of the difference using the following website: <http://www.campbellcollaboration.org/escalc/html/EffectSizeCalculator-SMD10.php>. An effect size of 0.2 constitutes a small effect; 0.5 constitutes a medium effects size; and 0.8 constitutes a large effect size. The study sample appears representative of the Ontario nursing population. Although discussed in detail in the Results chapter, the few categories with statistical differences were only found to have small effect sizes.

In preparation for import into LISREL and for Confirmatory Factor Analysis (CFA), negative survey items were reverse coded and included as new variables in the data set. Next, a correlation/covariance matrix was generated. The nature of the observed data, in this case categorical, dictated the most appropriate type of correlation matrix. Joreskog and Sorbom (1989) recommend polychoric correlations when the observed variables are all categorical (Jöreskog & Sörbom, 1989). These correlations are regarded as theoretical correlations and are estimated from the observed pairwise contingency tables of the ordinal variables (Byrne, 2014).

With correlation matrices, the variables must be inter-correlated, but they should not correlate too highly (extreme multicollinearity and singularity) as this would cause difficulties in determining the unique contribution of the variables to a factor (Field, 2014). To avoid or correct multicollinearity, Field (2014) suggests reviewing the correlation matrix for variables very highly correlated ($r > .8$) and consider eliminating one or more of these variables. Although this would seem like a simple approach, as Field describes, the effect of two variables that correlate with $r = .9$ for example, might be less than the effect of say three variables that all correlate at $r = .6$.

Statistical Assumptions Underlying Structural Equation Modeling.

SEM requires that certain underlying assumptions be satisfied to ensure accurate inferences. These assumptions include multivariate normality, completely random missing data, sufficiently large sample size, and the assumption of exogeneity (Kaplan, 2009). The most common approach to parameter estimation in SEM is maximum likelihood (ML) (Cortina, Chen, & Dunlap, 2001). ML estimation is the default setting in LISREL and was used for analysis of measurement models, as it identified estimates with the greatest chance of reproducing the observed data (Kline, 2005). Although there are alternatives to ML, there is considerable evidence that ML is robust with respect to many types of violation of the multivariate normality assumption, and is superior in terms of bias in parameter estimates, Type 1 error, and power (Cortina et al., 2001).

The testing of assumptions is embedded in the LISREL analysis. The diagnostic tests include univariate distributions for ordinal variables, correlations and test statistics (e.g., tests for bivariate normality), means, standard deviations, and the correlation matrix. Multivariate normality is

assessed via skewness and kurtosis for each item and ‘Relative Multivariate Kurtosis,’ produced in the LISREL output. The Relative Multivariate Kurtosis measure is the Mardia-based *kappa*, rescaled to have a mean of 1. It should be close to 1 in value if the distribution is multivariate normal (Jöreskog & Sörbom, 2002). As reported in the results section below, this value is considered relatively small and collectively the multivariate distribution is reasonably normal. The variables and included relationships are suitable and satisfied the assumptions, and no fatal errors are obtained. In addition, normality was also tested in SPSS so that histograms, P-P and Q-Q plots could also be viewed.

Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) was performed for each of the latent constructs. For OJ, CFA was performed for both a four factor and a three factor model, since both are present in the literature, to determine which model was best suited for inclusion into the SEM. CFA was then conducted for a one factor POS model and eight factor affective commitment model, again reflective of the extant literature. Finally CFA was performed for both a two factor and one factor OCB model, since both are present in the literature, to determine which factor structure was best suited for inclusion into the SEM.

The goodness-of-fit for each construct was evaluated by reviewing the fit statistics and program warnings. One test of model fit (chi-square [χ^2]), and five goodness of fit indices were assessed: root mean square error of approximation (RMSEA); standardized root mean square residual (SRMR); goodness-of-fit indices (GFI); comparative fit index (CFI); and normed fit index (NFI). These indices were selected as they tend to be the most accurate reflection of model fit (Kline, 2005). Rather than making determination of goodness-of-fit using only one of the indices, a more rigorous approach was applied. Each of the model fit indices were calculated differently (Schumacker & Lomax, 2004) and indicate different aspects of fit, hence determination of goodness of fit in this study is based on the accumulation of evidence across five of the statistics/indices.

Absolute fit measures indicate how well the proposed interrelationships between the variables match the interrelationships between the actual or observed interrelationships (e.g., chi-square, GFI, RMSEA and SRMR). The chi-square statistic is used to test the difference between the predicted and observed relationships. A non-significant chi-square is preferred, however, this test is sample size sensitive, affected by the size of correlations in the model, and often too powerful for most research studies (Meyers et al., 2013). Chi-square is an adequate measure of fit for models with a small number of cases (75-200) (Kenny, 2012; Meyers et al., 2013). For models with more cases, chi-square is often statistically significant as the size of the calculated chi-square is directly proportional to the size of the sample (Meyers et al., 2013). Since chi-square is sensitive to sample size, and is affected by the size of the correlations in the model, some authors (Joreskog and Sorbom, 1996; Bentler, 1990) advise against the exclusive use of chi-square in judging the overall fit of the model. RMSEA is the average of the residuals between the observed correlation/covariance from the sample and the expected model estimated for the population (Meyers et al., 2013). SRMR is the difference between the observed correlation and the predicted correlation. GFI is a measure of the proportion of variance in the sample correlation/covariance accounted for by the predicted model. Less conservative approaches suggest that adequate fit is indicated by cut-off values of .08 (or .06 for a more conservative approach) for RMSEA, .08 for SRMR, and .90 for GFI (Byrne, 2014; Hancock & Mueller, 2015; Meyers et al., 2013). Since this is the first time all of the constructs are being combined in one framework, I opted to use this less conservative approach.

Relative fit measures, or comparison with baseline measures, are measures of fit relative to the independence model, which assumes that there are no relationships in the data (a poor fit) and the saturated model, which assumes a perfect fit (Meyers et al., 2013). CFI analyzes a model's relative fit by examining the discrepancy between the data and the hypothesized model. NFI is the discrepancy between the chi-squared value of the hypothesized model and the chi-squared value of the null model. A value of $> .90$ for both NFI and CFI indicates acceptable fit to the data (Bentler, 1992; Byrne, 2014). Meyers et al. (2006) recommend a more conservative value of .95 (Hancock & Mueller, 2015; Meyers et al., 2013). Ultimately, there is a range of opinion about what is considered acceptable fit. For instance, in contrast to cut-offs noted above, Hu & Bentler

(1999) suggest a two-index strategy where models with SRMR values < 0.08 and CFI values > 0.95 or RMSEA values < 0.06 indicate good model fit. For the purpose of this study, to simply understand the relationships between constructs, the more liberal parameters are applied. In addition, it is suggested that when an initial model fits well, it is unwise to modify it to achieve even better fit, as modifications may be fitting small idiosyncratic characteristics of the sample (Byrne, 2014; MacCallum, Roznowski, & Necowitz, 1992).

Model Modification

Model modification is not performed in this analysis as I do not have a cross-validation sample. The initial results are sufficient for the purpose of this study, which is to understand the relationship between constructs. More about model modification and modification indices can be found in Appendix Q.

Reliability for Latent Constructs

After CFA was performed, internal consistency coefficients (Cronbach's alpha) were calculated in SPSS. The most common measure of scale reliability is Cronbach's alpha (α). Reliability refers to the ability of a measure to produce consistent results when the same entities are measured under different conditions (Field, 2014). A reliable measure should consistently reflect the construct it is measuring. In other words, if a questionnaire is reliable, all else being equal, one should obtain the same score if completed at two different time points (Field, 2014). Survey questions in this study were all selected because they have all demonstrated good reliability in the literature.

There is debate in the literature regarding what constitutes an acceptable value for Cronbach's α . Kline (2013) states that although the generally accepted value of .8 is appropriate for intelligence tests, for ability tests, a cut-off point of .7 is more suitable. For psychological constructs, values below .7 can be expected (Kline, 2013). Furthermore, in the early stages of research when measures/items are being developed, values as low as .5 will suffice (Field, 2014). Field (2014) identifies the following ranges: $>.9$ = excellent, .7 to .9 = good, acceptable = .6 to .7.

The value of α depends on the number of items on a scale. As the number of items on a scale increases, so will the α . This is important as one can obtain a large value of α simply due to having

many items, not because the scale is reliable. Secondly, if a questionnaire has subscales, α should be applied separately to each of the subscales (Field, 2014).

The following are outputs obtained from SPSS that can be beneficial in helping to evaluate internal consistency reliability:

Scale if Item Deleted

This value indicates what the value of α would be if each item were to be deleted. A reliable questionnaire is one in which the deletion of one item would not greatly affect the overall reliability, hence no item should cause a substantial decrease in α , if it does, one should consider dropping that item to improve reliability (Field, 2014).

Corrected Item-Total Correlation

This value indicates the correlations between each item and the total score from the questionnaire. In a reliable scale, all items should correlate with the total. Any values less than .3 indicate that the item does not correlate well with the scale overall. Items with low correlations may have to be dropped (Field, 2014).

Cronbach's Alpha if Item Deleted

These are the values of overall α if the item was not included in the calculation. Values of α should be around the same value of the overall α . Any values of α greater than the overall α are identified, as deletion of these items would improve reliability. Having none of the items increase reliability if they were to be deleted, indicates that all items are positively contributing to the overall reliability.

Structural Equation Modeling

A two-step approach to Structural Equation Modeling (SEM) was used. First the measurement models were tested (confirmatory factor analyses), then the structural model. Structural Equation Modeling (SEM) was used to test the hypothesized conceptual framework.

Model Specification

Model specification involves specifying the relationships among the latent variables and determining how the latent variables will be measured. Extant literature was used to specify the model (Norman & Streiner, 2003). Generally dyadic relationships existed. This was the first time all concepts had been used together in one model. The conceptual framework (see Figure 3.1), hypothesized a pattern of relationships amongst latent constructs, with measured variables that functioned as indicators. The latent factors instead of average scores were used to test the relationship described in Figure 3.1.

Figure 3.1. Hypothesized Model – Relationships between Perceived Organizational Justice, Perceived Organizational Support, Affective Commitment and Organizational Citizenship Behaviours.

SEM is not a single statistical technique, but rather a set of analytic tools that utilize covariance matrices to address hypotheses about models. There are two important aspects to structural equation modeling: (i) the causal process under study are represented by a series of structural (e.g., regression) equations, and (ii) these structural relations can be modelled pictorially to allow for a clearer conceptualization of the theory being studied (Byrne, 2014). SEM takes a confirmatory approach, rather than exploratory, to data analysis; it provides explicit estimates for measurement error; and it uses a matrix of variances and covariances amongst observed variables to estimate hidden variables (Byrne, 2014; Valluzzi, Larson, & Miller, 2003).

Adding all items into the SEM caused the statistical program to cease, disrupting internal mathematical operations. This can sometimes be the result of extensive multicollinearity amongst variables (Meyers et al., 2013). To address this, each latent construct was added into the SEM, one construct at time, from left to right (see Figure 4.1). I started with the (only) exogenous construct, perceived organizational justice. First, the four factor model for organizational justice and the one factor model for POS was added, followed by all 8 targets of affective commitment, concluding with both OCBI and OCBO. Each time a new latent construct was added, the LISREL output was reviewed (e.g., measurement equations, structural equations, goodness-of-fit statistics, standardized residuals, and suggested modification indices). Once again, determination of goodness of fit was based on the accumulation of evidence across all the statistics.

After combining the justice constructs and POS, a warning appeared indicating that there was multicollinearity within the model. Importantly, this is the first time all of these constructs have been combined in a single model. Niemelä-Nyrhinen & Leskinen (2014) point out the misconception that SEM is robust enough to deal with multicollinearity (Niemelä-Nyrhinen & Leskinen, 2014). This, however, is inaccurate: multicollinearity can distort the interpretation of multiple regression results. As Meyers et al. (2013) explain, if two or more variables are highly correlated, they are largely confounded with one another, essentially measuring the same characteristic, and making it impossible to determine which of the variables is more relevant (Meyers et al, 2013). In addition, the values of the standardized regression coefficients of the highly correlated independent variables are distorted, exceeding the expected range of ± 1 . Another problem with multicollinearity is that the standard errors of the regression weights of those multicollinear predictors can be inflated, increasing confidence intervals (sometimes including zero). When this occurs, one cannot determine if an increase in the predictor is associated with an increase or decrease in the criterion variable.

Two methods for addressing multicollinearity in the structural model are to either utilize a model comparison approach and restrain paths as per Marsh, Dowson, Pietsch, and Walker (2004), or to remove several of the highly correlated variables (Field, 2014; Marsh, Dowson, Pietsch, & Walker, 2004). Unfortunately the model comparison approach and restraining paths did not change results.

The second option, removing several of the highly correlated variables, would have meant deletion of many of the variables and would most likely have altered the factor structure.

Additional diagnostic investigation to assess specification of SEM was performed as per Hayduk (2014). There were no problems with the data (i.e., missing data, use of incorrect variables, or recoding errors). There were no problems with the modelling process (i.e., syntax, program defaults, inappropriate estimators, or fixed values). Finally, regarding theory, all relationships were based on the extant literature. Group level causes were considered (i.e., gender, roles, primary area of practice), however a larger sample size would have been required.

As a result, to further investigate the relationships, the decision was made to conduct a path analysis using average scores for each of the constructs to see if multicollinearity would still be an issue. Since path analysis does not include the correlations between each of the observed measures, this method mitigated the issue of multicollinearity.

Since path analysis was used to further investigate the relationships between the observed measures, the latent variables are not included in the analysis that follows, nor are measurement errors accounted for. The full implications of these necessary exclusions are discussed in a later chapter.

Path Analysis

Path analysis is the simplest case of SEM, where latent variables are not included in the model. Because there are no latent variables included in a path analysis, there is no measurement model to assess. A mean response score over all items in each scale was computed in SPSS for the path analysis. Prior to conducting the path analysis, however, statistical assumptions underlying path analysis, and assumptions regarding normality, were assessed in order to ensure that path analysis was an appropriate approach.

Statistical Assumptions Underlying Path Analysis

The assumptions for path analysis are the same as those for multiple regression: linear relationship, multivariate normality, variables are measured without error, and homoscedasticity. There are five

additional assumptions underlying path analysis when multiple regression is used (Kline, 2011; Meyers et al. 2013): (1) Relations between variables in the model are linear; (2) The errors associated with endogenous variables are not correlated with the variables that are predicting that variable; (3) There is only a one-way causal flow in the model, called a recursive model; (4) The variables are measured on at least an interval or near-interval scale; and (5) The variables are measured without error, hence the reliability of the measured variables is perfect. All were assessed to ensure that the statistical assumptions were met in order to proceed with path analysis.

Assumptions of Normality

Next, assumptions of normality were then assessed. Recall, that due to the categorical nature of the data, normality checks in SPSS were not initially performed as the data are ordinal. Special matrices are created within LISREL, checking for bivariate normality. Since, however, a mean response score for all items in each scale was computed for the path analysis, assumptions of normality were then performed in SPSS.

Probability-probability plots (P-P plots) plot the cumulative probability of a variable against the cumulative probability of a particular distribution, or normal distribution. Data are ranked and sorted, then for each rank, the corresponding z-score is calculated, creating an 'expected value' that the score should have in a normal distribution. The actual z-score is plotted against the expected z-score. If the data are normally distributed, the actual z-score will be the same as the expected z-score, resulting in a straight diagonal line. Kurtosis measures the degree to which scores cluster in the tails of a frequency distribution, and skew is a measure of the symmetry of a frequency distribution (Field, 2014).

A distribution can deviate from normality by lack of symmetry, skew, or by pointiness, kurtosis. If there is a positive skew, the tall bars, or frequent scores, are clustered at the lower end and the tail points to the higher/more positive scores. When there is a negative skew, the frequent scores are clustered at the higher end, and the tail points to the lower/more negative scores (Field, 2014). Kurtosis refers to whether the data are peaked or flat relative to a normal distribution. Positive kurtosis is pointy and has many scores in the tails, also referred to as a leptokurtic distribution.

Negative kurtosis tends to be flatter and relatively thin in the tails, known as platykurtic. In a normal distribution, values of skewness and kurtosis are 0 (Field, 2014).

Normal quantile-quantile (Q-Q) plots plot the quantiles (values that split a data set into equal portions) of the data. Detrended P-P and Q-Q plots depict the actual deviations of the data points from the straight horizontal line at zero. No specific pattern in a detrended plot indicates normality of the variable.

Kolmogorov-Smirnov test and Shapiro-Wilk test also helps to determine if the distribution of scores deviates from a comparable normal distribution. It compares the scores in the sample to a normally distributed set of scores with the same mean and standard deviation. If the test is non-significant ($p > .05$), it means that the distribution of the sample is not significantly different from a normal distribution, in other words, it is most likely normal. A significant test ($p < .05$) indicates that the distribution is significantly different from a normal distribution. However, in large samples, the test can be significant even for small and unimportant effects, and in small samples they lack power to detect violations of assumptions.

Since only mild skewness was observed (see Results chapter), path analysis was conducted.

Mediation

Mediation refers to a situation when the relationship between a predictor variable and an outcome variable can be explained by their relationship to a third intervening variable, the mediator (Field, 2014).¹ If the strength of relationship between the predictor and outcome is reduced by including the mediator, then mediation is said to occur. ‘Perfect mediation’ occurs when the relationship between a predictor variable and an outcome variable can be completely explained by a third variable. Only one mediation effect is identified in the literature.² Since this was the first time all

¹ No moderating effects are identified in the literature.

² The only indirect effect identified in the literature was POS mediation of the relationship between procedural justice and affective organizational commitment in a study involving 367 employees from variety of organizations (Rhoades et al., 2001).

of the constructs were considered in a single model, (a four factor justice model, a one factor POS model, an eight factor affective commitment model, and a two factor OCB model), the path model was reviewed to identify any potential mediating effects. In total, 18 potential mediation or indirect effects were identified in the final path model.

All of the assumptions for regression were also considered for mediation analysis. Hence all assumptions are the same as those previously discussed. Although mediation can be tested using path analysis, it is more complex and requires multiple steps as one would need to first test the model without the mediator, and then again with the mediator (Field, 2014). For the purposes of this study, 18 potential mediation effects in the final model were tested by conducting a one-step regression analysis in SPSS using Hayes' PROCESS download tool for SPSS (<http://www.afhayes.com>).

By default PROCESS uses 1000 bootstrap samples. Bootstrapping is a technique from which the sampling distribution is estimated by taking repeated samples from the dataset (Field, 2014). Bootstrapping is a robust method by which sample data are treated as a population from which smaller samples are taken, putting each score back prior to a new one being drawn. The mean for each sample is calculated. This permitted a quick method for determining whether mediation occurred in the final model.

Mediator effect sizes are also reported. A small effect ($k^2 = .01$) suggests that the effect explains 1% of the total variance; a medium effects size ($k^2 = .09$) suggests the effect accounts for 9 % of the total variance; and a large effect size ($k^2 = .25$) suggests that the effect accounts for 25% of the variance (Field, 2014; Preacher & Kelley, 2011).

Chapter 4

Results

In this chapter, the results of my analysis are reported. Response rates and sample characteristics are first discussed, followed by findings of the measurement models and structural model.

Response Rate and Sample Size

Of the 7,364 emails distributed containing a link to the survey, five emails were undelivered/bounced. 1,309 email recipients completed the survey, for a response rate of 18%. Since the study focuses on frontline RNs, 633 are not eligible for inclusion in the study: 579 held positions of leadership, 25 are Nurse Practitioners, and seven are Registered Practical Nurses. These positions are excluded as, compared to RNs, these groups have significantly different roles, tasks, responsibilities and reporting structures. These differences result in different interactions. In addition, five individuals are excluded as they emailed the researcher, indicating that they are unable to properly complete the survey; four had never received an evaluation and one considered herself both leadership and frontline. Having a performance appraisal was important as several of the questions on the survey refer to ‘the authority figure who conducts their performance evaluation.’ Finally 13 duplicates are also removed, identified by IP address, date and time of survey completion. The final sample consisted of 676 eligible/usable complete cases with no missing data for analysis.

Sample Characteristics

What follows is a series of tables and explanatory prose to report results. Descriptive analyses are completed to summarize characteristics about the respondents including: age, education, number of organizations employed by, employment status, geographic location, union status, involvement in academia, primary area of practice, years of nursing experience, years working with current organization, years working in current department, years working with current supervisor, and years remaining before retirement.

Z-tests are performed to determine if there are any statistical differences between the study sample distribution and the CNO data representing all Ontario nurses. P-values are calculated for two-tailed comparisons of age, gender, employment status, number of employers and Local Health Integration Network (LHIN), see Appendix R. The far-right columns in Table 4.1 through Table 4.5, are marked with an “*” to indicate the presence of a significant difference between the study sample and the population of Ontario nurses. Recall that an effect size of 0.2 constitutes a small effect; 0.5 constitutes a medium effects size; and 0.8 constitutes a large effect size. The few categories that have statistical differences only have small effect sizes, with the exception of the “Hamilton Niagara Haldimand Brant” LHIN which has a small to medium effect size. Based on these findings, the study sample appears to be representative of the Ontario nursing population.

The majority of respondents (59.6%) are above the age of 45. Only 5.0% are under the age of 25. The sample data reflects the 2014 CNO membership statistics, which is representative of all Ontario RNs. All RNs in Ontario are required to register with the CNO in order to practice. Of study respondents, 4.1 % of the sample are male. This too is in keeping with all Ontario RNs as per the College of Nurses of Ontario data, which identifies 6.1% of their RN membership as male (CNO, 2015). These data are summarized in Table 4.1 and Table 4.2.

Table 4.1. Summary of Age

Characteristic		This Study (RNAO) N = 676	All Ontario RNs (CNO data, 2014) N = 104, 298	Significant Difference b/w groups (Cohen's <i>d</i>)
		(%)	(%)	
Age	18-24	5.0	4.1	
	25-29	10.5	10.0	
	30-34	9.3	9.5	
	35-39	7.1	9.7	*0.1877
	40-44	8.4	12.2	*0.2291
	45-49	12.6	13.7	
	50-54	15.7	14.0	
	55-59	16.1	13.0	*0.1379
	60-64	11.2	9.2	
	>=65	4.0	4.6	

*Note: results may not add to 100 due to rounding

Table 4.2. Gender

Characteristic	This Study (RNAO) N = 676 (%)	All Ontario RNs (CNO data, 2014) N = 104, 298 (%)	Significant Difference b/w groups (*)
Gender			
Male	4.1	6.1	*0.2307
Female	95.9	93.9	*0.2307

A large portion of the respondents (67.9%) work full time. Part-time workers account for 26.3% of the sample, and the remainder are casual employees (5.8%). 79.4% work for one organization, 18.2% work for two organizations, and 2.3% work for three or more organizations. Once again, these findings are very similar to the population of RNs in Ontario. The results are presented in Table 4.3 and Table 4.4.

Table 4.3. Employment Status

Employment	This Study (RNAO) N = 676 (%)	All Ontario RNs (CNO data, 2014) N = 104, 298 (%)	Significant Difference b/w groups (*)
FT	67.9	66.5	
PT	26.3	26.2	
Casual	5.8	7.2	

Table 4.4. Number of Employers

# Employers	This Study (RNAO) N = 676 (%)	All Ontario RNs (CNO data, 2014) N = 104, 298 (%)	Significant Difference b/w groups (*)
1	79.4	84.2	*0.1786
2	18.2	13.8	*0.1815
3 +	2.3	2	

The highest percentage of respondents work in the Toronto Central LHIN (17.6%), Champlain LHIN (12.0%), and South West LHIN (10.9%). The fewest respondents work- in North West

(4.0%), Central West (3.8%), North Simcoe Muskoka (3.3%) and Erie St. Claire (2.8%). These results are in keeping with the College of Nurses of Ontario membership statistics by LHIN (CNO, 2015). As mentioned above, the few categories that have statistical differences only have small effect sizes, with the exception of the “Hamilton Niagara Haldimand Brant” LHIN, which only has a small to medium effect size. The study sample appears representative of the Ontario nursing population. These data are presented in Table 4.5.

Table 4.5. Distribution by LHIN

Characteristic	This Study (RNAO) N = 676 (%)	All Ontario RNs (CNO data, 2014) N = 104, 298 (%)	Significant Difference b/w groups (*)
LHIN			
Central	8.1	8.6	
Central East	8.9	8.4	
Central West	3.8	3.3	
Champlain	12.0	10.6	
Erie St Clair	2.8	4.6	*0.284
Hamilton Niagara Haldimand	6.2	10.8	*0.3337
Mississauga Halton	7.2	6.8	
North East	5.0	5.4	
North Simcoe Muskoka	3.3	3.4	
North West	4.0	2.6	
South East	5.0	4.6	
South West	10.9	8.7	*0.1377
Toronto Central	17.6	17.5	
Waterloo Wellington	5.0	4.6	

*Note: results may not add to 100 due to rounding

Based on the above demographics, the sample is a fair representation of the RN population of Ontario, the population of interest in this study. Unable to compare these data with the CNO, the following are additional respondent characteristics. The majority of respondents are unionized (62.4%), with a few individuals unsure (0.6%). A high proportion work in urban settings, defined as a major city or town (79.6%). A large portion of the sample hold undergraduate degrees (50.7%) or college diplomas (35.2%). Fourteen percent hold a graduate degree report being

involved in academia (e.g., regularly participate in research, education, and scholarship). Community (45%) and hospitals (41.3%) account for the largest percentage of nursing employers. 4.5% work in Long Term Care, and 9.3% report ‘other’ for care setting. These data are presented in Table 4.6.

Table 4.6. Additional Respondent Characteristics

Characteristic	%
Unionized	
Yes	62.4
No	37.0
Unsure	0.6
Organization Location	
Urban	79.6
Rural	20.4
Nursing Employer	
Hospital	41.3
Community	45.0
LTC	4.4
Other	9.3
Education	
College Diploma	35.2
University Undergraduate	50.7
Graduate Degree	14.1
Academia	
Yes	29.6
No	70.4

*Note: N = 676, % results may not add to 100 due to rounding

Regarding primary area of practice, respondents had the option of specifying ‘Other.’ The highest percentage of respondents selected ‘Other’ (57.3%), with just over a quarter of the sample (27.2%) identifying as primary care workers. Examples of ‘Other’ areas of practice included pediatrics, professional practice, endoscopy, ambulatory care, and clinical informatics to name a few. See Table 4.7 for primary areas of practice.

Table 4.7. Primary Area of Practice

Characteristic	
Primary Area of Practice	%
Primary care	26.6
Cardiac	0.7
Critical	4.3
Emergency	3.6
medicine, surgery, or combined	8.1
Other	56.7

*Note: N = 676, % results may not add to 100 due to rounding

Amongst the respondents, the lowest percentage of respondents (3.1%) have less than one year of experience, and the highest percentage of respondents (13.3%) have 1-4 years of experience. The highest percentage of respondents are fairly new to their organizations, having worked with their organization 1-4 years (28.2%) and 5-10 years (25.8%). Similarly, approximately one third of respondents have worked in their current department for 1-4 years (33%) and 5-10 years (28.1%). Over half of the sample have worked with their current supervisor for 1-4 years (53.7%) and almost a quarter (23.8%) for less than a year. Over half of the sample (56.1%) will be retiring in the next 15 years. For a summary of years of experience and employment characteristics, see Table 4.8.

Table 4.8. Years of Experience and Employment Characteristics

Characteristic	<1	1-4	5-10	11-15	16-20	21-25	26-30	31-35	36-40	>=41
# Years	%	%	%	%	%	%	%	%	%	%
Nursing experience:	3.1	13.3	11.1	8.4	11.2	12.1	12.6	11.2	8.9	8.0
With current organization:	8.3	28.4	25.6	16.4	5.9	4.6	6.8	2.7	0.9	0.4
In current department:	11.7	33.1	28.0	15.8	4.0	4.3	2.1	0.6	0.3	0.1
Under current supervisor:	24.3	53.4	16.6	3.3	1.6	0.7	0.1	0.0	0.0	0.0
Remaining before retirement:	3.4	17.8	20.1	13.6	9.0	9.6	7.0	7.1	4.3	7.2

*Note: N = 676, % results may not add to 100 due to rounding

Study Instruments

The frequencies, means, and standard deviations of responses for each of the study variables were calculated in SPSS and are reported below. There is no missing data and a sufficiently large sample. LISREL was used to produce Univariate Normality statistics, see Appendix S. With the exception of a few items that have mild skew and kurtosis, the items are relatively normally distributed. Multivariate normality is assessed via ‘Relative Multivariate Kurtosis,’ the Mardia-based *kappa*, rescaled to have a mean of 1. The Relative Multivariate Kurtosis for this sample is 1.122. Since this value is close to 1, the distribution is multivariate normal (Jöreskog & Sörbom, 2002). The variables and included relationships are suitable and satisfy the assumptions, and no fatal errors were obtained in LISREL. All five assumptions underlying path analysis are met: (1) The relations between variables in the model are linear; (2) The errors associated with endogenous variables are not correlated with the variables that are predicting that variable; (3) There is only a one-way causal flow in the model; (4) The variables are measured on at least an interval or near-interval scale; and (5) The variables are measured without error. In addition, normality of the scales are also tested in SPSS so that histograms, P-P and Q-Q plots could also be viewed. The scales met normality, with the exception of a few that are slightly skewed, and one (Affective Commitment to Patients) which had more severe kurtosis. The histograms, P-P and Q-Q plots can be found in Appendix T.

Organizational Justice

Organizational justice items use a Likert scale ranging from 1 (Very Small Extent) to 5 (Very Large Extent). Table 4.9 shows the mean score for each scale: $M_{\text{procedural justice}} = 3.02$, $SD = 0.99$; $M_{\text{distributive justice}} = 3.09$, $SD = 1.03$; $M_{\text{interpersonal justice}} = 3.88$, $SD = 1.11$; and $M_{\text{informational justice}} = 3.35$, $SD = 1.11$. Table 4.10 to Table 4.15 display the frequency distributions for the items in these scales.

Table 4.9. Descriptive Statistics for Instruments

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
GMJD	676	1.00	5.00	3.0884	1.02670	-.358	.094	-.532	.188
GMJP	676	1.00	5.00	3.0224	.98502	-.254	.094	-.419	.188
GMJInper	676	1.00	5.00	3.8772	1.10801	-.898	.094	.029	.188
GMJInfo	676	1.00	5.00	3.3503	1.11130	-.419	.094	-.594	.188
GMPOS	676	1.00	7.00	4.0906	1.54069	.002	.094	-.682	.188
MACOrg	676	1.00	5.00	3.8772	1.01067	-.814	.094	.004	.188
MACsup	676	1.00	5.00	3.3969	1.22916	-.413	.094	-.807	.188
MACco	676	1.00	5.00	4.1627	.91902	-1.249	.094	1.105	.188
MACpt	676	1.00	5.00	4.6548	.52449	-2.024	.094	5.559	.188
MACprof	676	1.00	5.00	4.2771	.82540	-1.356	.094	1.615	.188
MACwrk	676	1.00	5.00	3.6558	.84418	-.577	.094	-.038	.188
MACtsk	676	1.00	5.00	4.0385	.86800	-1.094	.094	1.223	.188
MACcar	676	1.00	5.00	3.7855	.84416	-.463	.094	-.316	.188
GMOCBI	676	1.00	5.00	4.0292	.57303	-.608	.094	1.331	.188
GMOCBO	676	1.00	5.00	3.6104	.68529	-.391	.094	.208	.188
Valid N (listwise)	676								

Table 4.10. Distributive Justice Frequencies

		Very Small Extent %	Small Extent %	Moderate Extent %	Large Extent %	Very Large Extent %
The following items refer to your performance evaluation. To what extent:						
JD1	Does your performance evaluation reflect the effort you have put into your work?	10.5	15.7	32.5	32.7%	8.6
JD2	Is your performance evaluation appropriate for the work you have completed?	9.8	18.5	30.2	34.8	6.8
JD3	Does your performance evaluation reflect what you have contributed to the organization?	13.0	21.4	32.0	27.4	6.2
JD4	Is your performance evaluation justified, given your performance?	10.4	13.6	30.3	37.6	8.1

*Note: results may not add to 100 due to rounding

Table 4.11. Procedural Justice Frequencies

		Very Small Extent %	Small Extent %	Moderate Extent %	Large Extent %	Very Large Extent %
	The following items refer to the procedures used to arrive at your performance evaluation. In other words, it refers to the procedures or processes used to evaluate you. To what extent:					
JP1	Have you been able to express your views and feelings during the process?	10.9	15.5	29.4	29.9	14.2
JP2	Have you had influence over the outcome of your performance appraisal?	13.9	19.8	33.4	26.6	6.2
JP3	Have those procedures been applied consistently?	14.3	17.5	35.2	25.9	7.1
JP4	Have those procedures been free of bias?	13.5	17.9	32.1	29.0	7.5
JP5	Have those procedures been based on accurate information?	11.1	14.2	34.5	32.7	7.5
JP6	Have you been able to appeal the outcome of your performance appraisal?	21.7	16.9	31.1	24.3	6.1
JP7	Have those procedures upheld ethical and moral standards?	11.2	11.7	32.4	32.4	12.3

*Note: results may not add to 100 due to rounding

Table 4.12. Interpersonal Justice Frequencies

		Very Small Extent %	Small Extent %	Moderate Extent %	Large Extent %	Very Large Extent %
	The following items refer to the AUTHORITY FIGURE who conducts your performance evaluation. To what extent:					
JInper1	Has she/he treated you in a polite manner?	4.1	6.8	15.7	35.5	37.9
JInper2	Has she/he treated you with dignity?	5.6	7.4	17.3	33.6	36.1
JInper3	Has she/he treated you with respect?	6.1	8.7	17.3	31.7	36.2
JInper4	Has she/he refrained from improper remarks or comments?	7.1	7.8	16.9	30.0	38.2

*Note: results may not add to 100 due to rounding

Table 4.13. Informational Justice Frequencies

		Very Small Extent %	Small Extent %	Moderate Extent %	Large Extent %	Very Large Extent %
	The following items refer to the AUTHORITY FIGURE who conducts your performance evaluation. To what extent:					
JInfo1	Has she/he been candid (truthful/straightforward) in her/his communication with you?	6.8	8.9	22.6	37.9	23.8
JInfo2	Has she/he explained the procedures for determining your evaluation thoroughly?	11.2	12.9	24.4	33.6	17.9
JInfo3	Were her/his explanations regarding the procedures reasonable?	10.9	10.1	26.0	35.1	17.9
JInfo4	Has she/he communicated pertinent details in a timely manner?	13.9	14.9	25.4	30.2	15.5
JInfo5	Has she/he seemed to tailor her/his communications to individuals' specific needs?	14.1	14.6	23.8	31.5	16.0

*Note: results may not add to 100 due to rounding

Perceived Organizational Support (POS)

The POS scale is a Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). Table 4.9 shows the mean score for POS, $M_{POS} = 4.09$, $SD = 1.54$. Table 4.14 displays the frequency distributions for the items in this scale. Negatively worded items are identified with italics. Negative items have been reverse coded so that in each case agreement indicates the positive response.

Table 4.14. Perceived Organizational Support

POS		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Disagree nor Agree	Slightly Agree	Moderately Agree	Strongly Agree
		%	%	%	%	%	%	%
The following statements represent possible opinions that YOU may have about working at your organization. Please indicate the degree of your agreement or disagreement with each statement.								
POS1	The organization values my contribution to its well-being.	9.8	8.4	9.9	12.6	17.6	27.5	14.2
POS2	<i>The organization fails to appreciate any extra effort from me</i>	9.8	13.8	10.2	12.4	18.0	18.2	17.6
POS3	<i>The organization would ignore any complaint from me.</i>	13.2	19.8	17.0	12.9	14.9	14.3	7.8
POS4	The organization really cares about my well-being.	13.0	14.2	11.4	14.5	17.2	19.4	10.4
POS5	<i>Even if I did the best job possible, the organization would fail to notice.</i>	12.1	14.6	14.1	13.8	17.3	15.5	12.6
POS6	The organization cares about my general satisfaction at work.	14.9	13.2	12.7	14.6	19.4	16.7	8.4
POS7	<i>The organization shows very little concern for me.</i>	12.9	15.1	15.1	17.3	14.1	13.5	12.1
POS8	The organization takes pride in my accomplishments at work.	11.1	9.9	10.7	20.4	21.4	15.1	11.4

Affective Commitment

The affective commitment scales are Likert scales ranging from 1 (Totally Disagree) to 5 (Totally Agree). Table 4.9 shows the mean affective commitment scores for each of the eight targets. The highest mean affective commitment score relates to patients ($M_{\text{patients}} = 4.65$, $SD = 0.52$). This is followed by profession ($M_{\text{profession}} = 4.28$, $SD = 0.83$), co-workers ($M_{\text{co-workers}} = 4.16$, $SD = 0.92$), tasks ($M_{\text{tasks}} = 4.04$, $SD = 0.87$), the organization ($M_{\text{organization}} = 3.88$, $SD = 1.01$), one's career ($M_{\text{career}} = 3.79$, $SD = 0.84$) and work ($M_{\text{work}} = 3.66$, $SD = 0.84$). The lowest mean affective commitment score relates to one's supervisor ($M_{\text{supervisor}} = 3.40$, $SD = 1.23$). Table 4.15 through Table 4.22 display the frequency distributions for the items in this scale. Negatively worded items are identified with italics. Negative items have been reverse coded so that in each case agreement indicates the positive response.

Table 4.15. Frequency Distribution - Affective Commitment to the Organization

	Affective Commitment to the Organization	Totally Disagree %	Partly Disagree %	Neutral %	Partly Agree %	Totally Agree %
	The following items express what YOU may feel about yourself as a member of your organization.					
ACorg1	I am proud to say that I work for my organization	4.4	5.8	20.0	32.0	37.9
ACorg2	My organization means a lot to me	4.3	8.0	24.7	34.5	28.6
ACorg3_Rec	<i>I DON'T like working for my organization</i>	47.9	20.0	16.4	10.7	5.0

*Note: results may not add to 100 due to rounding

Table 4.16. Frequency Distribution - Affective Commitment to Supervisor

Affective Commitment to Supervisor		Totally Disagree %	Partly Disagree %	Neutral %	Partly Agree %	Totally Agree %
The following items express what YOU may feel about yourself as a member of your organization.						
ACsup1	I like the values conveyed by the authority figure who conducts my performance evaluation	9.9	11.2	24.7	28.1	26.0
ACsup2	I feel privileged to work with someone like the authority figure who conducts my performance evaluation	13.8	12.9	25.9	23.4	24.1
ACsup3	When I talk to my friends about the authority figure who conducts my performance evaluation, I describe him/her as a great person to work with	12.4	13.0	23.8	24.9	25.9

*Note: results may not add to 100 due to rounding

Table 4.17. Frequency Distribution - Affective Commitment to Co-workers

Affective Commitment to Co-workers		Totally Disagree %	Partly Disagree %	Neutral %	Partly Agree %	Totally Agree %
The following items express what YOU may feel about yourself as a member of your organization.						
ACco1	I'm happy to work with my co-workers in my unit (includes interprofessional)	0.7	6.7	5.9	31.4	55.3
ACco2	My co-workers in my unit (includes interprofessional) make me feel like going to work	3.1	7.1	15.7	33.7	40.4
ACco3	When I talk to my friends about my co-workers in my unit (includes interprofessional), I describe them as great people to work with	2.5	5.9	12.6	33.3	45.7

*Note: results may not add to 100 due to rounding

Table 4.18. Frequency Distribution - Affective Commitment to Patients

Affective Commitment to Patient		Totally Disagree %	Partly Disagree %	Neutral %	Partly Agree %	Totally Agree %
The following items express what YOU may feel about yourself as a member of your organization.						
ACpt1	I really care about the satisfaction of my organization's patients	0.4	0	3.0	13.2	83.4
ACpt2	Delivering quality care and/or services to my organization's patients is a major source of satisfaction for me	0.4	0.6	2.8	17.0	79.1
ACpt3	In my opinion, the satisfaction of my organization's patients is a priority	2.5	1.9	8.1	24.4	63.0

*Note: results may not add to 100 due to rounding

Table 4.19. Frequency Distribution - Affective Commitment to Profession

Affective Commitment to Profession		Totally Disagree %	Partly Disagree %	Neutral %	Partly Agree %	Totally Agree %
The following items express what YOU may feel about yourself as a member of your organization.						
ACprof1	I'm proud to say this is my profession	0.9	1.3	4.7	15.8	77.2
ACprof2	I would be happy to practice this profession until retirement	3.7	4.7	11.5	20.4	59.6
ACprof3	I like my profession too much to think about changing	4.0	10.9	17.0	28.7	39.3

*Note: results may not add to 100 due to rounding

Table 4.20. Frequency Distribution - Affective Commitment to Work

Affective Commitment to Work		Totally Disagree %	Partly Disagree %	Neutral %	Partly Agree %	Totally Agree %
The following items express what YOU may feel about yourself as a member of your organization.						
ACwrk1	Work is a priority in my life	3.0	8.0	14.8	40.8	33.4
ACwrk2	One of the most satisfying things in my life is the fact that I work	2.2	9.8	13.9	41.6	32.5
ACwrk3	Most of my personal objectives are focused on work	7.7	23.1	28.8	31.8	8.6

*Note: results may not add to 100 due to rounding

Table 4.21. Frequency Distribution - Affective Commitment to Tasks

Affective Commitment to Tasks		Totally Disagree %	Partly Disagree %	Neutral %	Partly Agree %	Totally Agree %
The following items express what YOU may feel about yourself as a member of your organization.						
ACtsk1	I find the tasks I perform in my current position stimulating	2.7	6.5	11.8	41.9	37.1
ACtsk2	I find the tasks I perform in my current position rewarding	2.4	5.3	8.7	42.9	40.7
ACtsk3_Rec	<i>I DON'T like the tasks I perform in my current position</i>	39.2	30.9	16.3	10.9	2.7

*Note: results may not add to 100 due to rounding

Table 4.22. Frequency Distribution - Affective Commitment to Career

Affective Commitment to Career		Totally Disagree %	Partly Disagree %	Neutral %	Partly Agree %	Totally Agree %
The following items express what YOU may feel about yourself as a member of your organization.						
ACcar1	I would like to hold increasingly important positions throughout my career	5.0	6.4	24.4	26.3	37.9
ACcar2	It is important for me to move up the ranks or obtain promotions	12.6	13.5	29.6	26.8	17.6
ACcar3	I feel it is important to plan one's career	0.6	1.6	14.1	38.0	45.7

*Note: results may not add to 100 due to rounding

Organizational Citizenship Behaviour (OCB).

The OCB scales are Likert scales ranging from 1 (Never) to 5 (Always). Table 4.9 shows the mean scores for OCBI and OCBO, $M_{OCBI} = 4.03$, $SD = 0.57$ and $M_{OCBO} = 3.61$, $SD = 0.69$. Table 4.23 and Table 4.24 display the frequency distributions for the items in these scales.

Table 4.23. Organizational Citizenship Behaviours to Individuals (OCBI)

		Never %	Rarely %	Sometimes %	Often %	Always %
To what extent do you agree with the following statements?						
OCBI1	Help others who have been absent.	1.2	1.9	17.5	48.2	31.2
OCBI2	Willingly give your time to help others who have work-related problems.	0.4	0.9	18.2	46.0	34.5
OCBI3	Adjust your work schedule to accommodate other employees' requests for time off.	1.8	5.8	32.0	42.0	18.5
OCBI4	Go out of the way to make newer employees feel welcome in the work group.	0.9	0.9	6.8	38.2	53.3
OCBI5	Show genuine concern and courtesy toward coworkers, even under the most trying business or personal situations.	0.3	0.3	7.2	42.2	50.0
OCBI6	Give up time to help others who have work or nonwork problems.	1.2	2.8	25.9	42.8	27.4
OCBI7	Assist others with their duties.	0.6	0.1	14.5	48.2	36.5
OCBI8	Share personal property with others to help their work.	7.4	14.2	29.3	30.6	18.5

*Note: results may not add to 100 due to rounding

Table 4.24. Organizational Citizenship Behaviours to the Organization (OCBO)

		Never %	Rarely %	Sometimes %	Often %	Always %
	To what extent do you agree with the following statements?					
OCBO1	Attend functions that are not required but that help the organizational image.	8.7	21.4	39.2	25.9	4.7
OCBO2	Keep up with developments in the organization.	0.4	4.1	22.3	52.2	20.9
OCBO3	Defend the organization when other employees criticize it.	5.3	13.6	43.0	28.6	9.5
OCBO4	Show pride when representing the organization in public.	2.1	5.2	21.9	38.6	32.2
OCBO5	Offer ideas to improve the functioning of the organization.	1.6	8.1	33.3	39.6	17.3
OCBO6	Express loyalty toward the organization.	2.1	7.2	25.0	41.7	24.0
OCBO7	Take action to protect the organization from potential problems.	2.1	7.1	28.6	37.7	24.6
OCBO8	Demonstrate concern about the image of the organization.	2.2	8.7	29.4	36.8	22.8

*Note: results may not add to 100 due to rounding

Measurement Models and Reliability

Before attempting the Structural Equation Model, confirmatory factor analysis (CFA) was performed on each of the constructs as a stand-alone analysis to determine if the relationships between the variables in the hypothesized model resemble the relationships between the variables in the observed data set (Meyers, 2013).

Confirmatory Factor Analysis for Perceived Organizational Justice

Colquitt's (2001) organizational justice scale measures four constructs of organizational justice: distributive (4 items), procedural (7 items), interpersonal (4 items), and informational (5 items).

Item definitions can be found in Table 4.25 through Table 4.28.

Table 4.25. Distributive Justice Indicators

Survey Item – Distributive	Label
The following items refer to your performance evaluation. To what extent:	
Does your performance evaluation reflect the effort you have put into your work?	JD1
Is your performance evaluation appropriate for the work you have completed?	JD2
Does your performance evaluation reflect what you have contributed to the organization?	JD3
Is your performance evaluation justified, given your performance?	JD4

Table 4.26. Procedural Justice Indicators

The following items refer to the procedures used to arrive at your performance evaluation. In other words, it refers to the procedures or processes used to evaluate you. To what extent:		Label
Have you been able to express your views and feelings during the process?		JP1
Have you had influence over the outcome of your performance appraisal?		JP2
Have those procedures been applied consistently?		JP3
Have those procedures been free of bias?		JP4
Have those procedures been based on accurate information?		JP5
Have you been able to appeal the outcome of your performance appraisal?		JP6
Have those procedures upheld ethical and moral standards?		JP7

Table 4.27. Interpersonal Justice Indicators

Survey Item – Interpersonal	Label
The following items refer to the AUTHORITY FIGURE who conducts your performance evaluation. To what extent:	
Has she/he treated you in a polite manner?	JInper1
Has she/he treated you with dignity?	JInper2
Has she/he treated you with respect?	JInper3
Has she/he refrained from improper remarks or comments?	JInper4

Table 4.28. Informational Justice Indicators

Survey Item – Informational	Label
The following items refer to the AUTHORITY FIGURE who conducts your performance evaluation. To what extent:	
Has she/he been candid (truthful/straightforward) in her/his communication with you?	JInfo1
Has she/he explained the procedures for determining your evaluation thoroughly?	JInfo2
Are her/his explanations regarding the procedures reasonable?	JInfo3
Has she/he communicated pertinent details in a timely manner?	JInfo4
Has she/he seemed to tailor her/his communications to individuals' specific needs?	JInfo5

All twenty items are included in the CFA. Figure 4.1 depicts the path diagram created. All paths are significant at the 0.000 level. The correlation matrix for each measured item is presented in Appendix U. The correlation matrix for independent variables (the latent constructs) can be found in Appendix V.

Figure 4.1. CFA Path Diagram for Organizational Justice.

It is suggested that two variables correlated in the middle .7s or higher, should probably not be used together in a regression or any other multivariate analysis (Meyers, 2013), and one is almost certain to encounter problems if a correlation is above .8 (Allison, 1999). Upon review of the correlation matrices in Appendix U and Appendix V, the high correlations between the observed indicators and the very high correlation between the latent constructs, suggests that multicollinearity is a concern. Recall that multicollinearity can distort results in SEM and potentially cause difficulties in determining the unique contribution of the variables to a factor (Field, 2014). A brief discussion regarding these high correlations and its implications can be found later in this chapter at the end of the SEM section, and a more in depth discussion is located in the Discussion, Chapter 5.

Goodness of fit indices. The CFA for the organizational justice model yields the following goodness of fit indices: $\chi^2 = 1179.989$ ($P = 0.0000$); $df = 164$; RMSEA = 0.0957; SRMR = 0.0303; NFI = 0.981; CFI = 0.983; GFI = 0.853. In this example, the chi-square is significant, suggesting a poor fit; this is not surprising, given the large sample size (several hundred cases) (Meyers, 2013). However, based on the other fit statistics, even though I am using more liberal parameters, one can see that this model fits conservative cut offs of NFI and CFI values above .95, and a SRMR value of less than .06.

Reliability analysis. The overall reliability analysis for the distributive justice measure in this study is .947 (excellent). In Table 4.29, one can see that in the *Scale Mean and Scale Variance if Item Deleted* columns, the deletion of any one item does not greatly affect the value. There are no corrected item-total correlations less than .3. Finally, in the *Cronbach's Alpha if Item Deleted* column, there are no values of α greater than the overall α (.947).

Table 4.29. Item-Total Statistics for Distributive Justice

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
JD1	9.22	9.734	.852	.937
JD2	9.25	9.569	.907	.920
JD3	9.43	9.635	.860	.934
JD4	9.16	9.680	.870	.931

The overall reliability analysis for the procedural justice measure in this study is .939 (excellent). In Table 4.30, one can see that in the *Scale Mean and Scale Variance if Item Deleted* columns, the deletion of any one item does not greatly affect the value. There are no corrected item-total correlations less than .3. Finally, in the *Cronbach's Alpha if Item Deleted* column, there are no values of α greater than the overall α (.939).

Table 4.30. Item-Total Statistics for Procedural Justice

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
JP1	17.95	34.754	.810	.928
JP2	18.24	35.571	.799	.929
JP3	18.22	35.533	.792	.930
JP4	18.16	35.053	.824	.927
JP5	18.04	35.209	.855	.925
JP6	18.40	35.588	.725	.936
JP7	17.93	35.293	.796	.930

The overall reliability analysis for the interpersonal justice measure in this study is .968 (excellent). In Table 4.31, one can see that in the *Scale Mean and Scale Variance if Item Deleted* columns, the deletion of any one item does not greatly affect the value. There are no corrected item-total correlations less than .3. However, based on *Cronbach's α if Item Deleted* column, if JInper4 was to be deleted, the Cronbach's α would increase to .977, suggesting that removal of this item would improve reliability. However, this was not done as the value is already considered excellent.

Table 4.31. Item-Total Statistics for Interpersonal Justice

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
JInper1	11.55	11.543	.937	.953
JInper2	11.64	11.031	.955	.947
JInper3	11.68	10.889	.940	.951
JInper4	11.67	11.210	.853	.977

The overall reliability analysis for the informational justice measure in this study is .947 (excellent). In Table 4.32, one can see that in the *Scale Mean and Scale Variance if Item Deleted* columns, the deletion of any one item does not greatly affect the value. There are no corrected item-total correlations less than .3. Finally, in the *Cronbach's Alpha if Item Deleted* column, there are no values of α greater than the overall α (.947).

Table 4.32. Item-Total Statistics for Informational Justice

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
JInfo1	13.12	21.061	.815	.941
JInfo2	13.41	20.059	.843	.936
JInfo3	13.36	19.846	.890	.928
JInfo4	13.57	19.736	.850	.935
Jinfo5	13.54	19.410	.877	.930

Decision: Based on accumulation of evidence of three of the five goodness of fit indices and reliability findings, it is appropriate to include this four factor construct of organizational justice in the SEM. Although modification of the constructs are not performed in this study, a more conservative approach including review of standardized residuals is discussed in Appendix W.

Confirmatory Factor Analysis for Perceived Organizational Support

Perceived Organizational Support (POS) (Rhoades et al., 2001) consists of eight indicators, POS1 through POS8 in Table 4.33. All eight indicators are included in the CFA. *Figure 4.2* depicts the path diagram created. All paths are significant at the 0.000 level. The correlation matrix generated is presented in Appendix X. Upon review of the correlation matrix in Appendix X, the high correlations between the observed indicators suggests that multicollinearity may prove to be a concern during structural equation modelling, when all constructs are included simultaneously in the model. A brief discussion regarding these high correlations and its implications can be found later in this chapter at the end of the SEM section, and a more in depth discussion is located in the Discussion, Chapter 5.

Table 4.33. POS Indicators

Survey Item – POS	Label
The following statements represent possible opinions that YOU may have about working at your organization. Please indicate the degree of your agreement or disagreement with each statement.	
The organization values my contribution to its well-being.	POS1
<i>The organization fails to appreciate any extra effort from me.</i>	POS2_Rec
<i>The organization would ignore any complaint from me.</i>	POS3_Rec
The organization really cares about my well-being.	POS4
<i>Even if I did the best job possible, the organization would fail to notice.</i>	POS5_Rec
The organization cares about my general satisfaction at work.	POS6
<i>The organization shows very little concern for me.</i>	POS7_Rec
The organization takes pride in my accomplishments at work.	POS8

Figure 4.2. CFA Path Diagram for POS.

Goodness of fit indices. The CFA for the POS model yields the following goodness of fit indices: $\chi^2 = 813.222$ ($P = 0.0000$); $df = 20$; RMSEA = .242; SRMR = .0757; NFI = .921; CFI = .922; GFI = .710. Once again, determination of goodness of fit was based on the accumulation of evidence across all the statistics. Both the NFI and CFI are above .90, and SRMR is less than .08.

Reliability analysis. The overall reliability for the POS scale in this study is .925 (excellent). In Table 4.34, one can see that in the *Scale Mean and Scale Variance if Item Deleted* columns, the deletion of any one item would not greatly affect the value. There are no corrected item-total correlations less than .3. Finally, in the *Cronbach's Alpha if Item Deleted* column, there are no values of α greater than the overall α (.925).

Table 4.34. POS Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
POS1	28.13	117.529	.758	.914
POS2_Recode	29.13	120.375	.641	.923
POS3_Recode	28.43	120.222	.688	.919
POS4	28.64	115.608	.784	.912
POS5_Recode	28.79	116.881	.748	.915
POS6	28.78	116.007	.788	.912
POS7_Recode	28.66	115.188	.802	.911
POS8	28.50	118.674	.756	.914

Decision: Based on accumulation of evidence of three of the five goodness of fit indices and reliability findings, and taking a less conservative approach to cut off values, it is appropriate to include this 1 factor POS construct in the SEM. Although modification of the construct is not performed in this study, a more conservative approach including review of standardized residuals is discussed in Appendix Y.

Confirmatory Factor Analysis for Affective Commitment

Affective commitment consists of eight targets (each with 3 items), for a total of 24 items; see Table 4.35. *Affective Commitment Indicators* (Morin et al., 2013). All 24 items are included in the CFA. Figure 4.3 depicts the path diagram created. All paths are significant at the 0.000 level. The correlation matrix for each measured item is presented in Appendix Z. The correlation matrix for independent variables (the latent constructs) can be found in Appendix AA. Upon review of the correlation matrices in Appendix Z and Appendix AA, no correlations are very high ($\geq .8$), indicating multicollinearity will most likely not be a concern in this model, as compared to the previous two models.

Table 4.35. Affective Commitment Indicators

Survey Item – Affective Commitment	Label
The following items express what YOU may feel about yourself as a member of your organization.	
I am proud to say that I work for my organization	ACorg1
My organization means a lot to me	ACorg2
<i>I don't like working for my organization</i>	ACorg3_Rec
I like the values conveyed by the authority figure who conducts my performance evaluation	ACsup1
I feel privileged to work with someone like the authority figure who conducts my performance evaluation	ACsup2
When I talk to my friends about the authority figure who conducts my performance evaluation, I describe him/her as a great person to work with	ACsup3
I'm happy to work with my co-workers in my unit (includes interprofessional - a group of individuals from different disciplines working and communicating with each other)	ACco1
My co-workers in my unit (includes interprofessional) make me feel like going to work	ACco2
When I talk to my friends about my co-workers in my unit (includes interprofessional), I describe them as great people to work with	ACco3
I really care about the satisfaction of my organization's patients	ACpt1
Delivering quality care and/or services to my organization's patients is a major source of satisfaction for me	ACpt2
In my opinion, the satisfaction of my organization's patients is a priority	ACpt3
Work is a priority in my life	ACprof1
I would be happy to practice this profession until retirement	ACprof2
I like my profession too much to think about changing	ACprof3
Work is a priority in my life	ACwrk1
One of the most satisfying things in my life is the fact that I work	ACwrk2
Most of my personal objectives are focused on work	ACwrk3
I find the tasks I perform in my current position stimulating	ACtsk1
I find the tasks I perform in my current position rewarding	ACtsk2
<i>I don't like the tasks I perform in my current position</i>	ACtsk3_Rec
I would like to hold increasingly important positions throughout my career	ACcar1
It is important for me to move up the ranks or obtain promotions	ACcar2
I feel it is important to plan one's career	ACcar3

Figure 4.3. CFA Path Diagram for Affective Commitment.

Goodness of Fit Indices. The CFA for the Affective Commitment model yielded the following goodness of fit indices: $\chi^2 = 1670.956$ ($P = 0.0000$); $df = 224$; RMSEA = 0.0978; SRMR = 0.0618; NFI = 0.935; CFI = 0.943; GFI = 0.831. Once again, determination of goodness of fit was based on the accumulation of evidence across all the statistics. Both the NFI and CFI are above .90, and SRMR is less than .08.

Reliability analysis. The overall reliability for the affective commitment to the organization scale in this study is .863 (good). In Table 4.36, one can see that in the *Scale Mean and Scale Variance if Item Deleted* columns, the deletion of any one item would not greatly affect the value. There are no corrected item-total correlations less than .3. Finally, in the *Cronbach's Alpha if Item Deleted* column, there are no values of α greater than the overall α (.863).

Table 4.36. Item-Total Statistics for Affective Commitment to their Organization

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ACorg1	7.70	4.376	.786	.766
ACorg2	7.88	4.623	.727	.820
ACorg3_recode	7.68	4.099	.715	.837

The overall reliability for the affective commitment to one's supervisor scale in this study is .933 (excellent). In Table 4.37, one can see that in the *Scale if Item Deleted* columns, the deletion of any one item would not greatly affect the value. There are no corrected item-total correlations less than .3. Finally, in the *Cronbach's Alpha if Item Deleted* column, there are no values of α greater than the overall α (.933).

Table 4.37. Item-Total Statistics for Affective Commitment to their Supervisor

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ACsup1	6.70	6.554	.844	.918
ACsup2	6.88	6.009	.887	.883
ACsup3	6.80	6.173	.858	.907

The overall reliability for the affective commitment to one's co-workers scale in this study is .911 (excellent). In Table 4.38, one can see that in the *Scale Mean and Scale Variance if Item Deleted*

columns, the deletion of any one item would not greatly affect the value. There are no corrected item-total correlations less than .3. Finally, in the *Cronbach's Alpha if Item Deleted* column, there are no values of α greater than the overall α (.911).

Table 4.38. Item-Total Statistics for Affective Commitment to their Co-workers

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ACco1	8.15	3.843	.819	.879
ACco2	8.48	3.302	.823	.873
ACco3	8.35	3.443	.832	.863

The overall reliability for the affective commitment to patients scale in this study is .625 (acceptable). In Table 4.39, one can see that there are no corrected item-total correlations less than .3. In the *Scale if Item Deleted* columns, the deletion of ACpt1 or ACpt2 would not greatly affect the value. However, are ACpt3 deleted, it would cause a decrease in the scale variance. Based on *Cronbach's α if Item Deleted* column, the deletion of ACpt3 would result in the increase of Cronbach's α to .641, suggesting that removal of this item would improve reliability. However, since improvement would only be slight, and the model would be left with only two measures, the decision was made not to remove the item.

Table 4.39. Item-Total Statistics for Affective Commitment to their Patients

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ACpt1	9.17	1.580	.466	.525
ACpt2	9.23	1.432	.506	.457
ACpt3	9.53	.907	.428	.641

The overall reliability for affective commitment to profession is .763 (good). In Table 4.40, one can see that there are no corrected item-total correlations less than .3. In the *Scale Mean and Scale Variance if Item Deleted* columns, the deletion of ACprof1 would result in an increase in scale variance. Based on *Cronbach's α if Item Deleted* column, should ACprof1 be deleted, the Cronbach's α would increase to .777, suggesting that removal of this item would improve reliability. However, the item was not removed as improvement would be slight, and the model would be left with only two measures.

Table 4.40. Item-Total Statistics for Affective Commitment to their Profession

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ACprof1	8.16	4.105	.531	.777
ACprof2	8.56	2.594	.686	.572
ACprof3	8.95	2.445	.643	.640

The overall reliability for the affective commitment to their work scale in this study is .727 (good). In Table 4.41, one can see that in the *Scale Mean and Scale Variance if Item Deleted* columns, the deletion of any one item would not greatly affect the value. There are no corrected item-total correlations less than .3. Finally, in the *Cronbach's Alpha if Item Deleted* column, there are no values of α greater than the overall α (.727).

Table 4.41. Item-Total Statistics for Affective Commitment to their Work

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ACwrk1	7.03	3.249	.564	.621
ACwrk2	7.04	3.297	.555	.632
ACwrk3	7.86	3.174	.527	.666

The overall reliability for the affective commitment to tasks scale in this study is .810 (good). In Table 4.42, one can see that in the *Scale Mean and Scale Variance if Item Deleted* columns, the deletion of any one item would not greatly affect the value. There are no corrected item-total correlations less than .3. However, based on *Cronbach's α if Item Deleted* column, should ACtsk3_Recode be deleted, the Cronbach's α would increase to .827, suggesting that removal of this item would improve reliability. However, the item was not removed as improvement would be slight, and the model would be left with only two measures.

Table 4.42. Item-Total Statistics for Affective Commitment to Tasks Performed

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
ACtsk1	8.07	3.333	.677	.721
ACtsk2	7.97	3.344	.730	.673
ACtsk3_Recode	8.18	3.224	.585	.827

The overall reliability for affective commitment to career is .678 (acceptable). In Table 4.43, one can see that in the corrected item-total correlations column, ACcar3 is borderline .3. In the *Scale Mean and Scale Variance if Item Deleted* columns, the deletion of ACcar3 would result in an increase in scale variance. Based on *Cronbach's α if Item Deleted* column, are ACcar3 deleted, the Cronbach's α would increase to .806, suggesting that removal of this item would improve reliability. Although it would be ideal to improve reliability, the item was not removed as the model would be left with only two measures.

Table 4.43. Item-Total Statistics for Affective Commitment to their Career

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
ACcar1	7.50	2.639	.662	.330
ACcar2	8.12	2.484	.603	.424
ACcar3	7.09	4.805	.273	.806

Decision: Based on accumulation of evidence of three of the five goodness of fit indices and reliability findings, and taking a less conservative approach to cut off values, it is appropriate to include this eight factor construct of affective commitment in the SEM. Although modification is not performed in this study, a more conservative approach including review of standardized residuals is discussed in Appendix BB.

Confirmatory Factor Analysis for Organizational Citizenship Behaviour

OCBO and OCBI are measured using 8 items each, for a total of 16 items scale, see Table 4.44 (Lee & Allen, 2002). All 16 items are included in the CFA. *Figure 4.4* depicts the path diagram created. All paths are significant at the 0.000 level. The correlation matrix for each measured

item is presented in Appendix CC. The correlation matrix for Independent variables (the latent constructs) can be found in Appendix DD. Upon review of the correlation matrices in Appendix CC and Appendix DD, no correlations are detected that are very high ($\geq .8$), indicating multicollinearity will most likely not be a concern in this construct - in contrast to the previous two constructs.

Table 4.44. OCB Indicators

Survey Item – OCBI	Label
To what extent do you agree with the following statements?	
I help others who have been absent.	OCBI1
Willingly give your time to help others who have work-related problems.	OCBI2
I adjust my work schedule to accommodate other employees' requests for time off.	OCBI3
I go out of the way to make newer employees feel welcome in the work group.	OCBI4
I show genuine concern and courtesy toward coworkers, even under the most trying business or personal situations	OCBI5
Give up time to help others who have work or nonwork problems.	OCBI6
I assist others with their duties.	OCBI7
Share personal property with others to help their work.	OCBI8
Attend functions that are not required but that help the organizational image.	OCBO1
Keep up with developments in the organization.	OCBO2
Defend the organization when other employees criticize it.	OCBO3
Show pride when representing the organization in public.	OCBO4
Offer ideas to improve the functioning of the organization.	OCBO5
Express loyalty toward the organization.	OCBO6
Take action to protect the organization from potential problems.	OCBO7
Demonstrate concern about the image of the organization.	OCBO8

Figure 4.4. CFA Path Diagram for OCB.

Goodness of Fit Indices. The CFA for the OCB model yielded the following goodness of fit indices: $\chi^2 = 1154.463$ ($P = 0.0000$); $df = 103$; $RMSEA = 0.123$; $SRMR = 0.0642$; $NFI = 0.909$; $CFI = 0.917$; $GFI = 0.816$. Once again, determination of goodness of fit was based on the accumulation of evidence across all the statistics. Both the NFI and CFI are above .90, and SRMR is less than .08.

Reliability analysis. The overall reliability for the OCB1 scale in this study is .835 (good). In Table 4.45, one can see that in there are no corrected item-total correlations less than .3. In the *Scale Mean and Scale Variance if Item Deleted* columns, the deletion of OCBI8 would result in a decrease in scale variance. Based on *Cronbach's α if Item Deleted* column, if OCBI8 are deleted,

the Cronbach's α would increase to .837, suggesting that removal of this item would improve reliability. However, the item was not removed as improvement would be slight.

Table 4.45. Item-Total Statistics for OCBI

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
OCBI1	28.17	16.494	.581	.814
OCBI2	28.10	16.284	.671	.804
OCBI3	28.54	16.608	.493	.826
OCBI4	27.81	17.168	.543	.819
OCBI5	27.82	17.403	.572	.817
OCBI6	28.31	15.551	.692	.799
OCBI7	28.03	16.960	.587	.814
OCBI8	28.85	15.273	.487	.837

The overall reliability for the OCBO scale in this study is .869 (good). In Table 4.46, one can see that in the *Scale Mean and Scale Variance if Item Deleted* columns, the deletion of any one item would not greatly affect the value. There are no corrected item-total correlations less than .3. Finally, in the *Cronbach's Alpha if Item Deleted* column, there are no values of α greater than the overall α (.869).

Table 5.46. Item-Total Statistics for OCBO

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
OCBO1	25.92	23.838	.530	.863
OCBO2	24.99	25.052	.553	.860
OCBO3	25.65	22.844	.667	.847
OCBO4	24.95	22.724	.695	.844
OCBO5	25.25	24.560	.512	.864
OCBO6	25.10	22.784	.694	.844
OCBO7	25.13	23.439	.603	.855
OCBO8	25.19	22.309	.725	.841

Decision: Based on accumulation of evidence of three of the five goodness of fit indices and reliability findings, and taking a less conservative approach to cut off values, it is appropriate to include this 2 factor construct of OCB in the SEM. Although model modification was not performed in this study, a more conservative approach including review of standardized residuals is discussed in Appendix EE.

A summary of all Goodness of fit Indices and Internal Consistency Reliability results are presented in Table 4.47.

Table 4.47. Summary of CFA Goodness of Fit Indices and Internal Consistency Reliability

Construct	χ^2	df	NFI	CFI	GFI	RMSEA	SRMR	Cronbach's α
Justice (4 factor)	1179.99*	164	0.981	0.983	0.853	0.0957	0.0303	-
Distributive Justice								.947
Procedural Justice								.939
Interpersonal Justice								.968
Informational Justice								.947
Perceived Organizational Support	813.22*	20	0.921	0.922	0.710	0.242	0.0757	.925
Affective Commitment (8 factor)	1670.96*	224	0.935	0.943	0.831	0.0978	0.0618	-
AC to organization								.863
AC to supervisor								.933
AC to co-workers								.911
AC to patients								.625
AC to profession								.763
AC to work								.727
AC to task								.810
AC to career								.678
OCB (2 factor)	1154.46*	103	0.909	0.917	0.816	0.123	0.0642	-
OCBI								.835
OCBO								.869

* indicates significant at 0.000 level

Structural Equation Model

The SEM correlation matrix is presented in Appendix FF. Measurement equations are presented in Appendix GG. Structural equations are presented in Appendix HH. Most of the relationships are significant at the 0.000 level, however all are significant at the 0.05 level. A simplified version

of the full SEM is presented in *Figure 4.5*. Only significant paths are included. All non-significant paths are removed.

Figure 4.5. SEM

Goodness of Fit Indices

Figure 4.5 depicts the model with the best goodness of fit statistics ($\chi^2 = 10555.152$ ($P = 0.0000$); $df = 2173$; RMSEA = 0.0755; SRMR = 0.0596; NFI = 0.946; CFI = 0.956; GFI = 0.700). However, if one is to only look at the accumulation of evidence across all five of the goodness of fit statistics, one might assume that based on RMSEA of .08, SRMR of .06, NFI of .95 and CFI of .96 that this model offered a good fit. Upon further examination of LISREL output, however, there is a warning indicating severe multicollinearity. Upon review of standardized residuals, the smallest standardized residual is -9.667 and the largest standardized residual is 16.905, suggesting misfit in the model. Large residuals indicate misspecification in the model, affecting overall model fit. SRs greater than the absolute value of 3.29 are flags for possible concern, as in an average sample, SRs this high are unlikely to occur by chance.

As discussed previously in the Methods Chapter, I opted to complete path analysis using average scores to mitigate the issue of multicollinearity.

Path Analysis

The correlation matrix for the path analysis can be found in Appendix II. A simplified version of the final path analysis, including path coefficients, is presented in *Figure 4.6*. The structural equations are presented in Appendix JJ. Only significant paths are included. All non-significant paths are removed.

Figure 4.6. Final Path Diagram

The path analysis focused on the relationships between justice, POS, affective commitment, and OCBs. The general pattern and flow in the path analysis is the same as the hypothesized model in Chapter 2, represented by the red indicator bar below the path analysis in *Figure 4.6*. The flow, from left to right, is from perceptions of organizational justice to POS, to affective commitment,

ending with OCBs. Having all of the unique constructs for justice (4), POS (1), affective commitment (8), and OCB (2) in the model, enables the evaluation of specific relationships between each of the individual constructs. All path coefficients are significant; most at the 0.001 level, however all at the 0.01 level.

The path analysis was generated using LISREL. Once again, determination of goodness of fit was based on the accumulation of evidence across all the statistics. The model yielded the following goodness of fit indices: $\chi^2 = 115.265$ ($P = 0.0002$); $df = 67$; RMSEA = 0.0326; SRMR = 0.0233; NFI = 0.987; CFI = 0.995; GFI = 0.978. Upon review of the standardized residual summary statistics, no standardized residual values exceed the absolute value of 3.29. With the exception of χ^2 , the indices indicate that the model is an excellent fit to the data.

Mediation

In the final path analysis, 18 potential mediating relationships are identified. These are depicted in Table 4.48.

Table 4.48. Potential Mediating Effects

X (Predictor)	Mediator	Y (Outcome)
JP	JInper	POS
JInfo	ACsup	ACorg
JInfo	JInper	ACsup
ACwrk	ACsup	ACorg
ACorg	ACpt	ACprof
ACorg	ACpt	ACtsk
JInper	POS	ACsup
ACwrk	ACcar	ACprof
ACorg	ACpt	ACco
ACwrk	ACpt	ACprof
ACorg	ACprof	ACtsk
ACorg	ACprof	ACco
ACorg	ACco	ACtsk
ACpt	ACco	ACtsk
ACprof	ACco	ACtsk
ACpt	OCBI	OCBO
ACorg	ACpt	OCBO
Accar	OCBI	OCBO

Each of the mediating or indirect effects were tested by conducting a one-step regression analysis in SPSS using Hayes' PROCESS download tool for SPSS (<http://www.afhayes.com>). The results are presented in Table 4.49. All effects are significant except for the effect of JInfo on ACorg through ACsup, the second row highlighted yellow in Table 4.49. The effect size for each of the mediating effects is located in the last column of Table 4.49. Recall from the methods section that: a small effect ($k^2 = .01$) suggests that the effect explains 1% of the total variance; a medium effects size ($k^2 = .09$) suggests the effect accounts for 9 % of the total variance; and a large effect size ($k^2 = .25$) suggests that the effect accounts for 25% of the variance (Field, 2014; Preacher & Kelley, 2011).

There is one large significant indirect effect identified. This is a significant indirect effect of informational justice on affective commitment to one's supervisor through interpersonal justice ($k^2 = .2846$).

There are several medium size indirect effects identified. There is a significant indirect effect of procedural justice on POS through interpersonal justice ($k^2 = .0958$). There is a significant indirect effect of affective commitment to work on affective commitment to the organization through affective commitment to one's supervisor ($k^2 = .088$). There is a significant indirect effect of affective commitment to one's organization on affective commitment to one's profession through affective commitment to one's patients ($k^2 = .134$). There is a significant indirect effect of affective commitment to one's organization on affective commitment to tasks through affective commitment to one's patients ($k^2 = .106$). There is a significant indirect effect of interpersonal justice on affective commitment to one's supervisor through POS ($k^2 = .201$). There is a significant indirect effect of affective commitment to work on affective commitment to one's profession through affective commitment to one's patients ($k^2 = .122$). There is a significant indirect effect of affective commitment to one's organization on affective commitment to tasks through affective commitment to one's profession ($k^2 = .193$). There is a significant indirect effect of affective commitment to one's organization on affective commitment to co-workers through affective commitment to one's profession ($k^2 = .104$). There is a significant indirect effect of affective commitment to one's organization on affective commitment to tasks through affective

commitment to one's co-workers ($k^2 = .108$). There is a significant indirect effect of affective commitment to patients on affective commitment to tasks through affective commitment to co-workers ($k^2 = .100$). There is a significant indirect effect of affective commitment to one's profession on affective commitment to tasks through affective commitment to one's co-workers ($k^2 = .104$). Finally, there is a significant indirect effect of affective commitment to patients on OCBs directed towards the organization through OCBs directed towards individuals ($k^2 = .090$).

There are several small size indirect effects identified. There is a negative significant indirect effect of affective commitment to work on affective commitment to one's profession through affective commitment to one's career ($k^2 = .039$). There is a significant indirect effect of affective commitment to one's organization on affective commitment to one's co-workers through affective commitment one's patients ($k^2 = .066$). There is a significant indirect effect of affective commitment to one's organization on OCBs directed toward the organization through affective commitment to patients ($k^2 = .068$). There is a significant indirect effect of affective commitment to one's career on OCBs directed towards their organization through OCBs directed towards individuals ($k^2 = .063$).

Table 4.49. Mediating Effects

X (Predictor)	Path Coefficient X -> M (significance)	Mediator	Path Coefficient M -> Y (significance)	Y (Outcome)	Path Coefficient X -> Y (significance)	Effect Size
JP	.7601 (0.0000)	JInper	0.2185 (0.0002)	POS	.7240 (0.0000)	0.0958
JInfo	.8197 (0.0000)	ACsup	.4079 (0.0000)	ACorg	.0281 (.5293)	-
JInfo	.7778 (0.0000)	JInper	.4343 (0.0000)	ACsup	.4820 (0.0000)	0.2846
ACwrk	.2493 (0.0000)	ACsup	.3968 (0.0000)	ACorg	.2542 (0.0000)	0.0878
ACorg	.1952 (0.0000)	ACpt	.5289 (0.0000)	ACprof	.2882 (0.0000)	0.1335
ACorg	.1952 (0.0000)	ACpt	.4256 (0.0000)	ACtsk	.3638 (0.0000)	0.1057
JInper	.6534 (0.0000)	POS	.2596 (0.0000)	ACsup	.6418 (0.0000)	0.2012
ACwrk	.3522 (0.0000)	ACcar	-0.0925 (0.0088)	ACprof	.5004 (0.0000)	0.0388
ACorg	.1952 (0.0000)	ACpt	.3048 (0.0000)	ACco	.2859 (0.0000)	0.0658
ACwrk	.1994 (0.0000)	ACpt	.5531 (0.0000)	ACprof	.3575 (0.0000)	0.1217
ACorg	.3914 (0.0000)	ACprof	.4112 (0.0000)	ACtsk	.2859 (0.0000)	0.1927
ACorg	.3914 (0.0000)	ACprof	.2536 (0.0000)	ACco	.2462 (0.0000)	0.1036
ACorg	.3454 (0.0000)	ACco	.2453 (0.0000)	ACtsk	.3621 (0.0000)	0.1076
ACpt	.5121 (0.0000)	ACco	.3080 (0.0000)	ACtsk	.5315 (0.0000)	0.1002
ACprof	.3981 (0.0000)	ACco	.2416 (0.0000)	ACtsk	.4828 (0.0000)	0.1035
ACpt	.2869 (0.0000)	OCBI	.3978 (0.0000)	OCBO	.3412 (0.0000)	0.0901
ACorg	.1952 (0.0000)	ACpt	.2004 (0.0000)	OCBO	.3518 (0.0000)	0.0677
ACcar	.1111 (0.0000)	OCBI	.4496 (0.0000)	OCBO	.1252 (0.0000)	0.0634

Note: no confidence intervals span zero; green highlight indicates a large effect size; blue highlight indicates medium effect size; no highlight indicates a small effect size; and yellow highlight indicates no mediating effect.

Summary of Results

The results of the statistical analysis are presented in this chapter. Descriptive statistics of the study variables are completed. There was no missing data. The final sample consisted of 676 cases. CFA was conducted to validate the measurement models. Although the results of the CFA indicate that the final measurement models provide adequate-good fit to the data, standardized residuals remained high and several of the measures are highly correlated with one another (>.08). Error covariances are not included to improve model fit. Model fit was assessed using χ^2 , RMSEA and SRMR, NFI, CFI, and GFI indices.

The SEM containing all of the constructs indicate multicollinearity. In an attempt to determine if I could view the relationships without the issue of multicollinearity, path analysis was performed as an alternate using average scores for each of the constructs to see if I could get a better look at the relationship. Fortunately, since path analysis does not include the correlations between each of the observed measures, this method did avoid the issue of multicollinearity in this circumstance. The goodness of fit indices indicate that the model is an excellent fit to the data. Seventeen significant mediating effects are identified in the model.

Chapter 5

Discussion & Conclusions

Discussion

The purpose of this study is to better understand work attitudes and their relationships to one another, and to extra-role behaviours amongst nurses working in hospitals, the community, and long-term care settings in Ontario. External forces of work motivation present in the work environment include the presence, or lack, of organizational justice and organizational support. Internal forces of motivation include work attitudes, the perceptions of these two external forces in addition to one's emotional attachment to different targets. The behavioural outcome used in this study is a form of extra-role behaviour (ERB), organizational citizenship behaviours (OCBs), behaviours that attempt to benefit the organization, extending beyond existing role expectations (Organ et al., 2006). OCBs are of critical importance to health care organizations because they can lead to improved performance, care, patient safety, organizational productivity; positive relationships amongst employees, efficient use of scarce resources, and employee involvement in the organizational activities (Chu et al., 2005). While dyadic relationships amongst some of these concepts are established in disparate empirical studies, interrelationships amongst the entire set of concepts have not been explored. My study helps to identify which work attitudes impact extra-role work-related behaviours, contributing to the general overall goals of health service organizations.

A scoping review, together with a more in-depth review of the literature, aided in the development and testing of a comprehensive conceptual framework. Findings from this study help address four significant gaps identified in the work motivation and organizational behaviour literature: (1) it examines how affective commitment relates to behavioural efforts, specifically organizational citizenship behaviours; (2) it utilizes reliable and validated instruments; (3) it comprises a fairly large sample; and (4) by using a cross-sector design, it is generalizable to nurses actively working in hospitals, the community, and long-term care settings in Ontario Canada.

The final path analysis (reiterated from the Results chapter) illustrates that the general pattern and flow is the same as the hypothesized model in Chapter 2, represented by the red indicator bar below the path analysis in *Figure 5.1*. The flow, from left to right, is from perceptions of organizational justice to POS, to affective commitment, ending with OCBs. What previously was presented in the literature as simple dyadic relationships, is now revealed as a complex web of interrelationships. This analysis also exposes the many significant mediating effects at play.

Figure 5.1. Final Path Diagram.

Theoretical Implications

The model that I test here is novel, in that it simultaneously includes all of the aforementioned constructs (a four factor justice model, a one factor POS model, an eight factor affective commitment model, and a two factor OCB model). This research reveals the complex

relationships among these constructs, and highlights some potential limitations of prior research that focused on dyadic associations or global constructs.

Relationships amongst OCBs. My results demonstrate that in the health care sector, in which I conducted my research, OCBI are directly associated with OCBOs, see Figure 5.2. The direction of association is contrary to work by Morin et al. (2011) which found OCBOs directly related to OCBI. This is an important finding as it suggests that focusing resources on enhancing behaviours that benefit individuals positively impacts behaviours that benefit the organization. For example, improving relationships between co-workers and supervisors in a work setting like health care where there is extensive reliance on oral communication may enhance the quality of employee-to-employee communication and knowledge exchange, and improve the care provided. This is somewhat counter to some work that has suggested that OCBI detracts from organizational performance, as there is an over-focus on individual needs (Podsakoff & MacKenzie, 1994); however health care may present an exception, since there is such high reliance on communication channels and relationships – where the contradicting studies were conducted in competitive sales driven settings (i.e. insurance agencies) where employees compete with one another to achieve set targets.

Figure 5.2. OCBI Direct Effect on OCBO.

Affective Commitment Direct Association with OCBs. As identified in my literature review, an abundance of research has focused on a global perspective of affective commitment to the organization, suggesting that ‘organizational commitment’ is the sum of one’s commitment to all possible ‘constituencies’ of an organization and that this motivates work-related behaviours (Hunt

& Morgan, 1994; Morin et al., 2011). Therefore, organizational commitment acts as a key internal mediating force through which commitment to local constituencies relate to work outcomes. In essence, this is a similar rationale to the ‘cohesion approach to commitment’ which suggests that within-group interpersonal attachments create summative effects that result in organizational attachment (Morin et al., 2011; Wech, Mossholder, Steel, & Bennett, 1998; Yoon, Baker, & Ko, 1994). This global approach suggests that commitment to members of the organization, like supervisors and co-workers, will relate to organizational commitment and OCBOs which will lead to OCBs directed towards parallel targets (Morin et al., 2011).

In research on attitude-behaviour relationships, an alternative to the global perspective approach is the ‘*target similarity approach*’ which proposes that attitudes more strongly relate to behaviours when they refer to similar targets, contexts, timelines, or actions (Lavelle, 2007; Lavelle et al., 2009). If one is affectively committed to one’s co-workers, then these internal forces help drive her/him to engage in OCBs that benefit co-workers (OCBIs). No mediation by an overall ‘global’ organizational commitment or OCBO is expected to occur. This is in line with Lawler’s (1992) choice process theory, whereby individuals develop stronger attitudes towards proximal entities (supervisors, groups) than towards distal entities (the organization) because proximal entities provide them with a greater sense of control over their work (Lawler, 1992; Morin et al., 2011; Mueller & Lawler, 1999). In other words, individuals only engage in behaviours that benefit those constituencies to which they feel a commitment.

My findings did not support the global perspective for organizational commitment. There are no significant mediating effects of organizational commitment in my study. My findings align with the target similarity approach, however affective commitment to one’s supervisor did not directly affect any OCBs. This is important as it suggests that affective commitment to one’s supervisor is not a force that impacts OCBs directed towards individuals or the organization. It would be useful for future research to investigate factors that are influenced by affective commitment to one’s supervisor. My findings, see Figure 5.3, identify three affective commitment targets (patient, co-worker, career) as motivators of OCBIs, and three affective commitment targets (organization, patient, and career) as motivators of OCBOs. My findings suggest that utilizing a global

perspective for organizational commitment may cloud results and prevent a clear understanding of what is really occurring. For example, if a global perspective of organizational commitment were used in my study, then it would be reasonable to assume that I would have found an association between organizational commitment and OCBs. However, by using a multi-factor structure approach, it becomes evident that not all targets of affective commitment (e.g., work, supervisor, tasks, and profession) are associated with OCBs. My results are contrary to Morin et al.'s (2011) research which found that commitment to co-workers, customers and supervisors displayed positive relationships with OCBs directed at parallel foci (OCBIs). Morin et al. (2011) found that commitment to the organization, partially and negatively mediated the relationships to co-workers and customers to parallel OCB dimensions (OCBIs). Morin et al. (2011) also found no commitment targets to be motivators of OCBOs. Thus, further research investigating the effect of OCBIs on OCBOs is warranted.

Figure 5.3. Affective Commitment and OCB Relationships.

Relationships amongst Affective Commitment Targets. Morin et al. (2011) found that commitment to co-workers and commitment to customers are forces positively related to commitment to the organization. Although these findings were not replicated in my study, my findings identified several unique affective commitment relationships unprecedented in the literature, see Figure 5.4. My findings identify significant positive direct effects of affective commitment to one's organization on affective commitment to one's patients. My results also suggest significant positive direct effects of affective commitment to work, one's organization, and patients, and a significant negative direct effect of affective commitment to one's career on affective commitment to one's profession. The negative effect may be indicative of a potential conflict between one's career and one's profession, warranting future research. My study found significant positive direct effects of affective commitment to one's profession, organization, co-workers, and patients on affective commitment to tasks. There were also direct effects of affective commitment to work on affective commitment to one's supervisor, patient and career. The above findings may suggest that affective commitment to one's career may be a somewhat 'self-centered' target as it appears to suggest perhaps career may be considered more important than one's profession and influenced by one's affective commitment to work (e.g., they consider work satisfying, a priority, and all their personal objectives are focused on work). Additional findings include the direct effects of affective commitment to one's organization, patient and profession on affective commitment to one's co-workers and the direct effect of affective commitment to one's supervisor and work on affective commitment to one's organization. These results are depicted in Figure 5.4.

Future research may benefit from the inclusion of multi-factor structure models instead of global models or partial models, and further investigation into the inter-relationships between affective commitment targets in different contexts.

Figure 5.4. Relationships amongst Affective Commitment Targets

Direct Effect of Justice Constructs on POS. My findings account for a relatively high percentage of the variance of POS, predominantly with significant positive direct effects on procedural and interpersonal justice, see Figure 5. 5. These findings corroborate prior work undertaken by Loi (2006) and Moorman (1998). In comparison to Loi et al. (2006) who suggest that distributive justice contributes to the development of POS in solicitors working in Hong Kong law firms, my study does not display any evidence of this. One potential reason for the difference may be that Loi et al. (2006) looked at procedural and distributive justices whereas I used a four-factor structure approach. My findings may afford alternative ways of looking at relationships when compared to partial models. Including more factors may allow researchers to identify and confirm the presence of unique direct relationships and provide assurance that one variable is not being used synonymously for another, were it not to be included in the model. Moreover, my findings suggest that further research may be warranted to determine if dyadic approaches require further inquiry.

Figure 5.5. Direct Effect of Justice Constructs on POS.

Relationships between Justice, POS, and Affective Commitment Targets. My findings identify direct effects of POS on affective commitment to one's supervisor and co-workers, see Figure 5.6. My results indicate a direct association between interpersonal justice and affective commitment to one's supervisor, as well as direct associations between informational justice and affective commitment to one's supervisor, and between informational justice and affective commitment to one's organization. These findings are depicted in Figure 5.6 and Figure 5.7.

Figure 5.6. Direct Effect of POS on Affective Commitment Targets.

Figure 5.7. Direct Effect of Justice on Affective Commitment Targets

Thus one can see, as depicted in Figure 5.8, affective commitment to one's supervisor is associated with direct effects of interpersonal justice, POS, informational justice, and affective commitment to work. Also depicted in Figure 5.8 is the association of affective commitment to one's coworkers with affective commitment to one's organization, their profession, POS, and affective commitment to their patients. Contrary to findings from Rhoades et al. (2001), there is no evidence in my study that POS directly related and contributed to affective organizational commitment. Potential differences could be due to smaller samples and different settings (Eastern US university alumni) in Rhoades et al. (2001). Once again, my findings are important as they suggest that utilizing a global perspective for organizational commitment may potentially conceal results and prevent a clear understanding of relationships which are truly occurring. Further investigation may also be required to determine if the shorter 8-item version of POS scale as used in this study is, in fact, as valid and reliable as the 36 item scale (Rhoades & Eisenberger, 2002) when used in combination with multi-factor structure models.

Several of my findings are inconsistent with existing literature, which suggests that all three dimensions of organizational justice (distributive, procedural, and interactional which is comprised of informational and interpersonal justices) positively relate to affective organizational commitment (McNabb, 2009; Beugre 1997) and that procedural justice strongly predicts organizational commitment (Greenberg 2009). Instead, I observe the direct effects of informational

justice, affective commitment to work and one's supervisor on affective commitment to one's organization. Informational justice and interpersonal justice are each associated with affective commitment to one's supervisor. Finally, both distributive and procedural justice are not related to any affective commitment targets. These results are also depicted in Figure 5.8. My findings once again demonstrate the potential ramifications when utilizing a global perspective approach to organizational commitment; that is, the potential to miss alternate and unique relationships – for example my finding that only informational justice appears to be directly associated with affective commitment to one's organization. Future research investigating the precise nature of this association, and best strategies of enhancing informational justice, and examining the impact these strategies have on affective commitment to one's organization, and turnover intention, would be informative.

Figure 5.8. Relationships between Justice, POS & Affective Commitment Targets

Lack of Direct Association between Justice and OCBs. Contrary to prior research, organizational justice does not appear to be directly associated with OCBs. My results show no evidence of the direct effects of perceived organizational justice on OCBs found by Suliman (2013), Greenberg (2009), and Organ (1988). This could potentially be due to my inclusion of POS and the eight factor structure of affective commitment, which are not included in the aforementioned studies. The inclusion of POS and a multi-factor structure model of affective commitment affords a more in-depth analysis of additional factors through which justice may indirectly act (e.g., informational justice has a direct effect on affective commitment to one's organization, which has a direct effect on OCBs). Henceforth, research might usefully include additional concepts such as POS measures and different targets of affective commitment when examining relationships between perceived organizational justice and OCBs. Additional examination is warranted to determine if these findings are found in different contexts and with different populations.

Relationships amongst Justice Constructs. My results do not suggest any direct relationships between procedural justice and informational justice, or between distributive justice and interpersonal justice, see Figure 5.9. This contradicts previous research by Colquitt (2001); however, he used smaller sample sizes and examined different populations (university undergraduate students and employees from an automobile manufacturing plant) and different outcome measures (Colquitt, 2001). The lack of association in my findings between procedural justice and informational justice, and between distributive justice and interpersonal justice, may be particularly characteristic of a health care environment. One can have fair procedures and poor distribution of information, and similarly, a supervisor may display distributive justice, but may interact poorly with staff. My results are in line with work by Murphy, Wayne, Liden, & Erdogan (2003) who identify that distributive justice is not significantly related to leader-member exchange (Murphy, Wayne, Liden, & Erdogan, 2003). My findings also suggest that future research determining the effect of procedurally just climates on distributive justice is warranted.

My results account for a large proportion of the variance of distributive justice. Almost all of this was due to the direct effects of procedural and informational justice, see Figure 5.9. The high

association between procedural justice and distributive justice is important as it suggests that when employees perceive that there are fair procedures in place, they also are likely to perceive high levels of distributive justice. Tripp, Bies, & Aquino (2007) recommend that if the perception is one of high procedural justice, then the procedures to establish distributive justice will be trusted (Tripp, Bies, & Aquino, 2007).

Figure 5.9. Relationships amongst Organizational Justice Constructs

Mediation. The evaluation of mediating effects as noted in the Results Chapter, suggests that perhaps this area is under explored and worthy of further investigation. Although there is one large mediating effect of informational justice on affective commitment to one's supervisor through interpersonal justice, the majority of mediating effects are medium sized. My findings imply that the mediating effects are far more complex than previously exposed in the literature. By utilizing full multi-factor structure models I am able to identify novel mediating effects.

A number of mediation effects, identified in the literature, are not found in my study. I found no evidence for POS' mediation between: procedural justice and affective commitment to the organization (Rhoades, 2001), nor between procedural justice and OCBs (Moorman, 1998). Further, I did not observe a mediating effect of organizational commitment on the positive relationship between procedural fairness and OCB, most likely emerging when constructs are in reference to the same target (Lavelle et al., (2009). Finally, I did not observe POS' mediation

between: procedural justice and organizational commitment, nor between distributive justice and organizational commitment (Loi, 2006). The major differences between my work and the work of Loi (2006) and Lavelle et al. (2009) are related to contexts, sample sizes, and the use of partial versus complete factor structure models. My study included multi-factor structure models of organizational justice (all four constructs), affective commitment (all eight targets), and OCBs (OCBI and OCBO). As discussed earlier, these findings call attention to the potential for hidden results when utilizing global perspectives for organizational commitment, and suggests additional examination is warranted to determine if inclusion of multi-factor structure models with distinct factors provide a clearer understanding of perhaps indirect relationships or mediating factors compared to the adoption of partial models or global perspective approaches. Simply stated, factors that are not included in the model, are difficult to account for. Omission of factors prevents identification of both indirect and mediation effects.

Practical Implications for Nurse Managers and Leadership

Results provide more fulsome insight into what leaders might leverage to meet organizational goals. Exposing the intricate relationships between work attitudes and extra-role workplace behaviours can help leadership determine where to focus resources to develop strategies to positively influence work-related behaviours that aid in attaining organizational goals. For example, in this study, findings suggest that informational justice is a force directly associated with affective commitment to the organization, which is directly related to OCBOs. Thus focusing resources on training initiatives to help supervisors communicate more effectively may improve the manner in which outcomes and procedures are communicated, thereby impacting affective commitment to the organization, and as a result affect behaviours that benefit the organization.

The lack of evidence in my study relating perceived organizational justice with OCBs and affective commitment to one's supervisor with OCBs directed towards individuals or the organization, suggests that leadership strategies focusing on enhancing employee affective commitment to their supervisors, may not be effective in enhancing behaviours between coworkers or directed towards the organization. Results suggesting OCBs directed towards individuals (OCBIs) are positively associated with OCBs directed towards the organization (OCBOs), and not the reverse, suggest

that if the end goal of senior leadership is to have employees that go above and beyond their job descriptions for their organization, then it may be of benefit to focus attention on team-building type strategies that enhance OCBI. In addition, my findings identify potential areas for managers to focus attention depending on their desired results. If the end goal is to impact OCBI, then much may be gained by determining ways to enhance employee affective commitment to patients, co-workers or their career. If the end goal is to increase OCBO, then time and resources may be better placed on developing affective employee affective commitment to the organization, patient, and their career.

Study results suggest that there may be more value in adopting a target similarity approach, whereby attitudes are forces that more strongly relate to behaviours when they refer to similar targets, contexts, timelines, or actions, as compared to a global perspective of organizational commitment. Depending on the desired behavioural outcome, understanding these relationships could help leaders determine which targets to focus on, and strategies to use, when attempting to modify employee behaviour. The findings suggest that leadership actions play a vital role in affective commitment to one's supervisor, the organization, and employee perceptions of organizational support.

The finding that affective commitment to one's organization and work is associated with affective commitment to one's patients indicates that there may be benefit to identification and selection of employees affectively committed to their organization and work, if the desire is to encourage staff commitment to their patients. Results also reveal that strategies focusing on affective commitment to work, the organization, and patients, may assist with enhancing commitment to the profession. The finding that affective commitment to career is negatively associated with affective commitment to one's profession, suggests that nurses focused on moving up in their career, perhaps to more administrative or management positions, may be less committed to their actual profession (e.g., nursing), as their attention shifts to where they want to be, as compared to the profession for which they are currently in.

It is not uncommon for employees in all professions to perform tasks that they may not particularly enjoy doing. My findings suggest that there may be value in nurse managers

highlighting and reinforcing the value of these tasks and their benefit in reference to their profession, organization, co-workers, or patients. For example, if the task is ‘additional’ documentation for a research trial, perhaps it will make a difference and aid in task completion by letting staff know that this research has the potential to advance their profession, make their organization a centre of excellence, decrease turnover of co-workers, or even improve patient survival rates.

My findings also suggest that both distributive and procedural justice are forces not directly related to any affective commitment targets, suggesting that although procedures and the distribution of outcomes may not always be fair within an organization, what matters to employees is that they be treated with dignity, in a polite and respectful manner (interpersonal justice). Employees want truthful, thorough explanations of procedures with pertinent details in a timely manner, tailored to their specific needs (informational justice). Hence, leadership strategies that focus on distributive and procedural justice to enhance affective commitment of employees may prove not to be effective in health care environments. Informational justice, however, is associated with affective commitment to one’s organization, hence these findings suggest that it may be well advised for nurse managers and leadership to be conscious of the manner in which outcomes and procedures are communicated. Both informational justice and interpersonal justice are associated with affective commitment to one’s supervisor, which has a direct effect on affective commitment to one’s organization. This suggests that the nurse managers and leadership may want to evaluate the way they communicate and interact with their employees.

This research offers insights into some of the organizational characteristics that affect work conditions of nurses. This study identifies the nuanced relationships in health care between work attitudes and behaviours. Results of strong association between procedural justice and distributive justice are important to nurse managers. Having fair procedures in place is strongly associated with employee perceptions of distributive justice, which may be useful during times of conflict or dispute to ensure maintenance of a health work environment. Victims of offense may be more likely to seek distributive justice through formal channels rather than seeking it themselves through revenge.

Implications for the Definition of Work Motivation

Work motivation has been inconsistently operationalized with over 140 definitions (Kleinginna Jr & Kleinginna, 1981). Pinder (2008) provides one of the most comprehensive definitions to date of work motivation, defining it as a set of energetic forces that originate within and beyond an individual's being, to initiate work-related behaviour, and to determine its form, direction, intensity, and duration. My work helps to clarify the, heretofore, inconsistently defined concept of work motivation, identifying a successive element such that external forces precede and/or impact internal forces. For example, perceived actions of one's supervisor (e.g., fair distribution of rewards, consistent following of procedures, ethical behaviour, treating others with dignity and respect) and perceived acts of support from the organization (e.g., appreciates efforts, recognizes and takes pride in accomplishments) are consciously and/or subconsciously interpreted to help inform decision-making. In addition to the influence of external forces, the employee also has internal instincts and personal emotional attachment to different targets, based upon what is held to be important to them: their goals, preferences and past experiences. The strength of the attachment to particular targets may determine the intensity of the driving force. Although my research aids in helping to determine which forces map to specific behaviours, what remains unknown about work motivation relates to behavioural patterns such as choice, spontaneous behaviour, and persistence.

Summary

It is worthwhile for leadership involved in making policy decisions, to understand the relationships amongst work attitudes and behaviour outcomes identified by this research. It is important that leadership comprehend that each decision they make (e.g., whether it be regarding new procedures, distribution of outcomes/resources, reporting structures, mandatory tasks, or patient interaction), has a potential impact elsewhere. Although my work is conducted from an organizational behaviour perspective, my findings are consistent with literature in nursing leadership literature, and addresses significant gaps identified within the literature. My work investigates nursing leadership practices and interactions with staff on behaviour outcomes. This is consistent with

work by Wong, Cummings, & Ducharme (2013), who conducted a systematic review of studies that examine the relationship between nursing leadership practices and patient outcomes, and found a positive relationship between relational leadership and a variety of patient outcomes, and that efforts by organizations and individuals to develop transformational and relational leadership reinforces organizational strategies to improve patient outcomes. Wong et al. (2013) suggest future examination of the mechanisms of influence on outcomes (Wong, Cummings, & Ducharme, 2013).

The purpose of this study was to better understand work attitudes and their relationships to one another, and to extra-role behaviours amongst nurses working in hospitals, the community, and long-term care settings in Ontario. My research helps to identify the relationships between leadership practices, as they relate to perceived organizational justice and perceived organizational support, and employee behaviours. My results provide insights into what leaders may leverage to optimize productivity, performance, safety, quality care, employee retention, a healthy work environment, and OCBs as they relate to nurses and nursing practice. In the nursing literature, a systematic review by Brady, Germain, & Cummings (2010) found that nurse performance may be improved by addressing relationships amongst nurses, their colleagues and leaders, and resource accessibility. Brady et al. (2010) suggest that nurse managers and leaders may enhance their nurses' performance by understanding and addressing the factors that affect their ability and motivation to perform (Brady Germain & Cummings, 2010). A second systematic review by Cummings et al. (2010) document evidence of various forms of leadership and their differential effects on the nursing workforce and work environments. Efforts by organizations and individuals to encourage and develop leadership practices are needed to enhance nurse satisfaction, recruitment, retention, and healthy work environments, particularly in current and worsening nursing shortage (Cummings et al., 2010). This corroborates earlier work by Pearson et al. (2007), that found a combination of leadership styles and characteristics contribute to the development and sustainability of a healthy work environment (Pearson et al., 2007).

Finally, my work emphasizes the need to develop healthy work environments for health care providers, with the end result, optimization of patient care. Similarly, Cummings et al. (2008)

conducted a systematic review of factors contributing to nursing leadership, identified that weak study designs provide limited evidence for specific factors that could increase the effectiveness of current nursing leadership or guide the identification of future nurse leaders. Cummings et al. (2010) suggest that theory and research on interventions to develop and promote viable nursing leadership for the future are needed to achieve the goal of developing healthy work environments for health care providers and optimizing care for patients (Cummings et al., 2008).

Methodological Observations

Addressing Methodological Gaps in the Literature. This study contributed to addressing three significant methodological gaps identified in the work motivation literature. First, as described in the methodology, Chapter 3, this study utilizes reliable and validated instruments. Second, as compared to the studies in my comprehensive literature review, this study utilizes a large sample. Finally, by using a cross-sector design and further verification using z-tests, even though there was only a response rate of 18%, results suggest that findings may be generalizable to nurses actively working in health care across Ontario, Canada.

Model Specification. My research raises concern that the use of partial models or global perspectives has the potential to hide relationships and may lead to inaccurate or faulty conclusions. Omitting concepts or combining them together globally, may make it difficult to determine clearly unique contributions of specific factors and whether or not said factors are being misinterpreted for others. Likewise, since my study findings suggest that there are no direct effects of organizational justice on OCBs, it is worth considering the effect of POS and the eight affective commitment targets. Henceforth, researchers may want to include POS measures and different targets of affective commitment when examining relationships between organizational justice and OCBs.

Multicollinearity. Niemelä-Nyrhinen & Leskinen (2014) point out that there is a misconception that SEM is robust enough to deal with multicollinearity (Niemelä-Nyrhinen & Leskinen, 2014). This however is not the case. Even with SEM, multicollinearity can distort the interpretation of multiple regression results. As Meyers et al. (2013) explain, if two or more

variables are highly correlated, they are largely confounded with one another, essentially measuring the same characteristic, making it impossible to determine which of the variables is more relevant (Meyers et al, 2013). In addition, the values of the standardized regression coefficients of the highly correlated independent variables are distorted, exceeding the expected range of ± 1 . Another problem with multicollinearity is standard errors of the regression weights of those multicollinear predictors can be inflated, increasing confidence intervals (sometimes including zero). When this occurs, one cannot determine if an increase in the predictor is associated with an increase or decrease in the criterion variable.

Not all of the instruments used in this study had been used with this population of nurses. In the CFA, the correlation matrices identified that there are many variables within constructs that are highly correlated ($r > .8$). As Field (2014) notes, the effect of two variables that correlate with $r = .9$ for example, might be less than the effect of say three variables that all correlate at $r = .6$. Hence simply eliminating highly correlating variables might not address the root cause of the multicollinearity. This was found in my study. Removal of items from the structural model, did not address high standardized residuals. The only way to address the numerous high standardized residuals, would be to correlate a very large number of errors, which then raises the question that if such a large number of modifications is required, are some of the measurement models, in fact, a good fit. Although this needs further investigation, it does not nullify my findings as multicollinearity proved not to be an issue in the path analysis.

As discussed in the Results Chapters, the second method for dealing with multicollinearity, the model comparison approach whereby paths are restrained, did not change results. This brings the discussion to two critical points: 1) the importance of determining model fit by using an accumulation of evidence available, and 2) the significance of purposefully searching for the presence of multicollinearity. In addition to using multiple goodness-of-fit indices, it is important to also review standardized residuals. If only goodness of fit indices were reviewed, and not the correlation matrix or the standardized residuals, my original structural equation model could have easily been accepted as accurate.

In this study, since many of the observed measures and the latent constructs are highly correlated ($>.8$). Instead of deleting measured items and potentially altering factor structures for each of the latent constructs, the decision was made to conduct a path analysis using average scores for each constructs. Since path analysis does not include the correlations between each of the observed measures, this avoided the issue of multicollinearity in this circumstance, allowing for the identification of relationships without the presence of multicollinearity. Unfortunately, path analysis has been used extensively in sociological and econometric modeling in the guise of SEM (Elston, Olson, & Palmer, 2002). If one is truly conducting a SEM analysis, both structural and measurement models should be reported. However, when utilizing path analysis, it is important to remember that two of the main detracting features of using path analysis are that latent variables are not included and measurement error is not accounted for.

Study Limitations

There are a number of limitations to this study. First, internal consistency reliability testing demonstrated that there was room for improvement in the affective commitment scale when used in the health care setting. Future research in the development of scales with higher internal consistency reliability could help researchers achieve more accurate results, especially within health care. Secondly, since path analysis was used in this study, it is important to remember that two of the main detracting features of this method are that latent variables are not included, and measurement error is not accounted for (Meyers et al., 2013). Finally, a third potential limitation is that of common method variance. Single source data can introduce common method variance, measurement error that originates from the use of the specific method, rather than the study constructs. Measurement error can jeopardize construct validity, and inflate correlations amongst variables. In this study, this could have resulted from: social acceptability rather than true feelings, the attempt to remain cognitively consistent in responses, or respondent mood (Dillman et al., 2014). Precautions taken to control for common method variance were: using a monomethod approach; ensuring the items were clear, concise and specific; a minimal number of negative items were included; different scale anchors were used; and assuring respondent anonymity. While it is likely these factors limit the extent to which monomethod bias is a problem in this study,

knowledge in this area would be strengthened by inclusion of some non-self-reported independent or outcome measures.

Future Research

A coherent understanding of relationships amongst employee attitudes and work-related behaviours in health care settings had yet to be established. Further work to refine and elaborate the model is relevant to nurse managers, leadership, and to researchers interested in organizational behaviour. Revelations regarding the use of multi-factor structure models instead of partial or global models, may have significant implications regarding previous pioneer work in this area. This preliminary work sets the stage for more in-depth comprehension into the complex network of relationships, to help leaders both predict and optimize work-related behaviours.

Contexts

This was a preliminary look at the relationships between organizational justice, perceived organizational support, affective commitment to a multitude of distinct targets, and organizational citizenship behaviours of frontline nurses working in hospitals, the community, and long-term care settings in Ontario. Next steps require validation of the model with additional health care practitioners in Ontario, then extending this work to testing the model in other Canadian provinces, and in countries with different health care systems. It would be interesting to see if my proposed framework would differ across health systems with different remuneration policies aimed at either patient care or rewarding clinician performance (e.g., pay-for-performance, fee-for-service, or bundled-payment programs). To further improve generalizability of my model, applying the model in different non-health care settings, with different population, with different professions, and with different levels of leadership would help to determine if the relationships hold true in these different settings and with different populations. It may become apparent that there are additional variables that can be added to help improve model reliability. The use and application of my model may provide researchers with new insights into the relationships between work attitudes and work-related behaviours.

Multicollinearity

Further investigation is required into the presence of multicollinearity amongst work attitude and behaviour constructs. Determination of the optimal level of correlation is required. That is to say, at what point are high correlations detrimental to models. This is important to prevent distortion of the interpretation of results.

Analysis

Further exploration of work attitude and behaviour is desired using SEM, specifically in attempts to select constructs where multicollinearity will not be concern, and obtain high goodness of fit indices with low standardized residuals. This is important as there is much to be learned in regards to work attitude and behaviour relationships, by including latent variables in models.

Model Expansion

There is further opportunity to refine and improve the model. The model can be expanded to include intentional behaviours (e.g., turnover intention) and destructive behaviours (e.g., such as workplace deviance). Also of merit would be the investigation of different responsibilities attributed to different hierarchies of leaderships (e.g., shift supervisors, unit managers, nurse managers, and organizational managers), and the impact, if any, level of leadership has on the relationships identified in this study. In addition, the testing of leadership models that examine the mechanisms of influence on outcomes is warranted. Expansion of the model is important for a more fulsome understanding of how work attitudes impact a full continuum of workplace outcomes/behaviours.

Causal Relationships

A logical next step from association, presented here in my research, is future research on causal relationships. Further examination of the processes linking leadership practices with employee well-being is warranted. This is essential for future research to determine effective interventions. Of interest to nurse managers and leadership, would be investigation of interventions to enhance affective commitment to different targets, and the measurement of how successful they are. Efforts

by organizations and individuals to encourage and develop transformational and relational leadership are needed to enhance nurse satisfaction, recruitment, retention, and healthy work environments, particularly the current, and worsening, nursing shortage.

Additional Relationships

Further investigation is warranted evaluating moderator effects, specifically the addition of factors such as workplace climate and culture into my model. The interrelationship of the work environment and work experiences on workers in health care requires additional exploration. It would be worth measuring in the future whether the organization's reward system plays a moderating role in relationships amongst commitments and OCBs, and whether having fair procedures in place actually encourage the seeking out of distributive justice through formal channels rather than seeking it themselves through revenge. Finally, strategies focusing on affective commitment to work, the organization, and patients, may assist with enhancing commitment to the profession. Once this is accomplished, development and evaluation of strategies that target and enhance affective commitment to specific targets could prove extremely useful for managers when attempting to align employee behaviours with organizational goals.

Conclusions

The purpose of my research is to better understand work attitudes and their relationships to extra-role behaviours amongst nurses working in hospitals, the community, and long-term care settings in Ontario. This study presents new evidence to enhance knowledge regarding the relationships between organizational justice, perceived organizational support, affective commitment to eight distinct targets, and organizational citizenship behaviours. In examining the relationships of these constructs in a single model, novel insights are afforded regarding the complexity of their interrelationships and the importance of this complexity to health care leadership desirous of improving work productivity.

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Appendix A. Chronological Summary of Work Motivation Theories and Key Findings up until 2005

Year	Work Motivation Theory or Major Contribution (1911 - 2005)	Source
1911	Taylor - Scientific Management Theory - wage incentives, time & motion analysis , task & tool design, job design & engineering	Stajkovic 2006
1927	Spearman: Ability - General intelligence factor (g); precursor of the related works on other various forms of ability	Stajkovic 2006
1939	Hawthorne studies - Roethlisberger & Dickson - Started with external determinants of performance, then attitudes; precipitated Human Relations Movement	Stajkovic 2006
1943	Maslow's (1943) hierarchical need theory - Primary, safety, love, esteem, and self-actualization	Latham 2005; Stajkovic 2006
1951	Allport - traits long been considered needs or drivers: satisfaction leads to pleasure, and lack of fulfillment leads to displeasure	Latham 2005
1953	Reinforcement theory - Skinner - reinforcement, contingent reinforcers, observable behaviours; exclusive focus on environment	Stajkovic 2006
1953	Shaffer - used Murray's (1938) needs theory - developed goodness-of-fit model accounting for individual differences in need, and job characteristics	Latham 2005
1954	Social comparison theory - Festinger - Social comparison processes, especially slightly upward	Stajkovic 2006
1957	Cognitive dissonance theory - Festinger - Creation and dealing with cognitive dissonance	Stajkovic 2006
1960	McGregor's (1960) Theory X - human adults are by nature indolent (work as little as possible; lack ambition, dislike responsibility, and prefer to be led by others; are inherently selfish and indifferent to org needs and goals; are resistant to change; are gullible, not intelligent, and easily duped; theory Y - people are not passive; possess potential to develop, assume responsibility & behave accordingly to org goals; management should structure org policies so humans can achieve own goals while pursuing goals of the org	Latham 2005/06 Pinder 2008
1960	McGregor (1960) - people have 5 needs; goal to satisfy lower needs, physiological & security, before focusing on satisfying higher needs for affiliation, esteem, self-actualization	Latham 2006
1961	nAch., nPow., nAff. - McClelland (1961) Needs for achievement, power, and affiliation	Stajkovic 2006

1961-1963	Porter's (1961-1963) studies showed that people in low level jobs are concerned with satisfying lower order needs such as job security; people not concerned with their higher order needs until they progressed to higher level jobs where their lower level needs had been satisfied	Latham 2006
1964	VIE theory - Vroom (1964) Valence, expectancies (E1 and E2), and instrumentality as motivational force	Stajkovic 2006
1965	Equity theory - Adams (1965) – Degree if equity or inequity of outcomes (distributive justice) is input into job performance	Stajkovic 2006
1966	Two-factor theory of motivation - Herzberg (1966) Hygiene factors (prevent dissatisfaction) and internal motivators (cause motivation)	Stajkovic 2006
1966	Job enrichment Herzberg (1966) - enriching the jobs vertically with intrinsic motivators	Stajkovic 2006
1968	Goal-setting theory - Locke (1968) - specific and difficulty goals are regulators of performance; Goal commitment considered important moderator	Stajkovic 2006
1968	Porter and Lawler model - Porter & Lawler (1968) - refined and extended VIE; adds ability and perceived equitable rewards, performance causing job satisfaction	Stajkovic 2006
1968	Locke (1968) - specific high goals lead to higher performance; given goal commitment, the higher the goal, the higher one's performance; and variables like monetary incentives, participation in decision making, competition, and feedback only increase a person's performance to the extent that they lead to the setting of and commitment to a specific high goal	Latham 2006
1969	ERG theory - Alderfer (1969) - response to Maslow, three needs instead of five are focused: existence, relatedness, and growth	Stajkovic 2006
1970	Self-regulation theory - people monitor their own behaviours and consciously adjust those behaviours in pursuit of personal goals	Bedny 2006
1970	Lawler (1970) - money motivates employees if they value the amount offered, they believe their performance will lead to attainment of a desired amount, and they believe their effort will result in effective performance	Latham 2006
1972	Sociotechnical approach - Steiner (1972) - interface and harmony among personal, social, and technical functioning	Stajkovic 2006
1973	Attribution theory - Kelley (1973); Weiner (1985) - Attributions about past outcomes; dimensions: loci, stability, controllability; consensus, consistency, distinctiveness	Stajkovic 2006

1975	Cognitive evaluation theory Deci (1975) - intrinsic versus extrinsic motivation: External rewards are controlling when task is intrinsically motivating	Stajkovic 2006
1976	Herzberg's job enrichment theory - job enrichment only motivates employees with higher order growth needs for autonomy, responsibility, task variety, feedback, & recognition	Latham 2006
1977	Triandis's Model of Intentional Behaviour - behaviour can be predicted by people's intentions in conjunction with their habits for engaging in the behaviour	Hinsz 2007
1978	Social info processing - Salancik & Pfeffer (1978) - Attitudes and task design; cognitive evaluation of the task, past actions, and information from the social context	Stajkovic 2006
1978	Latham and Dossett (1978) - field experiment of unionized employees found inexperienced unionized employees had higher performance when a bonus was paid on a continuous rather than on a variable ratio schedule	Latham 2006
1979	Social categorization - Tajfel and Turner (1979) - through social categorization, social groups become able to provide identification to their members, these identifications being comparative, classifying individuals as different from or better than counterparts in other groups	Lewis 2011
1980	Spill over theory (Staines) - an employee's work experiences can carry over into the home and that experiences at home can affect one's work	Lim 2006
1980	Job characteristics model - Hackman & Oldham (1980) Three job characteristics lead to three psychological states, which lead to outcomes; moderated by growth need strength	Stajkovic 2006
1980	Theory of Reasoned Action - attitudes and subjective norms of individuals predict their intentions (Ajzen & Fishbein)	Hinsz 2007
1981	Control theory (feedback control or cybernetics) - ongoing comparative process aimed at reducing discrepancy b/w standards for behaviour & observed effects of actual behaviour	Schmidt 2012
1984	Model of Altruistic Motivation - Staw (1984) proposed a model of altruistic motivation in which the motivation to perform is a function of (1) identification with the organization and 2) perceived links between individual performance & important outcomes	Dickin 2011

1985	Self-determination theory - Ryan, Connell, and Deci - adopt the concept of internalization; There is a distinction between autonomous motivation (acting with a sense of volition and having the experience of choice, i.e. intrinsic motivation) and controlled motivation. There are three categories of motivation: amotivation (a lack of motivation and features an absence of intentional regulation); extrinsic motivation (may have up to four different levels that vary in degree of autonomy vs control they entail for the individual); and intrinsic motivation (inherently autonomous, and enjoyable for the person)	Fernet 2012
1985	Procedural justice - Folger & Greenberg (1985) - perceived fairness of the work procedure used in decision making; interacts with distributive justice in prediction	Stajkovic 2006
1985	Emotional Intelligence - Happy employees are more motivated at their job; high emotionally intelligence employees are able to suppress their negative feelings, such as unhappy with the recent pay increase or dissatisfied with this year performance appraisal, through the Regulation of Emotion ability	Othman 2009
1986	Social Cognitive Theory - a theory of human agency; It is a person's belief about his or her capacity to succeed at a specific task; motivation is influenced by the interaction of three key elements: the work environment itself, what the performer thinks, and what the performer does.	Buchner 2010
1986	Values - rooted in needs, provide a basis for goals (Locke & Henne 1986) and influence behaviour b/c they are normative standards used to judge & choose among alternative behaviours	Latham 2005
1986	Participation in decision making - Schweiger & Lena (1986) - whether different forms of participation in decision making lead to different work outcomes	Stajkovic 2006
1986	Impression management, organizational socialization - Jones (1986) - managing impressions others form about a person; potential implications for performance evaluation	Stajkovic 2006
1987	Prosocial motivation - the desire to expend effort to benefit other people	Grant 2008
1987	Discrepancy theory - discrepancies increase motivation; holding a goal end state will increase motivation to form specific plans to meet that goal. According to these models, awareness of the discrepancy elicits planning processes that allow smooth self-regulation toward the goal	Koo 2010
1987	Greenberg's (1987) conceptualization of organizational justice - to motivate people, leaders, in addition to being fair, must be seen as fair	Latham 2006
1989	enhancing human capital - the accumulation of investments in people through their education and on-the-job training	Wu 2007

1989	Kanfer & Ackerman - on a task that is complex for people, urging them to do their best results in higher performance than does setting a specific high performance goal.	Latham 2005
1989	Person-organization fit - Chatman (1989) - the better the fit, the better the outcomes	Stajkovic 2006
1989	Kanfer and Ackerman (1989) - contrary to prediction of goal setting theory, there are circumstances when urging people to do their best can lead to higher performance than the setting of a specific high goal	Latham 2006
1990	Locke & Latham presented their first comprehensive statement of goal setting as a theory	Latham 2005
1990	Public Service Motivation - (Perry and Wise) - an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations	Groeneveld 2009
1991	Kanfer - needs as internal tensions that influence the mediating cognitive processes that result in behavioural variability;	Latham 2005
1991	Action Theory (Frese) - (a) an action starts with a goal, (b) proceeds to considerations by an employee of events that may occur in the future, then (c) to the development of plans or strategies to attain the goal, (d) the selection of one of those strategies, (e) the implementation and (f) self-monitoring of the selected strategy, and (g) the processing of feedback resulting from the implementation of the strategy	Gagne 2005
1991	Theory of Planned Behaviour - in addition to the attitude and subjective norm constructs, the theory of planned behaviour stipulates that people's beliefs about how much control they have over their behaviour also influence their intentions to engage in the action. Perceived behavioural control reflects a person's perceptions about how capable he or she is of engaging in the behaviour as well as the perceived ease or difficulty of performing the behaviour.	Hinsz 2007
1992	Personality - George (1992) - predictor of work outcomes; review of numerous variables examined and their role in organizations	Stajkovic 2006
1992	Affect - George & Brief (1992) - affect as predictor of work outcomes (e.g., positive & negative affect)	Stajkovic 2006
1993	Erez & Earley (1993) - model of "cultural self-representation" to guide individual behaviour and managerial practices in cross-cultural settings; people strive to fulfill values for self-enhancement, efficacy, and self-consistency; model based on two collectivism versus individualism, and power distance	Latham 2005
1993	Meta-analyses by Sadri & Robertson (1993) and Stajkovic & Luthans (1998) - wide-ranging methodological and analytic work-related laboratory and field studies provide overwhelming evidence that efficacy beliefs influence the level of motivation and performance	Latham 2005

1993	Organizational commitment - Meyer, Allen, & Smith (1993) – OC as antecedent and consequence of work outcomes; three types cost, normative, emotional	Stajkovic 2006
1994	Organizational citizenship behaviour (OCB) - Van Dyne, Graham, & Dienesch (1994); Predicting non-required behaviours at work that contribute to various positive outcomes	Stajkovic 2006
1994	Lord & Levy (1994) - self-regulation was an automatic data-driven process	Latham 2005
1995	Mount & Barrick - conscientiousness is important in jobs that allow autonomy	Latham 2005
1995	Job autonomy can facilitate the time necessary for learning and development, which in turn improves job performance (Wall & Jackson 1995)	Latham 2005
1995	Rousseau (1995) studied affect and behaviour from the standpoint of idiosyncratic psychological contracts and effect they have on trust in the workplace	Latham 2005
1996	Winters & Latham (1996) replicated Kanfer & Ackerman's (1989) - on complex tasks, urging to do their best results in higher performance than setting a specific high performance goal	Latham 2005
1996	Weiss and Cropanzano (1996) - affective events theory which explains effects of mood and emotion on a person's performance	Latham 2006
1996	Gellatly - conscientiousness was significantly related to performance; effect completely moderated by self-efficacy and two measures of personal goals	Latham 2005
1996	Winters and Latham (1996) - on tasks where people have yet to master the requisite knowledge & skills, urging people to do their best is indeed superior to setting a high goal for a specific performance outcome But, setting a specific high learning goal leads to even higher performance on tasks the person has yet to master than urging people to do their best.	Latham 2006
1996	Foreman & Murphy (1996) applied a valence expectancy approach to predict job-seeking behaviour.	Latham 2005
1996	Ashford & Black (1996) - suggested 3 primary motives for feedback seeking: instrumental to attain a goal and perform well, ego-based to defend or enhance one's ego, and image-based to protect or enhance the impression others have of oneself	Latham 2005
1996	De Shon et al. (1996) - empirical support for this assertion; self-regulation does not require a significant amount of attentional resources	Latham 2005

1996	Affective events' theory - Weiss and Cropanzano (1996), a -ve workplace event causes negative emotional reactions, leading to a decrease of intrinsic work motivation over time	deLange 2011
1996	Wiggins (1996) - Five Factor Model (FFM). - extroverts are attracted to enriched jobs, neurotics are attracted to jobs that excel on hygiene variables (e.g., fringe benefits, the physical working conditions), and people who score high on conscientiousness are attracted to jobs that allow them a high degree of autonomy	Latham 2006
1997	Cole and Latham (1997) - adherence to procedural justice principles by managers during disciplinary action increases feelings of fairness by employees, union leaders, & labor lawyers	Latham 2006
1997	Regulatory focus theory- Higgins (1997) - there are two motivational or self-regulatory systems, labelled as promotion and prevention, which focus on different underlying needs (growth and development versus safety and security). To adapt to changes in biological, psychological and social functioning, people strive towards maximization of gains (promotion) and minimization of losses (prevention)	deLange 2011
1997	Lee et al. (1997) - that if goals are perceived as impossible, offering a bonus for goal attainment can lower motivation	Latham 2005
1997	Cordery (1997) - the necessity of differentiating importance of 3 dimensions of job autonomy (1) method control (2) timing control, and (3) discretion in setting performance goals; Four interrelated dimensions that affect job autonomy, the extent to which the supervisor (1) provides clear attainable goals, (2) exerts control over work activities, (3) ensures that the requisite resources are available, and (4) gives timely accurate feedback on progress toward goal attainment.	Latham 2005
1997	Ajila - the practical significance of Maslow's theory is widely accepted; Physiological needs are considered in decisions regarding space, lighting, & working conditions; safety in terms of work practices; love in regard to forming cohesive work teams; esteem through responsibility and recognition; and self-actualization in terms of opportunities for creative and challenging jobs/tasks	Latham 2005
1997	Kanfer & Heggestad - developmental theory that distinguishes between distal influences on action, in the form of relatively stable motivational traits, and proximal influences associated with individual differences in self-regulatory or motivational skills.	Latham 2005
1997	Judge et al. (1997) - theory of traits labeled core self-evaluations that represent one's appraisal of people, events, and things in relation to self; Core evaluations are manifested in four traits (self-esteem, locus of control, neuroticism, and generalized self-efficacy)	Latham 2005
1997	Social cognitive theories - (Bandura 1997) - positive feedback in relation to goal pursuit increases effort and goal difficulty levels	Latham 2005

1997	Variables affected by fairness perceptions include retribution (McLean Parks 1997), workplace retaliation (Skarlicki & Folger 1997)	Latham 2005
1997	Nigeria, Ajila (1997) - the satisfaction of lower order needs on the part of employees take precedent over the satisfaction of their higher order needs	Latham 2006
1997	Cordery (1997) - inherently routine structured jobs mitigate the beneficial effects of granting people autonomy	Latham 2006
1998	Stajkovic and Luthans (1998) – meta-analysis confirmed importance of self- efficacy to a person's motivation and performance; people with high self-efficacy commit to high goals.	Latham 2006
1998	Hogan & Shelton - social skill, a learned ability, is necessary for motivation to lead to success; high needs for achievement or power are frustrated, among people low in social skill	Latham 2005
1998	Variables affected by fairness perceptions include reactions to being laid off (Skarlicki et al. 1998)	Latham 2005
1998	Folger's (1998) moral virtues model adds ethical to the instrumental and relational models of justice	Latham 2005
1998	Parker & Wall (1998) - unenriched jobs can lead to psychological depression as well as cardiovascular disease; adverse effects are minimized, if not eliminated by introducing job autonomy, participation in decision making, and the opportunity to acquire new skills	Latham 2006
1999	Osteraker (1999) - model of dynamic triangle of motivation - posits a relation among culture, org culture, & individual characteristics in shaping perspectives of motivation	Worthley 2009
1999	Dweck (1999) - people's conception of their ability influences the goals pursued; incrementalists have a learning goal orientation; focus on the acquisition of knowledge and the perfecting of competence; choose tasks that are challenging for them. Errors are viewed as allowing opportunities to learn from mistakes. Entitists view ability as fixed, & have a performance goal orientation whereby they choose tasks allowing them to easily demonstrate proficiency at expense of learning something new	Latham 2005
1999	Brett & VandeWalle (1999) - goal orientation not have a significant relationship with performance, but was mediated by content of goals; individuals selected importance of personality in predicting, understanding, & influencing choice, affect, & performance has been shown, as has the importance of job characteristics as a mediator/moderator. Taxonomy of motivational traits & skills, and three theories: socioanalytic, core self-evaluations, & goal orientation- dominating literature	Latham 2005

1999	Gollwitzer (1999) - goal intentions accompanied by implementation intentions on complex tasks, lead to a higher rate of goal attainment than do goal intentions only; by forming implementation intentions, people strategically switch from conscious effortful control of their goal-directed behaviour to being automatically controlled by situational cues	Latham 2005
1999	Williams et al. (1999) found that a feedback source that is perceived as supportive increases feedback seeking	Latham 2005
1999	Gollwitzer & Bayer (1999) - a time perspective on goal striving and self-regulatory processes as mediating the effects of intentions on behaviour; latter consists of 4 phases: predecisional, preactional, actional, and postactional	Latham 2005
1999	Ambrose & Kulik (1999) - little or no advances have been made in expectancy theory research in the past decade; few theoretical or applied reasons for additional research on the application of this theory to organizational behaviour	Latham 2005
1999	Kamalanabhan, Uma, and Vasanthi (1999) - bank clerks in India stated that the satisfaction of their need for job security was most important to them, while bank officers are more concerned with satisfaction of their higher order needs	Latham 2006
2000	Seijts & Latham - examined applicability of goal-setting principles when personal goals are potentially incompatible with those of the group; found that social dilemmas are boundary conditions for the usual positive effects of goal setting. Self-enhancing personal goals have a detrimental effect on a group's performance. Seven-person groups more competitive than those in groups of three. Only when individual's goal was compatible with group's goal was group's performance enhanced	Latham 2005
2000	Haslam et al. - When personal identity is salient, needs to self-actualize and enhance self-esteem through personal advancement and growth become dominant; when social identity is salient, need to enhance group-based self-esteem through sense of relatedness, respect, peer recognition, and attainment of group goals dominate	Latham 2005
2000	Three principles assist design and interpretation of motivation and reward systems: identify the cultural characteristics of a country regarding collectivism/individualism and power distance; understand yourself and cultural values you represent; and understand meaning of various managerial practices in each country (Erez 2000)	Latham 2005
2000	Bargh & Ferguson (2000) - research findings that show that automatic or nonconscious goals produce the same outcomes as conscious goal pursuit in information processing, memory storage, social behaviour, and task performance, as well as in self-efficacy, self-evaluation, and mood state	Latham 2005

2000	Feedback is a moderator to guide behaviour toward automatized goal (Bargh & Ferguson 2000). Environment can activate a person's goal within given situation as part of the preconscious analysis of the situation. The habitual plan for carrying out the goal is activated automatically without conscious planning	Latham 2005
2000	Control theory - (Carver et al. 2000) - failure motivates more than success	Latham 2005
2001	Job satisfaction - Judge, Thoresen, Bono, & Patton (2001) - job satisfaction as antecedent and consequence of work outcomes	Stajkovic 2006
2001	Forgas and George (2001) - affect infusion model, showing how one's affect colors one's cognitive appraisal of one's job	Latham 2006
2001	Houkes et al. (2001) - Dutch bank/school - a positive relationship between work content (skill variety) & work motivation, & b/w erosion of work content & emotional exhaustion	Latham 2005
2001	A meta-analysis by Colquitt et al. (2001) showed employee perceptions of justice correlate highly with job performance.	Latham 2006
2001	Cropanzano, Byrne, Bobocel, and Rupp (2001) - importance of justice principles tied to satisfaction of person's needs (for control, belonging, self-esteem & meaningful existence)	Latham 2006
2001	A meta-analysis - core self-evaluation is a strong dispositional predictor of job satisfaction (Judge & Bono 2001)	Latham 2005
2001	Baum et al. (2001) - relationship between personality and performance is mediated by situationally specific goals and self-efficacy	Latham 2005
2001	Erez & Judge (2001) - motivation mediated 1/2 relationship b/w core self-evals & performance; core self-eval is a motivational trait, explains its effect on job performance	Latham 2005
2001	A meta-analysis showed that core self-evaluation is a strong dispositional predictor of job satisfaction (Judge & Bono 2001)	Latham 2005
2001	Bandura (2001) - obstacles and set-backs provide the challenge and excitement to spur them on, to increase their effort, to persist until the goal is attained, and to set even higher goal upon its attainment; people with low self-efficacy look for tangible reasons, to abandon their pursuit of a difficult goal	Latham 2006

2001	Vancouver, Thompson, & Williams (2001) - A boundary condition or moderator for the normally +ve effects of high self-efficacy are tasks where performance on 1 trial yields no useful info for performing well on subsequent trial; high self-efficacy on the part of a gambler who consistently plays roulette will prove beneficial for the gambling casino only	Latham 2006
2001	Brown et al. (2001) - people with high self-efficacy use feedback to increase motivation, task focus, and effort and decrease anxiety and self-debilitating thoughts	Latham 2005
2001	SCT research shows the effect of environmental antecedents and consequences are mediated by cognitive variables; SCT emphasizes dual control systems in self-regulation of motivation (Bandura 2001)	Latham 2005
2001	Eden (2001) showed that a person's belief in efficacy of tools available to perform requisite work, can be as motivating as self-efficacy	Latham 2005
2001	Lind's (2001) fairness heuristic theory - decisions can be automatic as well as deliberate	Latham 2005
2001	Justice matters to people - it facilitates maximization of personal gain, provides info re: their value to leader/team, & is aligned with basic respect for human worth (Cropanzano et al.)	Latham 2005
2001	Rational Control Theory - people are not automatically reactive to set discrepancy thresholds and can handle range in behaviour-standard gap size; humans able to and set higher goals in response to goal achievement, machines do not; factor in human tendencies to past success & expectancies for future success - controlling behaviour (Donovan)	Buchner 2007
2001	Korman (2001) theory of work motivation - contextual elements of the workplace combine with dispositional factors to influence two independent self-regulatory processes: the self-enhancement motivational system and the self-protective motivational system.	Whitaker 2012
2002	Variables affected by fairness perceptions include theft (Greenberg 2002), exploitation and self-sacrificing decision allocations (Turillo et al. 2002), the aesthetically pleasing attributes of workplace revenge (Trip et al. 2002), sabotage (Ambrose et al. 2002)	Latham 2005
2002	Justice matters because it facilitates maximization of personal gain, provides info as to their value to leader/team, and it is aligned with a basic respect for human worth (Ambrose)	Latham 2005
2002	Cable & DeRue (2002) - employees differentiate among three varieties of fit: person-environment fit; "needs-supplies" fit and job demands- employee abilities fit	Latham 2005

2002	Holtom et al. (2002) - matching employees' preferences for full- or part-time work status benefited job satisfaction, commitment, & retention plus extra-role and in-role behaviours	Latham 2005
2002	Verplanken & Holland (2002) - how values affect choices; outcomes with potential to activate a person's central values instigate the acquisition of info and motivate choice decisions in accordance with pursuing the values in question; activation and information collection mediate the relationship between values and decision behaviour	Latham 2005
2002	Day, Schleicher, Unckless, and Hiller (2002) - a self-monitoring personality often leads to leadership positions; self-monitors are sensitive to the expectations of others, which in turn increasing their likeability (a key to one's job progression)	Latham 2006
2002	Steers & Sanchez-Runde (2002) - national culture determines three sets of distal sources of motivation: people's self-concept, including personal beliefs, needs, and values; norms about work ethic and the nature of "achievement," tolerance for ambiguity, locus of control, etc.; and environmental factors such as education and socialization experiences, economic prosperity, and political/legal systems	Latham 2005
2002	Perceived value of feedback increases, people seek it actively and frequently (Tuckey et al. 2002)	Latham 2005
2002	Goal-setting (Locke&Latham 2002) - positive feedback in relation to goal pursuit increases effort and goal difficulty levels	Latham 2005
2002	Erez & Isen (2002) - people with higher levels of positive affect exhibited higher levels of persistence, effort, self-reported motivation, and performance on different tasks.	Latham 2005
2002	Socioemotional selectivity theory - that individuals will select goals in accordance with their perceptions of the future as being limited or open-ended (Lang & Carstensen)	deLange 2011
2003	Hogan & Warremfeltz - people have innate biological needs for acceptance and approval; status, power, and control of resources; and predictability and order. Needs translate into behaviours for getting along with others, getting ahead, and making sense of the world	Latham 2005
2003	Schmitt et al. - personality is the primary predictor of elements of motivation; research now shows traits predict &/or influence job search & choice of job, & job performance & satisfaction; traits include extroversion, conscientiousness, self-regulatory and self-monitoring strategies, tenacity, core self-evaluations, and goal orientation	Latham 2005

2003	Tett & Burnett (2003) - person-situation interactionist model of job performance, laying groundwork for specifying conditions under which particular personality traits predict and explain performance in specific jobs; variance in trait-expressive behaviour is maximized in “weak” situations; “strong” situations, extrinsic rewards overpower individual differences in intrinsic rewards associated with trait expression	Latham 2005
2003	Witt & Ferris - the relationship between conscientiousness and job performance that requires interpersonal effectiveness is moderated by social skill	Latham 2005
2003	Parker (2003) - unenriched simplified jobs stemming from lean processes (LP) can affect an employee’s level of job depression, the mediator - job characteristics which also partially mediated organizational commitment; to the extent LP can be introduced in so as to allow job autonomy, skill use, and participative decision making, the employee’s well-being and motivation increase	Latham 2005
2003	People with low self-esteem lack the resilience to seek negative feedback because it may corroborate a negative self-appraisal (Bernichon et al. 2003).	Latham 2005
2003	Socio-analytic theory - (Hogan, 2003; Hogan & Holland, 2003; Hogan & Warremfeltz, 2003) - people have innate needs for (1) acceptance and approval, (2) status, power and control of resources, and (3) predictability and order.	Latham 2006
2003	However, Lord et al. (2003) illustrated the potential value of neuropsychologically based models for explaining expectancy theory. A major criticism of the theory, is that the computations required are unrealistically time-consuming and exceed working memory capacity. Using simulation methodology and neural networks that operate implicitly, authors reinterpreted the theory so that cognitive resources are not exhausted by simple computations.	Latham 2005
2003	Pritchard & Payne (2003) updated motivational component of Naylor, Pritchard, & Ilgen’s “NPI” theory (1980). Motivation - the process that determines how energy is used to satisfy needs, is a resource-allocation process where time and energy are allocated to an array of tasks; includes the direction, intensity, and persistence of this allocation process; is a future-oriented concept in that people anticipate the amount of need satisfaction that will occur when outcomes are received. Perceived relationship between applying energy to actions and the resulting need satisfaction influences how much of the energy pool is devoted to that action	Latham 2005
2004	Van-Dijk and Kluger (2004) - drew on need hierarchy theory to determine whether people raise their goal upon attaining it; found once lower order needs are satisfied, individual’s goal for food or safety is not increased, but, when higher order goal for self-esteem or actualization is attained, an even higher goal is set for the satisfaction of these two needs	Latham 2006

2004	Kluger (2004) - experiments showed people who receive positive feedback under a promotion focus or negative feedback under a prevention focus have higher motivation than those who receive feedback incongruent with their regulation focus	Latham 2005
2004	Cognitive ability - Schmidt & Hunter (2004) - General mental ability (GMA) as a predictor of work outcomes	Stajkovic 2006
2004	Collective-efficacy - people derive meaning from being linked to social collectives through their identities (Ellemers, De Gilder and Haslam)	Lewis 2011
2005	Skarlicki and Latham (2005) - adherence to justice principles by union leaders increases union citizenship behaviour among union members	Latham 2006

Appendix B. Electronic Search Strategy - PsychINFO

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Appendix C. Consort Screening Flow Diagram

Appendix D. Data Abstraction Chart

First Author	Year	Country of Origin	Industry	Major Theories/ Focus Area	Population Examined	Sample Size	Theoretical/ Empirical	Methodology	Main Findings
Ayupp	2010	Malaysia	Retail industries	self-efficacy	employees	84	empirical	quantitative	relationship b/w outcome interdependence and self-efficacy towards employees work motivation
Bambi	2013	Tuscany, Italy	Health care	bullying	nurses in ED and ICU	444	empirical	exploratory-descriptive study, through closed-ended questionnaire.	most reported gossiping, complaints shared with others but not discussed with concerned person, & sarcasm; more common in EDs than ICUs; symptoms - low morale, anxiety, and sleep disturbances
Bateman	2012	USA	Variety	goal setting theory	variety	25	empirical	qualitative - theory elaboration	most research findings on psychology of work motivation based on short-term studies; consider long-term motivation (goals & goal pursuit, & self-regulation) and development of integrative model
Bedny	2006	USA	Food, Manufacturing	organizational participation, shared leadership, and organizational democracy	engineers, musician	5	conceptual	functional analysis	maintenance of motivation considered cyclic process; work motivation construed as dynamic system, dependent on complex relationships b/w various mechanisms of self-regulation; motivation is not homogeneous process, rather comprised of different stages; 5 motivational stages: (1) pre-conscious motivational stage; (2) goal-related motivational stage; (3) task evaluative motivational stage; (4) executive or process-related motivational stage; & (5) result-related motivational stage.

Bhat	2010	India	Manufacturing	Herzberg's two factor; Maslow; Vroom's Expectancy Theory; Adam's equity; Skinner's operant conditioning	sales employees	112	empirical	mixed	significant relationship b/w motivation factors & performance; motivation & performance of organization are directly linked
Bhatti	2012	Pakistan	Business	job design; job characteristic	middle-upper management bankers	200	empirical	quantitative	positive and significant relationship between job characteristics and personal outcomes
Bipp	2011	Germany	Education	goal setting; goal commitment	undergrads	158	empirical	quantitative	neuroticism is indirectly related to attainment of assigned goals via motivational variables in the process of goal pursuit
Bipp 1/2	2010	Germany	Education	Herzberg's two-factor theory ; core self-evaluation; job characteristics model (and age)	students facing graduation	114	empirical	quantitative	two personality traits (openness to experience and core self-evaluations) are related to the preference concerning work characteristics
Bipp 2/2					full-time employees	114			
Boezeman	2008	Netherlands	Volunteer organization	social identity theory	volunteers	89	empirical	quantitative	volunteer organizations might convey importance of volunteer work & provide organizational support to induce pride & respect to enhance organizational commitment among volunteers

Brekke	2010	Norway	Health care; Food	homo economicus mode	nurses and bakers	NA	empirical	mathematical model; quantitative study	work is motivated by monetary compensation and desire to be important to others; lump-sum taxation, desire to be important not change effort of workers receiving performance pay
Brewer	2011	Georgia, USA	Public vs Private	public service motivation	undergrads	40	empirical	experimental; quantitative	individuals who believe they are taking part in research funded by government, maintained higher levels of vigilance, experienced fewer attention lapses, and responded faster
Buchner	2007	USA	Organization and management	goal setting; control; rational control; social cognitive theory	employees	NA	theoretical	NA	goal-setting theory's emphasis on goal difficulty and specificity has not translated to most performance management practices; lack of emphasis concerning tight feedback loops and goal hierarchies and their importance to effective self-regulation
Buelens	2007	Belgium	Public and Private	public sector	variety	3723	empirical	quantitative	public sector employees less extrinsically motivated; differences in hierarchical level are more important determinants of work motivation than sectoral differences

Cai	2011	China	Health care	job characteristics model	clinical nurses	238	empirical	quantitative	results supported the Job Characteristics Model
Chandler	2009	Tanzania, Africa	Health care	psychometric theory	non-physician clinicians	150	empirical	mixed	non-salary motivators only have effect where salary requirements satisfied; consequences of low motivation are poorer quality of technical care & services; dissatisfaction with poor work conditions and favoritism
Ciptono	2007	Indonesia	Organization and management	total quality management	managers	1,332	empirical	quantitative	autonomy acts as a person enhancer to increase internal work motivation & serves to moderate extent to which individuals are able to influence a system
de Jonge	2008	Netherlands	Health care	job matching; conservation of resources; broaden and-build theory	health care workers	826	empirical	quantitative	emotional job resources moderated the relation between emotional job demands and health/wellbeing outcomes
Deal	2013	USA	> 200 organizations	self-determination theory	variety	3,440	empirical	quantitative	managerial level better explains work motivation than does generation

deLange	2011	Netherlands	Health care	social exchange; affective events; socioemotional; regulatory focus; lifespan theory of control	employees	90	empirical	quantitative	relational contract breach predicts lower work motivation; age-related processes such as future time perspective and regulatory focus are important variables to include in future psychological contract research
Dickin	2011	New York, USA	Health care	altruistic; intrinsic and extrinsic	para- professional community nutrition educators; supervisors	147	empirical	mixed	high levels of autonomy, associated with supervisors' delegation and support, decision-making on scheduling and curricula, and job satisfaction
Dwivedula	2010	India	Various industries - project based organizations	traditional vs project based organizations; goal; Adam's Equity Theory	project workers	199	empirical	quantitative	development of 5 factor structure of work motivation
Dysvik	2008	Norway	Service	social exchange	trainees	343	empirical	quantitative	relationship between perceived training opportunities, and both task performance and citizenship behaviours are fully mediated; the relationship between perceived training opportunities and turnover intention was partially mediated by intrinsic motivation
Eliasa	2012	USA	Social Sciences	technology acceptance model; theory of reasoned action	employees	612	empirical	quantitative	older employees exhibit strongest relationships with the outcome variables when possessing a high attitude towards technology

Farmakas	2014	Greece	Health care	work environment	nurses	248	empirical	descriptive, comparative	RNs working in a psychiatric hospital perceived professional practice environment more negatively than community RNs
Fernet	2012	Quebec, Canada	Education	self-determination theory	principals	586	empirical	quantitative	job resources had a positive effect on autonomous motivation but negative effect on controlled motivation; autonomous motivation had a negative effect on exhaustion, positive effect on commitment; controlled motivation had a positive effect on exhaustion
Fernet	2010	Quebec, Canada	Education	self-determination theory	college employees	533	empirical	longitudinal; prospective; quantitative	negative main effects for high-quality relationships & self-determined motivation on burnout; high-quality relationships with coworkers is crucial for those who exhibit less self-determined motivation
Frey	2008	Switzerland	Business	awards; goal setting; reinforcement; social cognitive; Herzberg's two factor Theory; need	researchers	52	empirical	mixed methods	awards cannot be equated with monetary compensation; essential for award to be accompanied by substantial monetary bonus; gifts did not work as well as payments in cash; important to consider effect of awards after conferral as non-recipients substantially decrease contributions; winners increase contributions even further
Gagne	2005	Canada	Organization and Management	self-determination theory	NA	NA	theoretical	NA	self-determination theory detailed the processes through which extrinsic motivation can become autonomous; research suggests intrinsic motivation and autonomous extrinsic are related to performance
Gaki	2013	Greece	Health care	Herzberg' two factor theory; Maslow's motivation theories	nurses	152	empirical	quantitative	job satisfaction, work sector and age related to motivational factors; emphasis on motivators not strictly relating to economic rewards

Gallie	2012	Britain	Industrial and Service sectors	teamwork	employees	14,344	empirical	quantitative	benefits of teamwork, in terms of both enhancing work motivation and employee welfare, are confined to self-directive teams; non-self-directive teams suppress use of personal initiative and discretion
Gelfand	2007	Israel, Turkey, USA	Organization and Management	cross-cultural OB	NA	NA	literature review	NA	cross-cultural research in OB expanded; cultural differences take various forms; research still mainly focuses on main effects; efforts to explain cultural differences still too narrow
Gillet 1/2	2013	France	Policing	self-determination theory	police	235	empirical	quantitative	work motivation related to both intra-individual (global motivation) and contextual (organizational support) factors; self-determined work motivation related to work engagement
Gillet 2/2						147			results from study 1 are replicated in a training session; after one month
Grant 1/3	2007	USA	University fundraising organization	job design; game theory	employees	39	empirical	follow-up; longitudinal; field; quantitative study	intervention group displayed significant greater persistence and job performance
Grant 2/3			Education		undergrads	30			respectful contact with beneficiaries increased persistence
Grant 3/3			Education		undergrads	122			contact with beneficiaries and task significance interacted to increase persistence
Grant 1/3	2008	USA	Non-profit	expectancy; intrinsic motivation	callers for fundraising organization	33	empirical	quantitative	task significance intervention increased levels of job performance
Grant 2/3			Recreation		lifeguards	32	empirical	quantitative	task significance increased job dedication and helping behaviour
Grant 3/3			Non-profit		callers for fundraising organization	34	empirical	quantitative	conscientiousness and prosocial values moderated effects of task significance on performance of new workers

Groeneveld	2009	Netherlands	Public sector	public service motivation; Herzberg's two factor theory	employees	4469	empirical	quantitative	both extrinsic and public service motivations of employees are greater when unemployment was higher
Haagh	2011	Sao Paulo, Brazil	Business	self-development motive; incentives	employment seekers & cash grant recipients	752	empirical	quantitative	income security supports an Aristotelian principle of work motivation as individual development; labor market institutions and opportunity levels affect this link
Hinsz	2007	USA	Food	reasoned action; planned behaviour; Triandis's model of intentional behaviour; integrated framework of motivated work behaviour	plant workers	174	empirical	quantitative	attitudes and subjective norms predicted intentions; these intentions, plus perceived behaviour control & work habits, predicted behaviours
Hsieh	2010	Taiwan	Policing	intrinsic work motivation; stress	frontline police	337	empirical	quantitative	policy viewed as disclosure of personal information; intrinsic work motivation significantly lower
Inceoglu	2012	UK	Variety	selective optimization with compensation theory; socioemotional theory; generativity; role	individuals who completed survey	11, 900	empirical	quantitative	shift in people's motives rather than a general decline in motivation with age; older employees more motivated by intrinsically rewarding job features
Jakobsen	2013	Denmark	Public	social exchange theory	frontline employees	> 800	empirical	field study; quantitative	positive treatment effect when local front-line managers felt less supported prior to intervention.

Josiam	2009	USA	Hospitality and management	career stage theory	undergrads	376	empirical	quantitative	Gen Y – positive attitudes to work, low cynicism; increasing age & work experience, positive work attitude enhanced, while negative attitudes ameliorated
Jung	2006	USA	Variety - technology, biotech, IT, finance, insurance, aerospace engineering.	House's model of charismatic leadership	engineers, scientists, corporate employees (various management -levels)	1,163	empirical	quantitative	managers rated by subordinates as high on charismatic leadership reported higher levels of self-monitoring, self-actualization, motive to attain social power and self-enhancement; managers rated by superiors as high on charismatic leadership are associated with followers who reported higher levels of extra effort and OCB
Kahkonen	2010	Helsinki, Finland Stockholm, Sweden	Business	socio-psychological stress theories and x-efficiency theory	employees	1,535	empirical	qualitative	high allocative and technical efficiency claims may lead to inefficiency; too much competition does not raise efficiency
Katz	2005	USA	Technology	Hackman and Oldham's framework	employees	NA	conceptual	NA	5 dimension of task characteristics (skill variety, task identity, task significance, autonomy, feedback) elicit high levels of intrinsic motivation
Koo 1/5	2010	USA; South Korea	Education	goal; discrepancy theory; intrinsic vs extrinsic	undergrads	86	empirical	quantitative	focus on remaining actions increases motivation to move up; focus on completed actions increases satisfaction derived from present
Koo 2/5			Education		students	95			
Koo 3/5			Education		undergrads	179			
Koo 4/5			Advertising		employees	66			
Koo 5/5			Education		undergrads	68			

Kooij	2011	Netherlands	Education	lifespan theories - selection optimization and compensation; socio-emotional selectivity theory (SST)	university employees	600	empirical	longitudinal; quantitative	losses in subjective general health negatively predicted open-ended future time perspective (FTP), which was associated with an increase in growth motives; limited FTP was associated with increase in generativity motives
Kooij	2011	Netherlands	Multiple	life span psychology	NA	NA	literature review; meta-analysis	NA	positive relationship between age and intrinsic motives; negative relationship between age and strength of growth and extrinsic motives
Kuvaas	2006	Norway	Energy-intensive industries	expectancy; reinforcement; instrumentality; equity; cognitive evaluation; self-determination theory	employees	634	empirical	quantitative	base pay level, related to self-reported work performance and affective unit commitment
Latham	2005	Canada	Organization and Management	review of many	NA	NA	literature review	NA	goal-setting, social cognitive, and organizational justice theories are the most important approaches to work motivation over last 30 years
Lather	2007	India	Organization and Management	personality; Hawthorne studies	associates	100	empirical	quantitative	dynamios higher on achievement, order, and autonomy; drones higher on aggression and heterosexuality resulting in poor interpersonal relationship

Lewis	2011	Trinidad & Tobago	Organization and management	social cognitive - self efficacy; collective efficacy; social identity; social categorization	NA	NA	conceptual	NA	development of a model to organize studies on teamwork processes and outcomes; model includes four types of variables (contextual, independent, moderator, and dependent)
Lim	2006	Singapore	Financial	spillover theory intrinsic motivation	undergrads & parents	250	empirical	quantitative	spillover effect of paternal perceived job insecurity on paternal money anxiety; crossover effect of parental money anxiety on youths' money anxiety
Lundberg	2009	Sweden	Hospitality and tourism	Herzberg's two-factor theory; need theory; process theory; personality trait - Big 5	seasonal workers	613	empirical	mixed	migrant community of workers less concerned about wage level; more concerned about meeting new people than resident workers
Manolopoulos	2008	Greece	Public sector	public sector; goal theory; environmental forces	employees	1,226	empirical	quantitative	expected work outcome is directly influenced by a multifaceted context of motivators; extrinsic rewards exert stronger influence
Moran	2014	USA, north eastern	Health care	self-determination theory	mental health peer workers	31	empirical	qualitative; grounded theory	external motivations included generic occupational goals and getting away from negative work experiences; internal motivations corresponded with SDT basic needs

Nafziger	2011	Denmark	Business	self-efficacy; context	employees	NA	conceptual	NA	the higher the employee's self-efficacy, the higher his work motivation and the lower the bonus the firm has to pay
Negussie	2012	Ethiopia	Health care	framework developed by Khan, Farooq & Ullan; conceptual model of motivation theory (payment, promotion, benefit, recognition)	nurses	230	empirical	quantitative	payment is most important; difference in nurse work motivation based on age, educational qualification and work experience
Niu	2009	Taiwan	Private organizations	paternalistic leadership	employees	265	empirical	quantitative	benevolence and morality increased subordinates' deference to supervisor and work motivation
Nomura	2012	Tokyo, Japan	Health care	gender	private medical school alumnae	1684	empirical	quantitative	those with strongest perception of gender-based career obstacles are more likely to work part-time
Othman	2009	Selangor & Kuala Lumpur	Service	emotional intelligence	service providers and superiors	167	empirical	quantitative	interactions between work motivation and Self Emotional Appraisal & b/w work motivation and Others' Emotional Appraisal have significant affect on team role effectiveness

Park	2012	Illinois, Georgia USA	Public agencies & Nonprofit organizations	self-determination theory; public service motivation; NPSM	managers	1,220	empirical	quantitative	four different motivational constructs; public and nonprofit managers are similar in terms of importance of intrinsic motivation
Park	2012	USA	Public agency	public service motivation; expectancy; self-determination theory	managers	790	empirical	quantitative	intrinsic motivation is associated with job involvement, perceptions of red tape, & organizational effectiveness; communication provides more autonomy & discretion, leading to more positive organizational dispositions
Polesie	2013	Sweden	Construction	autonomy	contractor project managers	15	empirical	qualitative	managers needed to be able to influence planning of activities, then standardization would not motivation
Purohit	2014	India	Health care	Herzberg two-factor theory	doctors (or medical officers)	92	empirical	quantitative	motivational importance to intrinsic factors (job security most important, then interesting work, respect & recognition)
Riketta	2007	Germany	Pharma	social identification	employees	399	empirical	quantitative	perceived compatibility correlated positively with both network identification and network motivation
Sahoo 1/4	2011	India	Public and private	Maslow's hierarchy; Herzberg's two factor theory	employees	220	empirical	quantitative	salient need satisfaction bears positive correlation with job involvement
Sahoo 2/4			Finance		officers and assistants	240			relationship between salient need satisfaction and involvement

Sahoo 3/4			Education		teachers	180			association between salient need satisfaction and involvement is significant
Sahoo 4/4			Military		officers, junior & non commission	203			security was most important need; respect & recognition also salient need
Schmidt	2009	USA	Education	social cognitive theory - self efficacy; control theory	undergrad students	89	empirical	quantitative	following poor performances, self-efficacy positively related to subsequent performance; following successful prior performances, self-efficacy negatively related to subsequent performance
Seo	2010	USA	Financial	expectancy; control	employees	118	empirical	quantitative	core affect is related to all behavioural outcomes of motivation, generative orientation, effort, and persistence
Sloof	2010	Amsterdam	Business	expectancy theory	employees	94	empirical	quantitative; lab experiment	subjects exert significantly more effort in the volatile environment than in the stable environment
Snel	2008	Netherlands	Social Policy	transitional labor markets	incapacity benefit claimants	687,800	empirical	quantitative	careful explaining outcomes between ethnic groups as 'cultural phenomena' as other explanations may exist: differences in work motivation, lack of 'transition facilities' in companies and differential treatment
Stajkovic	2006	USA	Psychology	psychology (social, clinical, developmental); social anthropology	employees	NA	conceptual	NA	confident employees may be better able to cope with contemporary work dynamics than those harboring doubt
Stoeber	2013	Britain	Professional services	self-determination theory	service & student employees	133	empirical	quantitative	high levels of work motivation explain why self-oriented perfectionists are workaholic

Storseth	2006	Norway	Variety	job insecurity; stress	employees	729	empirical	quantitative	mental health complaints & employee risk taking behaviour are significantly predicted
Strachan	2012	Europe, North & South America, Africa, and Central Asia.	Health care	social identity;expectan cy;equity	stakeholders	15	empirical	qualitative	interventions organized into: cross-cutting approaches, recruitment, training, supervision, incentives, community involvement & ownership, information & data management, and mHealth
Sung Min Park	2010	Georgia, USA	Public Management	goal setting; expectancy; equity Theory	public service	1,948	empirical	quantitative	all four personnel reform systems are directly & indirectly associated with organizational consequences
Tadic	2013	Croatia; Netherlands	Education	self- determination theory	secondary school teachers	132	empirical	mixed - diary and questionnaire	levels of self-concordance & happiness vary significantly on a within-day level
Tolli	2008	USA	Education	self-regulation	undergrads	198	empirical	quantitative	performance feedback and attributions interactively influenced self-efficacy, which influenced goal revision.
Toode	2011	Finland; Estonia	Health care	variety	nurses	NA	literature review	inductive content analysis; cross- sectional self- admin questionnaire; qualitative semi- structured interviews	staff nurses motivated by work-place and personal characteristics, working conditions, individual priorities, and internal psychological states

Tremblay 1/2	2010	Canada	Military	self-determination Theory	military	600	empirical	quantitative	positive work environment is accompanied by higher levels of work self-determination, leading to increased job engagement and satisfaction
Tremblay 2/2			Non-Military		civilians	192			
Tsai 1/2	2007	Taiwan	Business	self-efficacy and task persistence and mood	insurance sales agents and supervisors	306	empirical	quantitative	positive moods predict task performance indirectly
Tsai 2/2						263			
Tummers	2006	Netherlands	Health care	psychometric theory; organizational & work characteristics; contingency	nurses	596	empirical	quantitative; longitudinal	relationships between organizational characteristics and work characteristics
van Beek	2013	Netherlands	Health care	social identity theory; organization identification	nurses	468	empirical	quantitative	social networks relate to staff's organizational identification, which relate to work motivation and behaviour towards residents
van den Berg	2008	Netherlands	Health care	contingency approach of organizations; Demand-Control-Support	nurses	2612	empirical	quantitative	RNs in diabetes care, rate organization, aspects and psychological reactions more positively than RNs in other settings

Vancouver	2008	USA	Human Resource Management	self-regulation theories - goal, valence and expectancy; dynamic process	employees	NA	conceptual theory building	NA	work motivation theories becoming more comprehensive, self-regulatory or goal-oriented, and dynamic
Von Bonsdorff	2011	Finland	Health care	needs based; content theories	nurses	628	empirical	quantitative	financial and non-financial rewards are highly appreciated; age-related differences among respondents' financial reward preferences
Wallgren	2011	Sweden	IT	intrinsic, extrinsic, interactive motivation	consultants	12	empirical	qualitative	primary motivators are task variety & opportunity to influence/manage projects
Wegge	2010	Europe, USA	Organizational Leadership	organizational participation, shared leadership, and organizational democracy	employees	NA	literature review	meta-analysis	participation and collaboration-promoting leadership motivates group members to overtly reflect upon and communicate about their collective objectives, strategies, and processes
Wegge1/2	2006	Germany	Service Industry - call centre	job characteristics model (JCM); social identity theory; job design; organizational identification	call agents	211	empirical	quantitative	employees experiencing a high motivating potential reported more OCB, higher job satisfaction, and less turnover intentions; organizational identification was an independent predictor of job satisfaction, turnover intentions, OCB, and well-being
Wegge 2/2						161			

Wei Ting	2013	Taiwan	non-profit (sport)	self-determination theory	volunteers	489	empirical	quantitative	autonomy support predicted autonomous motivation; structure served as DV and autonomy support as a predictor
Wetlesen	2013	Norway	Multiple	generation; gender	families	12	empirical	interview; case study; qualitative	no gender difference regarding careers; work motivation and preferences about the structure of working time differed by gender
Worthley	2009	Japan	Variety	Herzberg's motivation-hygiene (two-factor theory)	employees	623	empirical	quantitative	Japanese men value intrinsic motivators more than extrinsic; females rate extrinsic factors higher
Wright	2007	New York, USA	Public Service	goal theory; public service motivation	external consultants	807	empirical	quantitative	importance of organization's mission increases employee work motivation
Wu	2007	USA	IT	altruism, reciprocity; expectancy-value theory	software developers	148	empirical	quantitative	satisfaction & intentions to continue is influenced by helping behaviour & economic incentives
Yildirim	2009	Turkey	Health care	bullying	nurses	286	empirical	quantitative, descriptive	bullying is measurable; has -ve effect on psychology & performance

Appendix E. Conceptual Framework – *Scoping Review Results* (individual-, unit-, organization-level characteristics and processes influencing Motivation)

Appendix F. RNAO Interest Groups Included in Study

<u>Clinical Nurse Specialist Association of Ontario</u>
<u>Community Health Nurses' Initiatives Group (CHNIG)</u>
<u>Complementary Therapies Nurses' Interest Group (CTNIG)</u>
<u>Diabetes Nursing Interest Group (DNIG)</u>
<u>Gerontological Nursing Association Ontario (GNAO)</u>
<u>Independent Practice Nurses Interest Group (IPNIG)</u>
<u>International Nursing Interest Group (INIG)</u>
<u>Maternal Child Nurses' Interest Group (MCNIG)</u>
<u>Men in Nursing Interest Group (MINIG)</u>
<u>Mental Health Nursing Interest Group (MHNIG)</u>
<u>Occupational Health Nurses Interest Group (OHNIG)</u>
<u>Ontario Association of Rehabilitation Nurses (OARN)</u>
<u>Ontario Correctional Nurses' Interest Group (OCNIG)</u>
<u>Ontario Family Practice Nurses (OFPN)</u>
<u>Ontario Nurses for the Environment Interest Group (ONEIG)</u>
<u>Ontario Nursing Informatics Group (ONIG)</u>
<u>Ontario PeriAnesthesia Nurses Association (OPANA)</u>
<u>Ontario Woundcare Interest Group (OntWIG)</u>
<u>Palliative Care Nurses Interest Group (PCNIG)</u>
<u>Parish Nursing Interest Group (PNIG)</u>
<u>Pediatric Nurses Interest Group (PedNIG)</u>
<u>Rainbow Nursing Interest Group (RNIG)</u>
<u>RN First Assistant Interest Group (RNFA)</u>
<u>Staff Nurse Interest Group (SNIG)</u>
<u>Telepractice Nursing Interest Group (TPNIG)</u>

Appendix G. Organizational Behaviour Scale

OCBI Items

1. Help others who have been absent.
2. Willingly give your time to help others who have work-related problems.
3. Adjust your work schedule to accommodate other employees' requests for time off.
4. Go out of the way to make newer employees feel welcome in the work group.
5. Show genuine concern and courtesy toward coworkers, even under the most trying business or personal situations.
6. Give up time to help others who have work or nonwork problems.
7. Assist others with their duties.
8. Share personal property with others to help their work.

OCBO Items

1. Attend functions that are not required but that help the organizational image.
2. Keep up with developments in the organization.
3. Defend the organization when other employees criticize it.
4. Show pride when representing the organization in public.
5. Offer ideas to improve the functioning of the organization.
6. Express loyalty toward the organization.
7. Take action to protect the organization from potential problems.
8. Demonstrate concern about the image of the organization.

Appendix H. Workplace Affective Commitment Multidimensional Questionnaire (SHORT)

Your commitment

The following items express what people may feel about themselves as members of their organization (enterprise XYZ). Please circle the choice which best reflect your personal opinion.

		Totally Disagree	Partly Disagree	Neutral	Partly Agree	Totally Agree
1	I am proud to say that I work for this organization (COMPANY XYZ)	1	2	3	4	5
2	I like the values my immediate supervisor conveys	1	2	3	4	5
3	I'm happy to work with my co-workers (in my unit)	1	2	3	4	5
4	I really care about the satisfaction of COMPANY XYZ customers	1	2	3	4	5
5	I'm proud to say this is my profession	1	2	3	4	5
6	Work is a priority in my life	1	2	3	4	5

		Totally Disagree	Partly Disagree	Neutral	Partly Agree	Totally Agree
7	I find the tasks I perform in my current position stimulating	1	2	3	4	5
8	I would like to hold increasingly important positions throughout my career	1	2	3	4	5
9	This organization (COMPANY XYZ) means a lot to me	1	2	3	4	5
10.	I feel privileged to work with someone like my immediate supervisor	1	2	3	4	5
11	My co-workers (in my unit) make me feel like going to work	1	2	3	4	5
12	Delivering quality products and/or services to COMPANY XYZ customers is a major source of satisfaction for me	1	2	3	4	5
13	I would be happy to practice this profession all my life	1	2	3	4	5
14	I find the tasks I perform in my current position rewarding	1	2	3	4	5

		Totally Disagree	Partly Disagree	Neutral	Partly Agree	Totally Agree
15	It is important for me to move up the ranks or obtain promotions.	1	2	3	4	5
16	One of the most satisfying things in my life is the fact that I work	1	2	3	4	5
17	I don't like working for this organization (COMPANY XYZ)	1	2	3	4	5
18	When I talk about my immediate supervisor to my friends, I describe him/her as a great person to work with	1	2	3	4	5
19	When I talk about my co-workers (in my unit) to my friends, I describe them as great people to work with	1	2	3	4	5
20	In my opinion, the satisfaction of COMPANY XYZ customers is a priority	1	2	3	4	5
21	I like my profession too much to think about changing	1	2	3	4	5
22	Most of my personal objectives are focused on work	1	2	3	4	5

		Totally Disagree	Partly Disagree	Neutral	Partly Agree	Totally Agree
23	I don't like the tasks I perform in my current position	1	2	3	4	5
24	I feel it is important to plan one's career	1	2	3	4	5

Appendix I. WACMQ - Modifications for Use in Health Care

WACMQ - Modifications for Use in Health Care			
# Items	Specific Measure	Original Question	MODIFIED Question
		The following items express what people may feel about themselves as members of their organization (enterprise XYZ). Please circle the choice which best reflect your personal opinion.	The following items express what YOU may feel about yourself as a member of your organization.
1	Organization	I am proud to say that I work for this organization (COMPANY XYZ)	I am proud to say that I work for my organization
2	Supervisor	I like the values my immediate supervisor conveys	I like the values conveyed by the authority figure who conducts my performance evaluation
3	co-workers	I'm happy to work with my co-workers (in my unit)	I'm happy to work with my co-workers in my unit (includes interprofessional)
4	Patients	I really care about the satisfaction of COMPANY XYZ customers	I really care about the satisfaction of my organization's patients
9	Organization	This organization (COMPANY XYZ) means a lot to me	My organization means a lot to me
10	supervisor	I feel privileged to work with someone like my immediate supervisor	I feel privileged to work with someone like the authority figure who conducts my performance evaluation
11	co-workers	My co-workers (in my unit) make me feel like going to work	My co-workers in my unit (includes interprofessional) make me feel like going to work
12	patients	Delivering quality products and/or services to COMPANY XYZ customers is a major source of satisfaction for me	Delivering quality care and/or services to my organization's patients is a major source of satisfaction for me
13	profession	I would be happy to practice this profession all my life	I would be happy to practice this profession until retirement
17	organization	I don't like working for this organization (COMPANY XYZ)	I don't like working for my organization
18	supervisor	When I talk about my immediate supervisor to my friends, I describe him/her as a great person to work with	When I talk to my friends about the authority figure who conducts my performance evaluation, I describe him/her as a great person to work with

19	co-workers	When I talk about my co-workers (in my unit) to my friends, I describe them as great people to work with	When I talk to my friends about my co-workers in my unit (includes interprofessional), I describe them as great people to work with
20	patient	In my opinion, the satisfaction of COMPANY XYZ customers is a priority	In my opinion, the satisfaction of my organization's patients is a priority

Appendix J. Organizational Justice Scale

Procedural justice

The following items refer to the procedures used to arrive at your (outcome). To what extent:

1. Have you been able to express your views and feelings during those procedures?
2. Have you had influence over the (outcome) arrived at by those procedures?
3. Have those procedures been applied consistently?
4. Have those procedures been free of bias?
5. Have those procedures been based on accurate information?
6. Have you been able to appeal the (outcome) arrived at by those procedures?
7. Have those procedures upheld ethical and moral standards?

Distributive justice

The following items refer to your (outcome). To what extent:

1. Does your (outcome) reflect the effort you have put into your work?
2. Is your (outcome) appropriate for the work you have completed?
3. Does your (outcome) reflect what you have contributed to the organization?
4. Is your (outcome) justified, given your performance?

Interpersonal justice

The following items refer to (the authority figure who enacted the procedure). To what extent:

1. Has (he/she) treated you in a polite manner?
2. Has (he/she) treated you with dignity?
3. Has (he/she) treated you with respect?
4. Has (he/she) refrained from improper remarks or comments?

Informational justice

The following items refer to (the authority figure who enacted the procedure). To what extent:

1. Has (he/she) been candid in (his/her) communications with you?
 2. Has (he/she) explained the procedures thoroughly?
 3. Were (his/her) explanations regarding the procedures reasonable?
 4. Has (he/she) communicated details in a timely manner?
 5. Has (he/she) seemed to tailor (his/her) communications to individuals' specific needs?
-

Note. All items use a 5-point scale with anchors of 1 = *to a small extent* and 5 = *to a large extent*.

(Colquitt, 2001)

Appendix K. Perceived Organizational Support Questionnaire

1. The organization values my contribution to its well-being.
2. The organization fails to appreciate any extra effort from me.
3. The organization would ignore any complaint from me.
4. The organization really cares about my well-being.
5. Even if I did the best job possible, the organization would fail to notice.
6. The organization cares about my general satisfaction at work.
7. The organization shows very little concern for me.
8. The organization takes pride in my accomplishments at work.

Appendix L. Advance Notice Email

Jan 23 2015

Subject: Advance notice email: RN Workplace Survey and chance to Win \$100 VISA pre-paid gift card

Nurses are the largest group of health professionals among hospital staff and a fundamental component in the health sector. Little is known regarding how you feel about your work, your commitment, and the effect of perceived organizational support on workplace behaviours in health care. Researchers from the University of Toronto are interested in this area. Our research team is working with the Registered Nurses Association of Ontario to distribute this survey to RNs. Your input will be of great value.

We would like to invite you to complete a short survey. It will be distributed on **Friday January 30th, 2015**. The survey will require approximately **20 minutes** to complete, and includes questions regarding your perceptions of fairness in the workplace, perceived organizational support, commitment, behaviours, and some basic demographic information. Unfortunately you will not be able to start the survey, save your input, and return to the survey at a later time.

By completing and submitting your survey, you are consenting to participate in this study. You can discontinue the completion of the survey at any time, with no repercussions. Exiting the survey prior to completing it and-or pressing the "submit" button will erase your responses such that they will not be captured in the database. None of the survey questions can or will be used to identify you. The aggregated anonymous data will be viewed only by the research team from the University of Toronto.

As a small token of appreciation from us for your time, upon submitting your survey, you will have the opportunity to enter your name and email address for a chance to win one of three **\$100 pre-paid VISA gift cards**. Your personal information will not be linked with your survey answers. Once the winners are selected, all names and email addresses will be permanently deleted.

Please keep a look out for the opportunity to participate. Your input is of great value. If you have any questions regarding the survey or research, please feel free to contact Tyrone Perreira at ty.perreira@mail.utoronto.ca or 647-404-6744 for more details. If you have any questions concerning your rights as a participant of this study, please contact the University of Toronto's Office of Research Ethics (ethics.review@utoronto.ca or 416-946-3273).

Kindest Regards,

Tyrone A. Perreira PhD (c)
Institute for Health Policy, Management and Evaluation
Health Sciences Building, 155 College Street, Suite 425
Toronto, Ontario, M5T 3M6, Canada

Appendix M. Email Number 1

Jan 30th 2015

Subject: RN Workplace Questionnaire

Nurses are the largest group of health professionals and a fundamental component in the health sector. Little is known regarding how you feel about your work, your commitment, and the effect of perceived organizational support on workplace behaviours in health care. Researchers from the University of Toronto are interested in this area. Our research team is working with the Registered Nurses Association of Ontario to distribute this survey to RNs. This is a great opportunity to share your first hand insights regarding factors that are important to nurses. Your input will be of great value.

We would like to invite you to complete a short survey. The survey will require approximately **20 minutes** to complete, and includes questions regarding your perceptions of fairness in the workplace, perceived organizational support, commitment, behaviours, and some basic demographic information. Unfortunately you will not be able to start the survey, save your input, and return to the survey at a later time.

By completing and submitting your survey, you are consenting to participate in this study. You can discontinue the completion of the survey at any time, with no repercussions. Exiting the survey prior to completing it and-or pressing the "submit" button will erase your responses such that they will not be captured in the database. None of the survey questions can or will be used to identify you. The aggregated anonymous data will be viewed only by the research team from the University of Toronto.

As a small token of appreciation from us for your time, upon submitting your survey, you will have the opportunity to enter your name and email address for a chance to win one of three **\$100 pre-paid VISA gift cards**. This draw will occur one week after the survey closes. Your personal information will not be linked with your survey answers. Once the winners are selected, all names and email addresses will be permanently deleted.

To **start the survey**, please click here: <http://fluidsurveys.com/s/RNWorkplace/>

If you are experiencing problems with the URL, please copy and paste it into your web browser.

If you have any questions regarding the survey or research, please feel free to contact Tyrone Perreira at ty.perreira@mail.utoronto.ca or 647-404-6744 for more details. If you have any questions concerning your rights as a participant of this study, please contact the University of Toronto's Office of Research Ethics (ethics.review@utoronto.ca or 416-946-3273).

Kindest Regards,

Tyrone A. Perreira PhD (c)
Institute for Health Policy, Management and Evaluation
Health Sciences Building, 155 College Street, Suite 425
Toronto, Ontario, M5T 3M6, Canada

Appendix N. Email Number 2

Friday February 6, 2015

Subject: RN Workplace Questionnaire: Follow-up

Hello everyone, I just wanted to touch base with you to see if you had an opportunity to complete the RN Workplace Questionnaire. If you have already completed the survey, thank you very much. Your input is extremely valuable.

Nurses are the largest group of health professionals and a fundamental component in the health sector. Little is known regarding how you feel about your work, your commitment, and the effect of perceived organizational support on workplace behaviours in health care. Researchers from the University of Toronto are interested in this area. Our research team is working with the Registered Nurses Association of Ontario to distribute this survey to RNs. This is a great opportunity to share your first hand insights regarding factors that are important to nurses. Your input will be of great value.

We would like to invite you to complete a short survey. The survey will require approximately **20 minutes** to complete, and includes questions regarding your perceptions of fairness in the workplace, perceived organizational support, commitment, behaviours, and some basic demographic information. Unfortunately you will not be able to start the survey, save your input, and return to the survey at a later time.

By completing and submitting your survey, you are consenting to participate in this study. You can discontinue the completion of the survey at any time, with no repercussions. Exiting the survey prior to completing it and-or pressing the "submit" button will erase your responses such that they will not be captured in the database. None of the survey questions can or will be used to identify you. The aggregated anonymous data will be viewed only by the research team from the University of Toronto.

As a small token of appreciation from us for your time, upon submitting your survey, you will have the opportunity to enter your name and email address for a chance to win one of three **\$100 pre-paid VISA gift cards**. This draw will occur one week after the survey closes. Your personal information will not be linked with your survey answers. Once the winners are selected, all names and email addresses will be permanently deleted.

To **start the survey**, please click here: <http://fluidsurveys.com/s/RNWorkplace/>

If you are experiencing problems with the URL, please copy and paste it into your web browser.

If you have any questions regarding the survey or research, please feel free to contact Tyrone Perreira at ty.perreira@mail.utoronto.ca or 647-404-6744 for more details. If you have any questions concerning your rights as a participant of this study, please contact the University of Toronto's Office of Research Ethics (ethics.review@utoronto.ca or 416-946-3273).

Kindest Regards,

Tyrone A. Perreira PhD (c)
Institute for Health Policy, Management and Evaluation
Health Sciences Building, 155 College Street, Suite 425
Toronto, Ontario, M5T 3M6, Canada

Appendix O. Email Number 3

Feb 13, 2015

Subject: RN Workplace Survey: Still time to win one of three \$100 pre-paid VISA gift cards

I wanted to take a moment to thank all those who participated in the survey. Your input is greatly appreciated. As we communicated last week, the survey will soon be closing. For those who still wish to participate, we would love to hear from you.

The survey requires just a few minutes of your time to complete. Unfortunately you will not be able to start the survey, save your input, and return to the survey at a later time. All participants will be asked basic demographic information. Depending upon your responses, you may be asked additional questions regarding your perceptions of fairness, perceived organizational support, factors that motivate you, and workplace behaviours.

As a small token of appreciation from us for your time, upon submitting your survey, you will have the opportunity to enter your name and email address for a chance to win one of three \$100 pre-paid VISA gift cards. This draw will occur one week after the survey closes. Your personal information will not be linked with your survey answers. *Once the winners are selected, all names and email addresses will be permanently deleted.*

Nurses are the largest group of health professionals and a fundamental component in the health sector. Little is known regarding how you feel about your work, your commitment, and the effect of perceived organizational support on workplace behaviours in health care. Researchers from the University of Toronto are interested in this area. Our research team is working with the Registered Nurses Association of Ontario to distribute this survey to RNs. This is a great opportunity to share your first hand insights regarding factors that are important to nurses.

By completing and submitting your survey, you are consenting to participate in this study. You can discontinue the completion of the survey at any time, with no repercussions. Exiting the survey prior to completing it and-or pressing the "submit" button will erase your responses such that they will not be captured in the database.

None of the survey questions can or will be used to identify you. The aggregated anonymous data will be viewed only by the research team from the University of Toronto.

To **start the survey**, please click here: <http://fluidsurveys.com/s/RNWorkplace/>

If you are experiencing problems with the URL, please copy and paste it into your web browser.

If you have any questions regarding the survey or research, please feel free to contact Tyrone Perreira at ty.perreira@mail.utoronto.ca. If you have any questions concerning your rights as a participant of this study, please contact the University of Toronto's Office of Research Ethics (ethics.review@utoronto.ca or 416-946-3273).

Kindest Regards,

Tyrone A. Perreira PhD (c)
Institute for Health Policy, Management and Evaluation
Health Sciences Building, 155 College Street, Suite 425
Toronto, Ontario, M5T 3M6, Canada

Appendix P. Email Number 4

Feb 20, 2015

Subject: RN Workplace Survey Closing: LAST CHANCE to win a \$100 pre-paid VISA gift card

Hello everyone,

If you already completed the survey, thank you very much for participating.

The RN Workplace Survey will be **CLOSING** at **11:59 pm on Tuesday February 24, 2015**.

For those who still wish to participate, we would love to hear from you. The survey requires just a few minutes of your time to complete.

All participants will be asked basic demographic information. Depending upon your responses, you may be asked additional questions regarding your perceptions of fairness, perceived organizational support, factors that motivate you, and workplace behaviours. As a small token of appreciation from us for your time, upon submitting your survey, you will have the opportunity to enter your name and email address for a chance to win one of three \$100 pre-paid VISA gift cards. This draw will occur one week after the survey closes. Your personal information will not be linked with your survey answers. *Once the winners are selected, all names and email addresses will be permanently deleted.*

None of the survey questions can or will be used to identify you. The aggregated anonymous data will be viewed only by the research team from the University of Toronto.

To **start the survey**, please click here: <http://fluidsurveys.com/s/RNWorkplace/>

If you are experiencing problems with the URL, please copy and paste it into your web browser.

If you have any questions regarding the survey or research, please feel free to contact Tyrone Perreira at ty.perreira@mail.utoronto.ca. If you have any questions concerning your rights as a participant of this study, please contact the University of Toronto's Office of Research Ethics (ethics.review@utoronto.ca or 416-946-3273).

Kindest Regards,

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Institute for Health Policy, Management and Evaluation
Health Sciences Building, 155 College Street, Suite 425
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Appendix Q. Model Modification

Determination of goodness of fit was based on the accumulation of evidence across all the statistics/indices. The essence of SEM is to determine the fit between the restricted (predicted) covariance model (the hypothesized model), and the sample covariance matrix. If the model describes the data well, the values should be small and evenly distributed. The Standardized Residual (SR) matrix, often gives clues as to which original covariance or correlations are not well accounted for by the model (Schumacker & Lomax, 2004). Large residuals indicate misspecification in the model, affecting overall model fit. Any discrepancy between the two appears in the residual covariance matrix (Byrne, 2014). SRs greater than the absolute value of 3.29 are flags for possible concern, as in an average sample, SRs this high are unlikely to occur by chance (Field, 2009).

The modification index is the expected value that χ^2 would decrease by if such a parameter are to be included; large values indicate potentially useful parameters. Modifications suggested by the LISREL program in the output, suggest added paths to help address these high SRs. These measurement error covariances represent systematic, rather than random, measurement error in item responses, and may be attributed from characteristics specific to the respondents or the items. If they represent respondent characteristics, they may be indicative of bias such as social desirability, or yea-saying or nay-saying (systematic way of responding) (Byrne, 2014). Another potential reason for correlated errors is high degree of overlap in item content. In other words, items essentially ask the same question, even though worded differently (Byrne, 2014).

According to Byrne (2014), should one decide to re-specify or re-estimate the model, analyses would shift from confirmatory to exploratory. The term for this is ‘specification searches,’ as the analyses turns the focus to the detection of misfitting parameters in the originally hypothesized model (Byrne, 2014). The decision regarding whether or not to proceed with a specification search depends on whether adding the additional path makes theoretical/conceptual sense, and whether or not the re-specified model would lead to an overfitted model. Correlating errors that make substantive sense is done mainly in social psychological research (Byrne, 2014).

Appendix R. Z-test Results

Z-test to compare two proportion

Analysed: Sat Jul 04, 2015 @ 01:50

Age:

18-24

Inputs

	Sample 1	Sample 2
Sample Proportion	0.05	0.041
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.05	0.041	0.009
95% CI (asymptotic)	0.0336 - 0.0664	0.0398 - 0.0422	-0.006 - 0.024
z-value	1.2		
P-value	0.2398		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

25-29

Inputs

	Sample 1	Sample 2
Sample Proportion	0.105	0.1
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.105	0.1	0.00499999999999999
95% CI (asymptotic)	0.0819 - 0.1281	0.0982 - 0.1018	-0.0177 - 0.0277
z-value	0.4		
P-value	0.6658		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

30-34

Inputs

	Sample 1	Sample 2
Sample Proportion	0.093	0.095

Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.093	0.095	0.002
95% CI (asymptotic)	0.0711 - 0.1149	0.0932 - 0.0968	-0.0202 - 0.0242
z-value	0.2		
P-value	0.8597		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

35-39

Inputs

	Sample 1	Sample 2
Sample Proportion	0.071	0.097
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.071	0.097	0.026
95% CI (asymptotic)	0.0516 - 0.0904	0.0952 - 0.0988	0.0036 - 0.0484
z-value	2.3		
P-value	0.0227		
Interpretation	Statistically significant, reject null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

40-44

Inputs

	Sample 1	Sample 2
Sample Proportion	0.084	0.112
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.084	0.112	0.028

95% CI (asymptotic)	0.0631 - 0.1049	0.1101 - 0.1139	0.0042 - 0.0518
z-value	2.3		
P-value	0.0213		
Interpretation	Statistically significant, reject null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

45-49

Inputs

	Sample 1	Sample 2
Sample Proportion	0.126	0.137
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.126	0.137	0.011
95% CI (asymptotic)	0.101 - 0.151	0.1349 - 0.1391	-0.015 - 0.037
z-value	0.8		
P-value	0.407		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

50-54

Inputs

	Sample 1	Sample 2
Sample Proportion	0.157	0.14
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.157	0.14	0.017

95% CI (asymptotic)	0.1296 - 0.1844	0.1379 - 0.1421 -0.0093 - 0.0433
z-value	1.3	
P-value	0.2043	
Interpretation	Not significant, accept null hypothesis that sample proportions are equal	
n by pi	n * pi >5, test ok	

55-59

Inputs

	Sample 1	Sample 2
Sample Proportion	0.161	0.13
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.161	0.13	0.031
95% CI (asymptotic)	0.1333 - 0.1887	0.128 - 0.132	0.0055 - 0.0565
z-value	2.4		
P-value	0.017		
Interpretation	Statistically significant, reject null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

60-64

Inputs

	Sample 1	Sample 2
Sample Proportion	0.112	0.092
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.112	0.092	0.02

95% CI (asymptotic)	0.0882 - 0.1358	0.0902 - 0.0938 -0.0019 - 0.0419
z-value	1.8	
P-value	0.0731	
Interpretation	Not significant, accept null hypothesis that sample proportions are equal	
n by pi	n * pi >5, test ok	

>=65

Inputs

	Sample 1	Sample 2
Sample Proportion	0.04	0.046
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.04	0.046	0.006
95% CI (asymptotic)	0.0252 - 0.0548	0.0447 - 0.0473	-0.0098 - 0.0218
z-value	0.7		
P-value	0.4577		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Gender

Male

Inputs

	Sample 1	Sample 2
Sample Proportion	0.041	0.061
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
--	----------	----------	------------

Sample proportion	0.041	0.061	0.02
95% CI (asymptotic)	0.0261 - 0.0559	0.0595 - 0.0625	0.0019 - 0.0381
z-value	2.2		
P-value	0.0302		
Interpretation	Statistically significant, reject null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Female

Inputs

	Sample 1	Sample 2
Sample Proportion	0.959	0.939
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.959	0.939	0.02
95% CI (asymptotic)	0.9441 - 0.9739	0.9375 - 0.9405	0.0019 - 0.0381
z-value	2.2		
P-value	0.0302		
Interpretation	Statistically significant, reject null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Employment Status

Full-time

Inputs

	Sample 1	Sample 2
Sample Proportion	0.679	0.665
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.679	0.665	0.014
95% CI (asymptotic)	0.6438 - 0.7142	0.6621 - 0.6679	-0.0217 - 0.0497
z-value	0.8		
P-value	0.442		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Part-time

Inputs

	Sample 1	Sample 2
Sample Proportion	0.263	0.262
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.263	0.262	0.001
95% CI (asymptotic)	0.2298 - 0.2962	0.2593 - 0.2647	-0.0323 - 0.0343
z-value	0.1		
P-value	0.953		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Casual

Inputs

	Sample 1	Sample 2
Sample Proportion	0.058	0.072
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.058	0.072	0.014
95% CI (asymptotic)	0.0404 - 0.0756	0.0704 - 0.0736	-0.0055 - 0.0335
z-value	1.4		
P-value	0.1602		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Employers

One Employer

Inputs

	Sample 1	Sample 2
Sample Proportion	0.794	0.842
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.794	0.842	0.0479999999999999
95% CI (asymptotic)	0.7635 - 0.8245	0.8398 - 0.8442	0.0204 - 0.0756
z-value	3.4		
P-value	0.0007		
Interpretation	Statistically significant, reject null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Two - employers

Inputs

	Sample 1	Sample 2
Sample Proportion	0.182	0.138
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.182	0.138	0.044
95% CI (asymptotic)	0.1529 - 0.2111	0.1359 - 0.1401	0.0179 - 0.0701
z-value	3.3		
P-value	0.001		
Interpretation	Statistically significant, reject null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Three - Employers

Inputs

	Sample 1	Sample 2
Sample Proportion	0.023	0.02
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.023	0.02	0.003
95% CI (asymptotic)	0.0117 - 0.0343	0.0192 - 0.0208	-0.0076 - 0.0136
z-value	0.6		
P-value	0.5788		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

LHIN

Central

Inputs

	Sample 1	Sample 2
Sample Proportion	0.081	0.086
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.081	0.086	0.004999999999999999
95% CI (asymptotic)	0.0604 - 0.1016	0.0843 - 0.0877	-0.0162 - 0.0262
z-value	0.5		
P-value	0.6439		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Central East

Inputs

	Sample 1	Sample 2
Sample Proportion	0.089	0.084
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.089	0.084	0.004999999999999999
95% CI (asymptotic)	0.0675 - 0.1105	0.0823 - 0.0857	-0.016 - 0.026
z-value	0.5		
P-value	0.6405		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Central West

Inputs

	Sample 1	Sample 2
Sample Proportion	0.038	0.033
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.038	0.033	0.005
95% CI (asymptotic)	0.0236 - 0.0524	0.0319 - 0.0341	-0.0085 - 0.0185
z-value	0.7		
P-value	0.4684		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Champlain

Inputs

	Sample 1	Sample 2
Sample Proportion	0.12	0.106
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.12	0.106	0.014
95% CI (asymptotic)	0.0955 - 0.1445	0.1041 - 0.1079	-0.0093 - 0.0373
z-value	1.2		
P-value	0.2387		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Erie St Clair

Inputs

	Sample 1	Sample 2
Sample Proportion	0.028	0.046
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.028	0.046	0.018
95% CI (asymptotic)	0.0156 - 0.0404	0.0447 - 0.0473	0.0022 - 0.0338
z-value	2.2		
P-value	0.0258		
Interpretation	Statistically significant, reject null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Hamilton Niagara Haldimand Brant

Inputs

	Sample 1	Sample 2
Sample Proportion	0.062	0.108
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.062	0.108	0.046
95% CI (asymptotic)	0.0438 - 0.0802	0.1061 - 0.1099	0.0226 - 0.0694
z-value	3.8		
P-value	0.0001		
Interpretation	Statistically significant, reject null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Mississauga Halton

Inputs

	Sample 1	Sample 2
Sample Proportion	0.072	0.068
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.072	0.068	0.003999999999999999
95% CI (asymptotic)	0.0525 - 0.0915	0.0665 - 0.0695	-0.015 - 0.023
z-value	0.4		
P-value	0.6806		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

North East

Inputs

	Sample 1	Sample 2
Sample Proportion	0.05	0.054
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.05	0.054	0.004
95% CI (asymptotic)	0.0336 - 0.0664	0.0526 - 0.0554	-0.0131 - 0.0211
z-value	0.5		
P-value	0.6464		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

North Simcoe Muskoka

Inputs

	Sample 1	Sample 2
Sample Proportion	0.033	0.034
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.033	0.034	0.001
95% CI (asymptotic)	0.0195 - 0.0465	0.0329 - 0.0351	-0.0127 - 0.0147
z-value	0.1		
P-value	0.8863		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

North West

Inputs

	Sample 1	Sample 2
Sample Proportion	0.04	0.026
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.04	0.026	0.014
95% CI (asymptotic)	0.0252 - 0.0548	0.025 - 0.027	0.0019 - 0.0261
z-value	2.3		
P-value	0.0228		
Interpretation	Statistically significant, reject null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

South East

Inputs

	Sample 1	Sample 2
Sample Proportion	0.05	0.046
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.05	0.046	0.004
95% CI (asymptotic)	0.0336 - 0.0664	0.0447 - 0.0473	-0.0118 - 0.0198
z-value	0.5		
P-value	0.6208		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

South West

Inputs

	Sample 1	Sample 2
Sample Proportion	0.109	0.087
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.109	0.087	0.022
95% CI (asymptotic)	0.0855 - 0.1325	0.0853 - 0.0887	7e-04 - 0.0433
z-value	2		
P-value	0.0432		
Interpretation	Statistically significant, reject null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Toronto Central

Inputs

	Sample 1	Sample 2
Sample Proportion	0.176	0.175
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.176	0.175	0.001
95% CI (asymptotic)	0.1473 - 0.2047	0.1727 - 0.1773	-0.0277 - 0.0297
z-value	0.1		
P-value	0.9456		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Waterloo Wellington

Inputs

	Sample 1	Sample 2
Sample Proportion	0.05	0.046
Sample size	676	104298
Significance level	0.05	
1- or 2-tailed test	2-tailed	

Results

	Sample 1	Sample 2	Difference
Sample proportion	0.05	0.046	0.004
95% CI (asymptotic)	0.0336 - 0.0664	0.0447 - 0.0473	-0.0118 - 0.0198
z-value	0.5		
P-value	0.6208		
Interpretation	Not significant, accept null hypothesis that sample proportions are equal		
n by pi	n * pi >5, test ok		

Appendix S. Univariate Summary Statistics

Var	Mean	SD	Skew	Kurt	Min	Freq.	Max	Freq.
JD1	3.132	1.110	-0.032	-0.471	1.120	71	5.254	58
JD2	3.104	1.089	-0.046	-0.421	1.086	66	5.309	46
JD3	2.923	1.120	0.025	-0.511	1.020	88	5.228	42
JD4	3.195	1.102	-0.058	-0.432	1.180	70	5.341	55
JP1	3.209	1.191	-0.056	-0.646	1.078	74	5.178	96
JP2	2.914	1.124	0.034	-0.524	1.041	94	5.231	42
JP3	2.939	1.136	0.039	-0.539	1.065	97	5.211	48
JP4	2.993	1.145	0.016	-0.546	1.065	91	5.249	51
JP5	3.114	1.097	-0.024	-0.448	1.151	75	5.283	51
JP6	2.760	1.212	0.133	-0.703	1.036	147	5.285	41
JP7	3.228	1.154	-0.043	-0.573	1.173	76	5.231	83
JInper1	3.962	1.087	-0.442	-0.697	1.440	28	5.145	256
JInper2	3.871	1.149	-0.400	-0.769	1.376	38	5.157	244
JInper3	3.833	1.185	-0.398	-0.803	1.305	41	5.153	245
JInper4	3.843	1.217	-0.420	-0.854	1.327	48	5.158	258
JInfo1	3.630	1.139	-0.217	-0.656	1.303	46	5.197	161
JInfo2	3.340	1.232	-0.102	-0.728	1.145	76	5.228	121
JInfo3	3.389	1.207	-0.107	-0.700	1.217	74	5.242	121
JInfo4	3.185	1.264	-0.041	-0.770	1.076	94	5.218	105
Jinfo5	3.207	1.274	-0.048	-0.781	1.087	95	5.239	108
POS1	4.592	1.877	-0.080	-0.672	1.163	66	7.664	96
POS2_R	3.598	1.967	0.093	-0.772	0.608	119	7.190	66
POS3_R	4.290	1.870	-0.061	-0.627	0.699	53	7.407	89

POS4	4.081	1.932	0.016	-0.693	0.845	88	7.540	70
POS5_R	3.936	1.935	0.007	-0.726	0.660	85	7.249	82
POS6	3.942	1.903	0.058	-0.684	0.891	101	7.538	57
POS7_R	4.065	1.920	-0.010	-0.731	0.780	82	7.292	87
POS8	4.220	1.817	-0.012	-0.650	1.033	75	7.384	77
ACorg1	3.930	1.098	-0.433	-0.740	1.420	30	5.124	256
ACsup1	3.491	1.262	-0.203	-0.858	1.145	67	5.153	176
ACco1	4.339	0.912	-0.799	-0.422	1.434	5	5.089	374
ACpt1	4.791	0.527	-2.063	2.931	2.547	3	5.020	564
ACprof1	4.672	0.709	-1.640	1.413	2.117	6	5.041	522
ACwrk1	3.938	1.032	-0.380	-0.587	1.406	20	5.151	226
ACtsk1	4.043	0.995	-0.438	-0.561	1.532	18	5.148	251
ACcar1	3.857	1.145	-0.419	-0.791	1.306	34	5.100	256
ACorg2	3.750	1.085	-0.287	-0.659	1.296	29	5.124	193
ACsup2	3.312	1.335	-0.132	-0.955	1.060	93	5.133	163
ACco2	4.012	1.061	-0.491	-0.674	1.405	21	5.121	273
ACpt2	4.738	0.582	-1.737	1.756	2.404	3	5.027	535
ACprof2	4.275	1.077	-0.920	-0.397	1.533	25	5.090	403
ACtsk2	4.142	0.949	-0.490	-0.521	1.666	16	5.143	275
ACcar2	3.234	1.248	-0.068	-0.774	1.084	85	5.156	119
ACwrk2	3.925	1.025	-0.366	-0.568	1.292	15	5.147	220
ACorg3_r	3.951	1.234	-0.618	-0.776	1.133	34	5.088	324
ACsup3	3.388	1.328	-0.172	-0.948	1.072	84	5.142	175
ACco3	4.138	1.014	-0.595	-0.611	1.514	17	5.112	309
ACpt3	4.435	0.909	-1.023	-0.160	1.905	17	5.084	426

ACprof3	3.885	1.162	-0.461	-0.762	1.174	27	5.114	266
ACwrk3	3.105	1.091	-0.037	-0.430	0.967	52	5.187	58
ACtsk3_R	3.930	1.109	-0.464	-0.714	1.150	18	5.108	265
ACcar3	4.266	0.804	-0.567	-0.560	1.713	4	5.047	309
OCBI1	4.064	0.817	-0.320	-0.424	1.735	8	5.076	211
OCBI2	4.132	0.765	-0.326	-0.581	1.661	3	5.033	233
OCBI3	3.697	0.897	-0.155	-0.332	1.341	12	5.076	125
OCBI4	4.420	0.735	-0.715	-0.410	2.118	6	5.055	360
OCBI5	4.413	0.664	-0.601	-0.510	2.071	2	5.025	338
OCBI6	3.923	0.864	-0.247	-0.503	1.491	8	5.057	185
OCBI7	4.200	0.728	-0.341	-0.587	1.896	4	5.035	247
OCBI8	3.386	1.156	-0.130	-0.630	1.093	50	5.134	125
OCBO1	2.964	1.006	-0.006	-0.309	1.046	59	5.164	32
OCBO2	3.889	0.791	-0.205	-0.191	1.375	3	5.070	141
OCBO3	3.232	0.980	-0.042	-0.241	1.131	36	5.070	64
OCBO4	3.938	0.966	-0.351	-0.583	1.435	14	5.094	218
OCBO5	3.629	0.917	-0.144	-0.336	1.200	11	5.068	117
OCBO6	3.783	0.959	-0.242	-0.458	1.323	14	5.107	162
OCBO7	3.756	0.971	-0.233	-0.508	1.268	14	5.080	166
OCBO8	3.692	0.989	-0.211	-0.497	1.196	15	5.082	154

Appendix T. Normality

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
GMJD	.116	676	.000	.955	676	.000
GMJP	.075	676	.000	.974	676	.000
GMJInper	.180	676	.000	.869	676	.000
GMPOS	.043	676	.005	.981	676	.000
GMJInfo	.120	676	.000	.949	676	.000
GMACorg	.146	676	.000	.904	676	.000
GMACsup	.102	676	.000	.929	676	.000
GMACco	.181	676	.000	.840	676	.000
GMACpt	.302	676	.000	.703	676	.000
GMACprof	.202	676	.000	.826	676	.000
GMACwrk	.118	676	.000	.957	676	.000
GMACtsk	.149	676	.000	.892	676	.000
GMACcar	.108	676	.000	.954	676	.000
GMOCBI	.079	676	.000	.967	676	.000
GMOCBO	.067	676	.000	.985	676	.000

a. Lilliefors Significance Correction

Appendix U. Correlation Matrix for Justice Measures

Correlation Matrix										
	JD1	JD2	JD3	JD4	JP1	JP2	JP3	JP4	JP5	JP6
JD1	1.000									
JD2	0.855	1.000								
JD3	0.818	0.893	1.000							
JD4	0.839	0.897	0.875	1.000						
JP1	0.667	0.693	0.683	0.735	1.000					
JP2	0.642	0.683	0.671	0.747	0.823	1.000				
JP3	0.603	0.659	0.632	0.681	0.741	0.763	1.000			
JP4	0.594	0.657	0.673	0.705	0.745	0.721	0.774	1.000		
JP5	0.667	0.710	0.710	0.772	0.780	0.779	0.800	0.869	1.000	
JP6	0.555	0.572	0.608	0.610	0.700	0.710	0.655	0.674	0.690	1.000
JP7	0.579	0.664	0.666	0.699	0.721	0.684	0.697	0.794	0.797	0.759
JInper1	0.500	0.535	0.548	0.602	0.689	0.577	0.594	0.680	0.656	0.586
JInper2	0.520	0.553	0.576	0.621	0.708	0.598	0.604	0.700	0.690	0.593
JInper3	0.512	0.540	0.572	0.606	0.702	0.587	0.599	0.703	0.679	0.595
JInper4	0.426	0.471	0.493	0.536	0.610	0.495	0.567	0.624	0.603	0.515
JInfo1	0.535	0.565	0.583	0.610	0.716	0.611	0.621	0.712	0.717	0.569
JInfo2	0.540	0.559	0.571	0.599	0.715	0.655	0.658	0.659	0.691	0.583
JInfo3	0.592	0.624	0.623	0.689	0.742	0.693	0.732	0.740	0.772	0.619
JInfo4	0.549	0.562	0.585	0.626	0.674	0.635	0.685	0.675	0.718	0.586
JInfo5	0.563	0.595	0.608	0.652	0.720	0.661	0.676	0.717	0.741	0.600
JP7	1.000									
JInper1	0.661	1.000								
JInper2	0.674	0.960	1.000							
JInper3	0.665	0.953	0.976	1.000						
JInper4	0.591	0.896	0.893	0.890	1.000					
JInfo1	0.655	0.839	0.856	0.852	0.777	1.000				
JInfo2	0.651	0.723	0.735	0.721	0.648	0.802	1.000			
JInfo3	0.706	0.774	0.779	0.770	0.702	0.825	0.894	1.000		
JInfo4	0.641	0.745	0.740	0.741	0.668	0.798	0.799	0.849	1.000	
JInfo5	0.673	0.777	0.789	0.795	0.723	0.837	0.815	0.883	0.882	1.000

Appendix V. Correlation Matrix of Justice Independent Variables

	JD	JP	JInper	JInfo
JD	1.000			
JP	0.829 (0.014) 60.793	1.000		
JInper	0.613 (0.025) 24.660	0.761 (0.017) 44.114	1.000	
JInfo	0.699 (0.021) 33.295	0.858 (0.012) 73.195	0.854 (0.011) 75.792	1.000

Appendix W. Model Misspecification for Justice Measures

To reiterate, model modification was not performed. However, if I wanted to adopt a more conservative approach, in addition to reviewing the goodness of fit indices to establish the extent to which the hypothesized model fits the sample data, areas of misfit in the model can be identified by reviewing the residuals and modification indices generated by LISREL. In Table W-1, one can conclude that there are numerous values greater than 3.29, indicative of possible misfit in the model. To address, additional paths within the model would need to be added and/or the potential deletion of observed variables.

Table W-1. Standardized Residuals for Justice Measures

	JD1	JD2	JD3	JD4	JP1	JP2	JP3	JP4	JP5	JP6
JD1	0.000									
JD2	2.385	0.000								
JD3	-1.159	2.556	0.000							
JD4	-0.158	-1.735	-1.614	0.000						
JP1	1.765	0.356	0.906	4.329	0.000					
JP2	0.898	0.608	0.895	6.117	8.766	0.000				
JP3	-1.731	-1.333	-2.021	0.829	-0.569	3.357	0.000			
JP4	-4.757	-4.716	-1.356	0.281	-4.874	-5.783	1.163	0.000		
JP5	-1.168	-2.457	-0.333	4.853	-4.971	-2.319	1.273	7.557	0.000	
JP6	-1.147	-3.133	0.375	-0.240	1.663	3.610	-1.147	-2.645	-4.421	0.000
JP7	-3.344	-0.908	0.607	2.290	-2.867	-5.169	-3.611	3.791	0.798	7.910
JInper1	-1.893	-3.061	-0.359	3.694	3.562	-4.101	-2.759	1.732	-2.822	0.574
JInper2	-1.344	-3.032	1.128	5.265	4.422	-3.836	-3.220	2.546	-0.997	0.294
JInper3	-1.735	-3.976	1.022	3.688	4.145	-4.326	-3.291	3.136	-1.697	0.603
JInper4	-3.700	-3.945	-1.474	0.707	0.567	-5.798	-1.324	0.516	-2.678	-1.244
JInfo1	-1.192	-2.350	0.108	1.338	3.471	-3.381	-2.564	2.075	0.467	-1.973
JInfo2	-1.110	-3.042	-0.902	0.317	3.202	-0.363	-0.103	-2.582	-2.241	-1.285
JInfo3	0.276	-0.770	0.601	5.949	2.927	-0.263	3.179	1.278	2.116	-1.252
JInfo4	-0.770	-3.200	-0.168	2.107	-0.262	-2.152	1.635	-1.631	-0.100	-1.362
JInfo5	-1.212	-2.601	0.001	2.921	1.665	-2.197	-0.932	-0.133	-0.343	-1.948

	JP7	JInper1	JInper2	JInper3	JInper4	JInfo1	JInfo2	JInfo3	JInfo4	JInfo5
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
JP7	0.000									
JInper1	2.267	0.000								
JInper2	2.490	-0.316	0.000							
JInper3	1.938	-1.002	0.450	0.000						
JInper4	0.140	4.395	-1.493	-0.690	0.000					
JInfo1	-0.089	10.094	11.759	11.273	6.726	0.000				
JInfo2	-0.626	-2.298	-3.049	-4.052	-3.805	-0.275	0.000			
JInfo3	0.885	-1.574	-4.060	-4.533	-2.997	-5.183	9.528	0.000		
JInfo4	-1.695	-0.441	-3.127	-2.313	-2.570	-1.647	-2.180	-1.871	0.000	
JInfo5	-1.163	0.161	-0.357	1.179	-0.134	-0.037	-5.370	-1.197	7.452	0.000

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -5.798
Median Standardized Residual = -0.204
Largest Standardized Residual = 11.759

Appendix X. Correlation Matrix for POS Measures

	POS1	POS2_Rec	POS3_Rec	POS4	POS5_Rec	POS6	POS7_Rec	POS8
POS1	1.000							
POS2_Rec	0.855	1.000						
POS3_Rec	0.818	0.893	1.000					
POS4	0.839	0.897	0.875	1.000				
POS5_Rec	0.667	0.693	0.683	0.735	1.000			
POS6	0.642	0.683	0.671	0.747	0.823	1.000		
POS7_Rec	0.603	0.659	0.632	0.681	0.741	0.763	1.000	
POS8	0.594	0.657	0.673	0.705	0.745	0.721	0.774	1.000

Total Variance = 8.000 Generalized Variance = 0.111826D-03

Largest Eigenvalue = 6.124 Smallest Eigenvalue = 0.090

Condition Number = 8.236

Appendix Y. Model Misspecification for POS Measures

In Table Y-1, examining the number of values greater than 3.29, one can conclude that there are numerous values indicative of possible misfit in the model. To address, additional paths within the model would need to be added and/or the potential deletion of observed variables.

Table Y-1. *Standardized Residual for POS*

	POS1	POS2_Rec	POS3_Rec	POS4	POS5_Rec	POS6	POS7_Rec	POS8
	-----	-----	-----	-----	-----	-----	-----	-----
POS1	0.000							
POS2_Rec	6.001	0.000						
POS3_Rec	1.942	7.722	0.000					
POS4	1.356	2.427	0.947	0.000				
POS5_Rec	-2.837	-7.236	-5.400	-2.777	0.000			
POS6	-4.726	-7.953	-6.328	-0.141	14.490	0.000		
POS7_Rec	-4.520	-5.198	-5.763	-3.864	10.099	11.660	0.000	
POS8	-6.308	-6.983	-2.404	-1.947	9.977	8.438	13.062	0.000

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -7.953
 Median Standardized Residual = 0.000
 Largest Standardized Residual = 14.490

Appendix AA. Correlation Matrix of Affective Commitment Independent Variables

	ACorg	ACsup	ACco	ACpt	ACprof	ACwrk	ACtsk	ACcar
ACorg	1.000							
ACsup	0.612 (0.027) 22.852	1.000						
ACco	0.456 (0.033) 13.638	0.340 (0.036) 9.481	1.000					
ACpt	0.463 (0.036) 12.978	0.244 (0.040) 6.048	0.482 (0.034) 14.138	1.000				
ACprof	0.628 (0.028) 22.299	0.375 (0.037) 10.239	0.472 (0.034) 13.959	0.707 (0.026) 27.051	1.000			
ACwrk	0.401 (0.040) 10.129	0.240 (0.042) 5.688	0.241 (0.043) 5.659	0.516 (0.038) 13.763	0.644 (0.031) 20.528	1.000		
ACtsk	0.613 (0.028) 21.714	0.351 (0.037) 9.604	0.518 (0.031) 16.514	0.613 (0.030) 20.461	0.736 (0.023) 31.810	0.490 (0.037) 13.263	1.000	
ACcar	0.177 (0.042) 4.208	0.130 (0.041) 3.141	0.072 (0.042) 1.713	0.141 (0.044) 3.216	0.077 (0.044) 1.754	0.414 (0.040) 10.250	0.051 (0.043) 1.176	1.000

Appendix BB. Model Misspecification for Affective Commitment

In Table BB-1, examining the number of values greater than 3.29, one can conclude that there are numerous values indicative of possible misfit in the model.

Table BB-1. Standardized Residuals for Affective Commitment

	ACorg1	ACsup1	ACco1	ACpt1	ACprof1	ACwrk1	ACtsk1	ACcar1	ACorg2	ACsup2
ACorg1	0.000									
ACsup1	4.363	0.000								
ACco1	-0.009	-2.308	0.000							
ACpt1	-3.184	-2.420	1.964	0.000						
ACprof1	2.844	1.317	4.140	5.118	0.000					
ACwrk1	-2.095	-1.207	-1.177	1.846	5.969	0.000				
ACtsk1	-1.694	-0.136	3.209	-0.617	3.600	2.415	0.000			
ACcar1	-1.779	-3.135	0.302	-0.921	5.397	-1.644	4.368	0.000		
ACorg2	1.402	-0.429	-0.340	0.044	5.390	6.813	4.097	5.664	0.000	
ACsup2	-1.226	-1.631	-1.937	-1.401	2.863	2.046	2.515	0.170	0.933	0.000
ACco2	3.690	1.891	-2.485	0.530	1.998	2.239	4.434	3.279	4.508	6.764
ACpt2	-0.170	-2.526	2.565	0.559	4.205	4.062	-0.226	0.794	2.569	0.224
ACprof2	-2.038	0.100	-0.419	-2.631	-5.824	-4.193	-1.522	-2.127	1.782	-0.980
ACtsk2	-4.122	-1.411	-2.708	-4.062	-0.296	-1.013	1.188	-2.968	-0.142	-1.539
ACcar2	-1.634	-0.024	-2.945	-3.560	2.384	-1.523	1.622	1.093	2.336	2.206
ACwrk2	0.863	-1.203	0.925	-0.675	0.838	0.701	3.125	-1.805	7.687	1.276
ACorg3_R	2.415	4.100	-1.118	-5.764	0.742	-2.978	-1.126	-2.288	-4.016	2.212
ACsup3	-5.553	1.035	-1.896	-3.441	0.786	-1.434	-0.902	-0.452	-4.095	0.969
ACco3	-4.926	-3.198	1.964	-1.279	-0.140	0.715	3.435	0.628	-2.007	-2.395
ACpt3	7.258	5.267	-0.989	2.602	3.317	0.717	-2.535	1.237	6.491	5.127
ACprof3	-4.112	-1.535	-1.250	-5.986	-0.867	-0.996	-5.330	-0.291	-1.866	-0.499
ACwrk3	-5.130	-3.461	-3.547	-5.924	-1.358	0.429	-3.204	0.947	0.757	-0.143
ACtsk3_R	2.907	3.182	-0.404	-1.457	0.091	-3.661	-1.333	-2.102	1.378	2.240
ACcar3	-0.610	-2.906	2.811	5.342	5.009	3.233	2.269	1.769	3.304	-1.833
	ACco2	ACpt2	ACprof2	ACtsk2	ACcar2	ACwrk2	ACorg3_R	ACsup3	ACco3	ACpt3
ACco2	0.000									
ACpt2	0.324	0.000								
ACprof2	2.304	-0.304	0.000							
ACtsk2	-0.452	3.716	4.275	0.000						
ACcar2	-0.748	-2.476	-4.341	-0.312	0.000					
ACwrk2	3.935	1.629	0.782	1.812	-0.877	0.000				
ACorg3_R	3.422	-6.963	0.980	-0.154	-2.389	1.017	0.000			
ACsup3	1.950	-3.118	-0.795	-2.962	1.177	0.193	-0.470	0.000		
ACco3	0.495	-1.231	-3.972	-3.195	-3.489	1.275	-2.342	-0.645	0.000	
ACpt3	-0.874	-3.085	1.196	2.147	1.074	-0.034	4.129	3.253	-2.837	0.000
ACprof3	0.346	-3.176	6.622	-3.160	-1.770	0.861	-2.423	-1.989	-2.055	0.518
ACwrk3	-2.732	-2.264	-2.443	-0.273	3.835	-1.128	-6.547	-1.339	-2.400	-3.219
ACtsk3_R	0.596	-1.053	1.215	-0.063	-1.738	-0.059	8.256	2.220	-1.517	2.276
ACcar3	2.489	7.192	3.636	2.836	-3.632	5.476	-0.124	-0.229	2.500	5.922

	ACprof3	ACwrk3	ACtsk3_R	ACcar3
	-----	-----	-----	-----
ACprof3	0.000			
ACwrk3	3.723	0.000		
ACtsk3_R	-1.259	-3.240	0.000	
ACcar3	2.763	3.832	0.959	0.000

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -6.963

Correlation Matrix

	OCBI1	OCBI2	OCBI3	OCBI4	OCBI5	OCBI6	OCBI7	OCBI8	OCBO1	OCBO2
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
OCBI1	1.000									
OCBI2	0.691	1.000								
OCBI3	0.475	0.466	1.000							
OCBI4	0.472	0.544	0.374	1.000						
OCBI5	0.456	0.621	0.318	0.703	1.000					
OCBI6	0.496	0.705	0.477	0.543	0.619	1.000				
OCBI7	0.488	0.488	0.387	0.463	0.472	0.571	1.000			
OCBI8	0.349	0.396	0.391	0.314	0.368	0.525	0.535	1.000		
OCBO1	0.186	0.255	0.253	0.239	0.257	0.230	0.120	0.256	1.000	
OCBO2	0.221	0.299	0.148	0.246	0.346	0.183	0.189	0.132	0.481	1.000
OCBO3	0.187	0.275	0.225	0.316	0.348	0.242	0.174	0.164	0.512	0.469
OCBO4	0.235	0.322	0.198	0.350	0.350	0.231	0.191	0.152	0.470	0.481
OCBO5	0.225	0.290	0.136	0.313	0.258	0.225	0.227	0.233	0.370	0.431
OCBO6	0.196	0.248	0.210	0.329	0.326	0.220	0.168	0.191	0.466	0.418
OCBO7	0.255	0.298	0.250	0.356	0.329	0.281	0.236	0.195	0.345	0.453
OCBO8	0.267	0.332	0.265	0.387	0.328	0.293	0.249	0.220	0.439	0.527

Appendix CC. Correlation Matrix for

OCB

	OCBO3	OCBO4	OCBO5	OCBO6	OCBO7	OCBO8
	-----	-----	-----	-----	-----	-----
OCBO3	1.000					
OCBO4	0.734	1.000				
OCBO5	0.323	0.412	1.000			
OCBO6	0.715	0.767	0.438	1.000		
OCBO7	0.435	0.464	0.528	0.497	1.000	
OCBO8	0.569	0.604	0.524	0.606	0.788	1.000

Appendix DD. Correlation Matrix for OCB Independent Variables

Correlation Matrix of Independent Variables		
	OCBI	OCBO
OCBI	1.000	
OCBO	0.471 (0.034) 13.889	1.000

Appendix EE. Model Misspecification for OCB

In Table EE -1, examining the number of values greater than the absolute value of 3.29, one can conclude that there are numerous values indicative of possible misfit in the model.

Table EE-1. *Standardized Residuals for OCB*

	OCBI1	OCBI2	OCBI3	OCBI4	OCBI5	OCBI6	OCBI7	OCBI8	OCBO1	OCBO2
OCBI1	0.000									
OCBI2	9.121	0.000								
OCBI3	3.844	-0.225	0.000							
OCBI4	-1.465	-4.076	-1.330	0.000						
OCBI5	-4.726	-0.794	-5.862	11.000	0.000					
OCBI6	-5.712	3.157	1.072	-2.918	0.240	0.000				
OCBI7	1.366	-4.866	0.613	-0.380	-1.737	2.349	0.000			
OCBI8	-1.807	-4.395	3.134	-3.874	-2.697	4.617	7.528	0.000		
OCBO1	-0.273	0.794	2.856	1.290	1.516	0.117	-1.983	3.010	0.000	
OCBO2	0.622	2.071	-0.436	1.327	4.238	-1.753	-0.044	-0.838	5.177	0.000
OCBO3	-2.684	-1.500	0.461	1.839	2.512	-2.582	-2.558	-1.414	2.587	-0.971
OCBO4	-1.479	-0.204	-0.804	2.687	2.161	-3.873	-2.473	-2.171	-1.537	-2.011
OCBO5	1.202	2.287	-0.425	3.880	1.810	0.259	1.555	2.511	1.486	3.622
OCBO6	-2.848	-3.354	-0.304	1.967	1.292	-4.181	-3.206	-0.822	-1.484	-5.953
OCBO7	1.035	1.155	2.151	4.281	3.013	0.720	0.773	0.551	-2.713	1.806
OCBO8	0.211	0.894	1.775	4.424	1.761	-0.475	0.047	0.421	-1.816	2.609

	OCBO3	OCBO4	OCBO5	OCBO6	OCBO7	OCBO8
OCBO3	0.000					
OCBO4	7.563	0.000				
OCBO5	-7.311	-3.918	0.000			
OCBO6	5.996	9.282	-1.831	0.000		
OCBO7	-7.095	-8.049	6.640	-4.890	0.000	
OCBO8	-5.315	-5.910	4.461	-4.861	16.887	0.000

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -8.049
Median Standardized Residual = 0.000
Largest Standardized Residual = 16.887

Appendix FF. SEM Correlation Matrix

	JD1	JD2	JD3	JD4	JInper1	JInper2	JInper3	JInper4	POS1	POS2_Rec
JD1	1.000									
JD2	0.855	1.000								
JD3	0.818	0.893	1.000							
JD4	0.839	0.897	0.875	1.000						
JInper1	0.500	0.535	0.548	0.602	1.000					
JInper2	0.520	0.553	0.576	0.621	0.960	1.000				
JInper3	0.512	0.540	0.572	0.606	0.953	0.976	1.000			
JInper4	0.426	0.471	0.493	0.536	0.896	0.893	0.890	1.000		
POS1	0.435	0.468	0.556	0.451	0.445	0.478	0.471	0.389	1.000	
POS2_Rec	0.342	0.362	0.404	0.342	0.283	0.310	0.320	0.281	0.546	1.000
POS3_Rec	0.361	0.401	0.430	0.365	0.417	0.456	0.458	0.398	0.593	0.646
POS4	0.420	0.448	0.483	0.418	0.420	0.448	0.437	0.376	0.771	0.541
POS5_Rec	0.456	0.463	0.512	0.441	0.444	0.462	0.471	0.398	0.648	0.680
POS6	0.416	0.447	0.505	0.443	0.445	0.468	0.458	0.404	0.764	0.547
POS7_Rec	0.442	0.455	0.484	0.419	0.455	0.470	0.475	0.393	0.698	0.660
POS8	0.404	0.462	0.514	0.441	0.376	0.406	0.414	0.352	0.745	0.540
ACorg1	0.345	0.398	0.441	0.343	0.384	0.412	0.386	0.364	0.682	0.429
ACsup1	0.510	0.537	0.573	0.568	0.719	0.747	0.756	0.697	0.577	0.418
ACco1	0.198	0.207	0.231	0.188	0.227	0.224	0.210	0.232	0.249	0.172
ACpt1	0.136	0.130	0.124	0.126	0.081	0.098	0.068	0.073	0.074	0.047
ACprof1	0.232	0.257	0.232	0.222	0.244	0.226	0.200	0.211	0.280	0.170
ACtsk1	0.196	0.209	0.230	0.218	0.196	0.195	0.180	0.166	0.327	0.285
ACcar1	0.031	0.017	-0.018	-0.034	0.031	0.022	0.006	0.001	0.036	-0.005
ACorg2	0.288	0.300	0.327	0.274	0.323	0.333	0.327	0.307	0.593	0.388
ACsup2	0.463	0.488	0.517	0.520	0.721	0.741	0.756	0.669	0.536	0.391
ACco2	0.205	0.218	0.239	0.228	0.250	0.238	0.233	0.229	0.279	0.189
ACpt2	0.082	0.069	0.078	0.081	0.119	0.114	0.088	0.093	0.183	0.054
ACprof2	0.196	0.216	0.212	0.216	0.212	0.206	0.210	0.208	0.296	0.222
ACtsk2	0.229	0.227	0.237	0.234	0.195	0.196	0.184	0.165	0.350	0.290
ACcar2	0.100	0.080	0.070	0.058	0.012	0.014	0.016	-0.015	0.072	0.050
ACorg3_R	0.353	0.392	0.440	0.357	0.419	0.440	0.437	0.399	0.648	0.454
ACsup3	0.472	0.486	0.494	0.505	0.711	0.731	0.738	0.688	0.464	0.348
ACco3	0.168	0.168	0.182	0.175	0.209	0.217	0.201	0.220	0.221	0.198
ACpt3	0.258	0.244	0.231	0.233	0.221	0.226	0.201	0.166	0.280	0.208
ACprof3	0.125	0.112	0.109	0.109	0.130	0.132	0.145	0.140	0.181	0.154
ACtsk3_R	0.240	0.241	0.287	0.231	0.220	0.213	0.206	0.196	0.365	0.351
ACcar3	0.041	0.019	0.018	-0.007	-0.023	-0.041	-0.047	-0.002	-0.014	0.044
OCBI1	0.059	0.069	0.061	0.070	0.053	0.058	0.023	0.028	0.075	0.047
OCBI2	0.121	0.118	0.100	0.108	0.113	0.114	0.092	0.103	0.115	0.019
OCBI3	0.064	0.056	0.081	0.041	-0.074	-0.061	-0.086	-0.071	0.147	0.042
OCBI4	0.070	0.057	0.083	0.057	0.098	0.096	0.066	0.068	0.142	0.071
OCBI5	0.162	0.126	0.130	0.131	0.149	0.166	0.131	0.145	0.126	0.136
OCBI6	0.087	0.063	0.077	0.062	0.045	0.059	0.034	0.034	0.064	0.067
OCBI7	0.059	0.013	0.017	0.051	0.017	0.020	-0.004	0.015	0.042	-0.031
OCBI8	0.056	-0.003	0.029	0.043	-0.037	-0.029	-0.056	-0.089	0.104	-0.013
OCBO1	0.138	0.163	0.207	0.126	0.120	0.121	0.129	0.118	0.389	0.253
OCBO2	0.141	0.146	0.133	0.167	0.157	0.148	0.129	0.188	0.183	0.147
OCBO3	0.217	0.217	0.262	0.200	0.160	0.182	0.181	0.195	0.474	0.322
OCBO4	0.259	0.261	0.296	0.247	0.275	0.264	0.251	0.224	0.506	0.325
OCBO5	0.047	0.014	0.007	0.022	0.039	0.033	0.030	0.013	0.168	0.085
OCBO6	0.241	0.256	0.276	0.223	0.255	0.259	0.244	0.255	0.454	0.299
OCBO7	0.044	0.040	0.033	0.053	0.016	0.012	-0.022	0.038	0.192	0.080
OCBO8	0.110	0.126	0.110	0.121	0.103	0.085	0.066	0.095	0.269	0.179
JP1	0.667	0.693	0.683	0.735	0.689	0.708	0.702	0.610	0.467	0.337
JP2	0.642	0.683	0.671	0.747	0.577	0.598	0.587	0.495	0.420	0.334
JP3	0.603	0.659	0.632	0.681	0.594	0.604	0.599	0.567	0.420	0.374
JP4	0.594	0.657	0.673	0.705	0.680	0.700	0.703	0.624	0.447	0.377
JP5	0.667	0.710	0.710	0.772	0.656	0.690	0.679	0.603	0.478	0.347
JP6	0.555	0.572	0.608	0.610	0.586	0.593	0.595	0.515	0.386	0.359
JP7	0.579	0.664	0.666	0.699	0.661	0.674	0.665	0.591	0.457	0.342
JInfo1	0.535	0.565	0.583	0.610	0.839	0.856	0.852	0.777	0.475	0.342
JInfo2	0.540	0.559	0.571	0.599	0.723	0.735	0.721	0.648	0.423	0.325
JInfo3	0.592	0.624	0.623	0.689	0.774	0.779	0.770	0.702	0.444	0.326
JInfo4	0.549	0.562	0.585	0.626	0.745	0.740	0.741	0.668	0.437	0.298
JInfo5	0.563	0.595	0.608	0.652	0.777	0.789	0.795	0.723	0.461	0.329

ACwrk1	0.030	0.021	0.020	0.056	0.075	0.071	0.071	0.040	0.116	0.037
ACwrk2	0.046	0.058	0.055	0.051	-0.003	0.023	0.026	-0.004	0.167	0.117
ACwrk3	-0.016	-0.036	-0.046	-0.032	-0.035	-0.036	-0.048	-0.055	0.008	0.030
Correlation Matrix										
	POS3_Rec	POS4	POS5_Rec	POS6	POS7_Rec	POS8	ACorg1	ACsup1	ACcol	ACpt1
POS3_Rec	1.000									
POS4	0.600	1.000								
POS5_Rec	0.664	0.644	1.000							
POS6	0.594	0.825	0.634	1.000						
POS7_Rec	0.701	0.705	0.782	0.701	1.000					
POS8	0.571	0.749	0.638	0.767	0.662	1.000				
ACorg1	0.508	0.659	0.562	0.633	0.585	0.611	1.000			
ACsup1	0.537	0.597	0.566	0.597	0.585	0.532	0.569	1.000		
ACcol	0.188	0.279	0.216	0.258	0.226	0.290	0.387	0.250	1.000	
ACpt1	0.100	0.172	0.087	0.066	0.068	0.130	0.273	0.122	0.393	1.000
ACprof1	0.334	0.305	0.261	0.249	0.273	0.279	0.500	0.297	0.428	0.539
ACTsk1	0.290	0.336	0.247	0.337	0.255	0.333	0.441	0.266	0.460	0.396
ACcar1	0.065	0.090	0.028	0.060	0.043	0.045	0.118	0.053	0.065	0.081
ACorg2	0.439	0.597	0.499	0.555	0.529	0.546	0.788	0.472	0.359	0.316
ACsup2	0.469	0.567	0.490	0.563	0.541	0.507	0.527	0.879	0.283	0.160
ACco2	0.199	0.353	0.260	0.306	0.282	0.325	0.437	0.318	0.853	0.362
ACpt2	0.131	0.239	0.076	0.142	0.154	0.191	0.362	0.146	0.425	0.689
ACprof2	0.285	0.356	0.278	0.372	0.281	0.363	0.481	0.304	0.383	0.457
ACTsk2	0.307	0.340	0.268	0.364	0.301	0.323	0.471	0.274	0.414	0.386
ACcar2	0.047	0.077	0.067	0.080	0.067	0.083	0.105	0.099	0.000	0.010
ACorg3_R	0.565	0.656	0.580	0.644	0.625	0.562	0.781	0.544	0.340	0.185
ACsup3	0.450	0.498	0.472	0.513	0.492	0.449	0.439	0.843	0.262	0.103
ACco3	0.198	0.255	0.179	0.224	0.208	0.261	0.313	0.232	0.866	0.329
ACpt3	0.194	0.301	0.219	0.290	0.247	0.258	0.464	0.294	0.289	0.580
ACprof3	0.207	0.254	0.178	0.242	0.182	0.218	0.381	0.237	0.323	0.330
ACTsk3_R	0.361	0.370	0.353	0.405	0.370	0.323	0.461	0.311	0.336	0.312
ACcar3	-0.044	0.051	-0.008	0.032	-0.010	0.058	0.039	-0.058	0.125	0.233
OCBI1	0.057	0.055	0.011	0.022	0.022	0.029	0.105	0.030	0.163	0.319
OCBI2	0.048	0.081	0.049	0.067	0.063	0.103	0.198	0.095	0.281	0.345
OCBI3	0.010	0.114	0.037	0.094	0.067	0.111	0.159	-0.011	0.172	0.278
OCBI4	0.015	0.084	0.105	0.087	0.150	0.133	0.236	0.081	0.244	0.350
OCBI5	0.057	0.090	0.087	0.106	0.102	0.152	0.250	0.129	0.319	0.382
OCBI6	0.017	0.050	-0.003	0.031	0.036	0.053	0.147	0.042	0.192	0.248
OCBI7	-0.016	-0.027	-0.045	-0.017	-0.012	0.001	0.043	-0.006	0.078	0.142
OCBI8	-0.026	0.053	-0.040	0.032	0.047	0.107	0.109	0.020	0.138	0.132
OCBO1	0.247	0.341	0.280	0.315	0.300	0.378	0.399	0.204	0.201	0.160
OCBO2	0.149	0.211	0.157	0.189	0.177	0.257	0.291	0.173	0.148	0.300
OCBO3	0.360	0.460	0.377	0.455	0.454	0.437	0.631	0.353	0.226	0.203
OCBO4	0.395	0.485	0.424	0.465	0.443	0.461	0.690	0.352	0.240	0.292
OCBO5	0.076	0.134	0.106	0.107	0.127	0.182	0.177	0.045	0.172	0.130
OCBO6	0.361	0.439	0.399	0.437	0.440	0.429	0.663	0.373	0.220	0.243
OCBO7	0.070	0.202	0.112	0.160	0.147	0.247	0.242	0.020	0.074	0.304
OCBO8	0.160	0.299	0.211	0.265	0.231	0.295	0.370	0.126	0.121	0.337
JP1	0.444	0.440	0.480	0.473	0.487	0.467	0.392	0.631	0.270	0.101
JP2	0.423	0.407	0.444	0.443	0.430	0.457	0.360	0.559	0.259	0.154
JP3	0.437	0.420	0.436	0.463	0.477	0.439	0.384	0.589	0.219	0.107
JP4	0.445	0.451	0.465	0.492	0.467	0.430	0.397	0.636	0.246	0.098
JP5	0.450	0.489	0.503	0.514	0.487	0.485	0.419	0.642	0.278	0.094
JP6	0.395	0.377	0.433	0.400	0.444	0.402	0.342	0.544	0.267	0.019
JP7	0.429	0.453	0.455	0.482	0.463	0.457	0.463	0.618	0.234	0.112
JInfo1	0.453	0.475	0.466	0.479	0.494	0.439	0.442	0.751	0.267	0.086
JInfo2	0.403	0.430	0.412	0.448	0.433	0.413	0.382	0.656	0.262	0.024
JInfo3	0.410	0.448	0.432	0.473	0.452	0.421	0.368	0.714	0.252	0.090
JInfo4	0.396	0.418	0.419	0.450	0.462	0.413	0.369	0.674	0.222	0.061
JInfo5	0.451	0.431	0.462	0.466	0.477	0.432	0.398	0.715	0.223	0.041
ACwrk1	0.101	0.097	0.054	0.079	0.064	0.140	0.232	0.137	0.143	0.349
ACwrk2	0.157	0.140	0.100	0.177	0.114	0.198	0.293	0.138	0.189	0.294
ACwrk3	0.026	0.039	-0.039	0.065	-0.022	0.074	0.133	0.062	0.067	0.136

Correlation Matrix										
	ACprof1	ACtsk1	ACcar1	ACorg2	ACsup2	ACco2	ACpt2	ACprof2	ACtsk2	ACcar2
ACprof1	1.000									
ACtsk1	0.549	1.000								
ACcar1	0.176	0.127	1.000							
ACorg2	0.532	0.517	0.243	1.000						
ACsup2	0.341	0.329	0.115	0.522	1.000					
ACco2	0.382	0.479	0.112	0.442	0.390	1.000				
ACpt2	0.551	0.441	0.123	0.391	0.207	0.389	1.000			
ACprof2	0.660	0.525	0.027	0.506	0.309	0.419	0.538	1.000		
ACtsk2	0.529	0.779	0.002	0.485	0.299	0.435	0.532	0.642	1.000	
ACcar2	0.110	0.074	0.756	0.179	0.144	0.041	0.053	-0.029	0.034	1.000
ACorg3_R	0.433	0.414	0.089	0.705	0.533	0.420	0.209	0.488	0.478	0.073
ACsup3	0.288	0.253	0.100	0.419	0.894	0.321	0.140	0.293	0.256	0.124
ACco3	0.339	0.462	0.070	0.327	0.274	0.854	0.367	0.327	0.403	-0.013
ACpt3	0.461	0.298	0.121	0.440	0.291	0.288	0.579	0.458	0.437	0.113
ACprof3	0.612	0.394	0.048	0.391	0.277	0.351	0.432	0.739	0.493	0.008
ACtsk3_R	0.415	0.586	-0.023	0.408	0.297	0.355	0.356	0.488	0.660	-0.018
ACcar3	0.204	0.098	0.351	0.174	-0.017	0.113	0.300	0.155	0.118	0.273
OCBI1	0.175	0.101	0.095	0.142	-0.005	0.179	0.300	0.180	0.177	0.051
OCBI2	0.214	0.147	0.156	0.218	0.075	0.284	0.317	0.204	0.200	0.029
OCBI3	0.081	0.108	0.078	0.170	-0.006	0.200	0.244	0.102	0.148	0.060
OCBI4	0.230	0.223	0.109	0.258	0.109	0.175	0.306	0.223	0.268	0.079
OCBI5	0.321	0.250	0.164	0.270	0.168	0.297	0.326	0.220	0.245	0.087
OCBI6	0.105	0.071	0.216	0.193	0.058	0.202	0.168	0.106	0.102	0.173
OCBI7	-0.008	0.107	0.131	0.077	-0.028	0.126	0.086	0.028	0.079	0.081
OCBI8	0.023	0.134	0.087	0.143	0.016	0.171	0.126	0.110	0.171	0.087
OCBO1	0.266	0.262	0.175	0.438	0.199	0.230	0.184	0.310	0.274	0.234
OCBO2	0.324	0.224	0.110	0.362	0.153	0.121	0.247	0.259	0.175	0.077
OCBO3	0.434	0.309	0.084	0.617	0.334	0.234	0.211	0.414	0.353	0.143
OCBO4	0.490	0.314	0.137	0.659	0.347	0.282	0.368	0.431	0.351	0.109
OCBO5	0.213	0.158	0.259	0.217	0.063	0.176	0.319	0.169	0.174	0.192
OCBO6	0.503	0.333	0.151	0.682	0.387	0.295	0.309	0.428	0.386	0.142
OCBO7	0.246	0.175	0.121	0.307	0.026	0.071	0.317	0.186	0.199	0.104
OCBO8	0.317	0.241	0.076	0.448	0.126	0.169	0.305	0.288	0.261	0.086
JP1	0.277	0.233	0.016	0.344	0.584	0.288	0.110	0.256	0.271	0.022
JP2	0.311	0.267	0.051	0.319	0.494	0.276	0.090	0.251	0.251	0.103
JP3	0.244	0.220	0.049	0.325	0.540	0.255	0.064	0.254	0.207	0.069
JP4	0.266	0.228	0.034	0.334	0.564	0.260	0.073	0.263	0.243	0.014
JP5	0.257	0.246	0.056	0.350	0.590	0.300	0.100	0.258	0.227	0.040
JP6	0.195	0.230	-0.028	0.270	0.496	0.300	0.095	0.203	0.232	0.040
JP7	0.269	0.212	0.021	0.369	0.577	0.249	0.132	0.231	0.229	0.025
JInfo1	0.228	0.244	0.030	0.367	0.747	0.297	0.141	0.226	0.225	0.015
JInfo2	0.208	0.237	0.026	0.317	0.636	0.272	0.135	0.176	0.227	0.044
JInfo3	0.221	0.236	0.064	0.340	0.693	0.311	0.119	0.215	0.218	0.069
JInfo4	0.195	0.211	0.041	0.310	0.671	0.266	0.091	0.202	0.214	0.078
JInfo5	0.208	0.213	0.067	0.339	0.719	0.300	0.085	0.191	0.200	0.089
ACwrk1	0.506	0.362	0.248	0.413	0.216	0.216	0.414	0.359	0.322	0.230
ACwrk2	0.400	0.379	0.246	0.433	0.201	0.253	0.369	0.444	0.375	0.245
ACwrk3	0.317	0.205	0.277	0.257	0.157	0.084	0.258	0.346	0.306	0.332
Correlation Matrix										
	ACorg3_R	ACsup3	ACco3	ACpt3	ACprof3	ACtsk3_R	ACcar3	OCBI1	OCBI2	OCBI3
ACorg3_R	1.000									
ACsup3	0.470	1.000								
ACco3	0.314	0.279	1.000							
ACpt3	0.378	0.242	0.243	1.000						
ACprof3	0.373	0.230	0.304	0.401	1.000					
ACtsk3_R	0.564	0.288	0.307	0.365	0.389	1.000				
ACcar3	0.052	0.037	0.114	0.253	0.123	0.049	1.000			
OCBI1	0.078	-0.002	0.189	0.221	0.146	0.121	0.163	1.000		
OCBI2	0.138	0.066	0.250	0.264	0.204	0.166	0.185	0.691	1.000	
OCBI3	0.096	-0.035	0.153	0.155	0.062	0.099	0.112	0.475	0.466	1.000
OCBI4	0.172	0.122	0.229	0.327	0.217	0.188	0.244	0.472	0.544	0.374
OCBI5	0.208	0.142	0.337	0.272	0.244	0.160	0.156	0.456	0.621	0.318

OCBI6	0.043	0.054	0.231	0.192	0.117	0.028	0.118	0.496	0.705	0.477
OCBI7	0.021	-0.011	0.150	0.094	0.003	0.005	0.136	0.488	0.488	0.387
OCBI8	0.041	0.017	0.131	0.090	0.131	0.047	0.037	0.349	0.396	0.391
OCBO1	0.377	0.130	0.189	0.256	0.242	0.243	0.166	0.186	0.255	0.253
OCBO2	0.223	0.152	0.106	0.263	0.206	0.178	0.228	0.221	0.299	0.148
OCBO3	0.571	0.311	0.222	0.398	0.348	0.346	0.085	0.187	0.275	0.225
OCBO4	0.633	0.298	0.226	0.430	0.345	0.356	0.092	0.235	0.322	0.198
OCBO5	0.135	0.079	0.159	0.196	0.148	0.162	0.238	0.225	0.290	0.136
OCBO6	0.612	0.358	0.221	0.370	0.399	0.373	0.132	0.196	0.248	0.210
OCBO7	0.160	0.048	0.075	0.270	0.151	0.152	0.217	0.255	0.298	0.250
OCBO8	0.303	0.131	0.135	0.320	0.201	0.217	0.188	0.267	0.332	0.265
JP1	0.420	0.562	0.231	0.245	0.165	0.290	0.006	0.059	0.110	0.013
JP2	0.403	0.506	0.203	0.229	0.159	0.276	0.038	0.055	0.120	0.032
JP3	0.392	0.538	0.184	0.199	0.119	0.232	0.006	0.012	0.095	-0.016
JP4	0.411	0.560	0.230	0.247	0.147	0.275	-0.002	0.025	0.084	-0.025
JP5	0.444	0.581	0.255	0.219	0.145	0.269	0.013	0.044	0.065	-0.009
JP6	0.363	0.496	0.220	0.139	0.134	0.221	-0.040	0.045	0.113	0.041
JP7	0.447	0.548	0.200	0.219	0.150	0.221	0.013	0.062	0.127	0.041
JInfo1	0.431	0.718	0.238	0.218	0.162	0.273	-0.040	0.064	0.112	-0.067
JInfo2	0.371	0.612	0.264	0.124	0.137	0.219	-0.061	0.074	0.130	0.046
JInfo3	0.382	0.662	0.256	0.188	0.133	0.236	-0.029	0.076	0.116	0.021
JInfo4	0.383	0.677	0.180	0.174	0.099	0.229	-0.086	0.028	0.029	-0.020
JInfo5	0.396	0.697	0.202	0.149	0.130	0.209	-0.038	0.050	0.044	-0.034
ACwrk1	0.187	0.134	0.183	0.288	0.363	0.166	0.227	0.117	0.129	0.102
ACwrk2	0.280	0.172	0.196	0.270	0.403	0.263	0.303	0.121	0.096	0.102
ACwrk3	0.068	0.119	0.094	0.158	0.437	0.151	0.240	0.128	0.169	0.171

Correlation Matrix

	OCBI4	OCBI5	OCBI6	OCBI7	OCBI8	OCBO1	OCBO2	OCBO3	OCBO4	OCBO5
OCBI4	1.000									
OCBI5	0.703	1.000								
OCBI6	0.543	0.619	1.000							
OCBI7	0.463	0.472	0.571	1.000						

OCBI8	0.314	0.368	0.525	0.535	1.000					
OCBO1	0.239	0.257	0.230	0.120	0.256	1.000				
OCBO2	0.246	0.346	0.183	0.189	0.132	0.481	1.000			
OCBO3	0.316	0.348	0.242	0.174	0.164	0.512	0.469	1.000		
OCBO4	0.350	0.350	0.231	0.191	0.152	0.470	0.481	0.734	1.000	
OCBO5	0.313	0.258	0.225	0.227	0.233	0.370	0.431	0.323	0.412	1.000
OCBO6	0.329	0.326	0.220	0.168	0.191	0.466	0.418	0.715	0.767	0.438
OCBO7	0.356	0.329	0.281	0.236	0.195	0.345	0.453	0.435	0.464	0.528
OCBO8	0.387	0.328	0.293	0.249	0.220	0.439	0.527	0.569	0.604	0.524
JP1	0.092	0.163	0.082	0.075	0.036	0.151	0.223	0.262	0.318	0.124
JP2	0.060	0.143	0.052	0.050	0.054	0.170	0.195	0.245	0.274	0.122
JP3	0.050	0.142	0.078	0.073	0.038	0.154	0.182	0.230	0.250	0.050
JP4	0.041	0.135	0.064	0.057	-0.018	0.150	0.119	0.243	0.273	-0.003
JP5	0.071	0.166	0.042	0.071	0.023	0.125	0.167	0.265	0.283	0.050
JP6	0.086	0.181	0.075	0.018	0.033	0.122	0.121	0.188	0.235	0.067
JP7	0.077	0.205	0.082	0.052	0.001	0.169	0.182	0.278	0.331	0.048
JInfo1	0.130	0.199	0.052	0.031	-0.029	0.153	0.168	0.245	0.272	0.071
JInfo2	0.090	0.199	0.112	0.067	0.073	0.116	0.113	0.227	0.215	0.072
JInfo3	0.071	0.191	0.083	0.067	0.020	0.121	0.129	0.220	0.234	0.057
JInfo4	0.071	0.142	0.024	0.042	0.018	0.119	0.132	0.211	0.236	0.043
JInfo5	0.062	0.148	0.063	0.090	0.030	0.134	0.116	0.209	0.252	0.063
ACwrk1	0.125	0.197	0.181	0.083	0.126	0.212	0.200	0.174	0.255	0.144
ACwrk2	0.126	0.132	0.069	0.026	0.070	0.179	0.132	0.217	0.266	0.149
ACwrk3	0.160	0.149	0.178	0.054	0.214	0.182	0.081	0.193	0.139	0.115

Correlation Matrix

	OCBO6	OCBO7	OCBO8	JP1	JP2	JP3	JP4	JP5	JP6	JP7
OCBO6	1.000									
OCBO7	0.497	1.000								
OCBO8	0.606	0.788	1.000							
JP1	0.311	0.108	0.150	1.000						
JP2	0.284	0.066	0.148	0.823	1.000					
JP3	0.277	0.064	0.068	0.741	0.763	1.000				

JP4	0.276	-0.001	0.073	0.745	0.721	0.774	1.000				
JP5	0.291	0.050	0.091	0.780	0.779	0.800	0.869	1.000			
JP6	0.237	0.034	0.057	0.700	0.710	0.655	0.674	0.690	1.000		
JP7	0.337	0.075	0.083	0.721	0.684	0.697	0.794	0.797	0.759	1.000	
JInfo1	0.270	0.045	0.107	0.716	0.611	0.621	0.712	0.717	0.569	0.655	
JInfo2	0.239	0.024	0.091	0.715	0.655	0.658	0.659	0.691	0.583	0.651	
JInfo3	0.246	0.019	0.073	0.742	0.693	0.732	0.740	0.772	0.619	0.706	
JInfo4	0.254	0.016	0.054	0.674	0.635	0.685	0.675	0.718	0.586	0.641	
JInfo5	0.275	0.034	0.083	0.720	0.661	0.676	0.717	0.741	0.600	0.673	
ACwrk1	0.249	0.194	0.264	0.046	0.095	0.040	0.042	0.031	-0.001	0.036	
ACwrk2	0.303	0.112	0.206	0.076	0.142	0.112	0.044	0.074	0.037	0.077	
ACwrk3	0.233	0.124	0.147	-0.037	-0.003	-0.003	-0.024	-0.031	-0.047	-0.016	

Correlation Matrix

	JInfo1	JInfo2	JInfo3	JInfo4	JInfo5	ACwrk1	ACwrk2	ACwrk3
JInfo1	1.000							
JInfo2	0.802	1.000						
JInfo3	0.825	0.894	1.000					
JInfo4	0.798	0.799	0.849	1.000				
JInfo5	0.837	0.815	0.883	0.882	1.000			
ACwrk1	0.087	0.054	0.087	0.048	0.074	1.000		
ACwrk2	0.066	0.062	0.065	0.047	0.058	0.573	1.000	
ACwrk3	0.012	0.035	0.021	-0.013	-0.014	0.523	0.508	1.000

Total Variance = 68.000 Generalized Variance = 0.285900D-33

Largest Eigenvalue = 22.563 Smallest Eigenvalue = 0.016

Condition Number = 37.522

WARNING: The Condition Number indicates severe multicollinearity.

One or more variables may be redundant.

Appendix GG. SEM Measurement Equations

JD1 = 0.887*JD, Errorvar.= 0.213 , R² = 0.787
 Standerr (0.0132)
 Z-values 16.095
 P-values 0.000

JD2 = 0.953*JD, Errorvar.= 0.0925 , R² = 0.908
 Standerr (0.0230) (0.00761)
 Z-values 41.491 12.143
 P-values 0.000 0.000

JD3 = 0.931*JD, Errorvar.= 0.134 , R² = 0.866
 Standerr (0.0239) (0.00935)
 Z-values 38.973 14.288
 P-values 0.000 0.000

JD4 = 0.945*JD, Errorvar.= 0.106 , R² = 0.894
 Standerr (0.0233) (0.00815)
 Z-values 40.638 13.015
 P-values 0.000 0.000

JInper1 = 0.970*JInper, Errorvar.= 0.0598 , R² = 0.940
 Standerr (0.00387)
 Z-values 15.435
 P-values 0.000

JInper2 = 0.990*JInper, Errorvar.= 0.0206 , R² = 0.979
 Standerr (0.0112) (0.00226)
 Z-values 88.382 9.117
 P-values 0.000 0.000

JInper3 = 0.985*JInper, Errorvar.= 0.0292 , $R^2 = 0.971$
 Standerr (0.0117) (0.00254)
 Z-values 84.190 11.530
 P-values 0.000 0.000

JInper4 = 0.906*JInper, Errorvar.= 0.180 , $R^2 = 0.820$
 Standerr (0.0186) (0.0102)
 Z-values 48.646 17.566
 P-values 0.000 0.000

POS1 = 0.859*POS, Errorvar.= 0.264 , $R^2 = 0.737$
 Standerr (0.0166)
 Z-values 15.831
 P-values 0.000

POS2_Rec = 0.684*POS, Errorvar.= 0.532 , $R^2 = 0.468$
 Standerr (0.0331) (0.0303)
 Z-values 20.693 17.586
 P-values 0.000 0.000

POS3_Rec = 0.735*POS, Errorvar.= 0.461 , $R^2 = 0.540$
 Standerr (0.0320) (0.0266)
 Z-values 22.962 17.320
 P-values 0.000 0.000

POS4 = 0.876*POS, Errorvar.= 0.233 , $R^2 = 0.767$
 Standerr (0.0284) (0.0152)
 Z-values 30.898 15.379
 P-values 0.000 0.000

POS5_Rec = 0.800*POS, Errorvar.= 0.361 , $R^2 = 0.639$
 Standerr (0.0305) (0.0215)
 Z-values 26.253 16.775
 P-values 0.000 0.000

POS6 = 0.872*POS, Errorvar.= 0.240 , $R^2 = 0.761$
 Standerr (0.0285) (0.0155)
 Z-values 30.657 15.482
 P-values 0.000 0.000

POS7_Rec = 0.846*POS, Errorvar.= 0.285 , $R^2 = 0.715$
 Standerr (0.0292) (0.0177)
 Z-values 28.948 16.097
 P-values 0.000 0.000

POS8 = 0.832*POS, Errorvar.= 0.309 , $R^2 = 0.692$
 Standerr (0.0296) (0.0189)
 Z-values 28.100 16.341
 P-values 0.000 0.000

ACong1 = 0.890*ACong, Errorvar.= 0.182 , $R^2 = 0.813$
 Standerr (0.0145)
 Z-values 12.542
 P-values 0.000

ACsup1 = 0.919*ACsup, Errorvar.= 0.153 , $R^2 = 0.847$
 Standerr (0.0108)
 Z-values 14.156
 P-values 0.000

ACco1 = 0.927*ACco, Errorvar.= 0.132 , $R^2 = 0.867$
 Standerr (0.0117)
 Z-values 11.323
 P-values 0.000

ACpt1 = 0.796*ACpt, Errorvar.= 0.356 , $R^2 = 0.641$
 Standerr (0.0275)
 Z-values 12.946
 P-values 0.000

ACprof1 = 0.772*ACprof, Errorvar.= 0.382 , R² = 0.609
 Standerr (0.0255)
 Z-values 15.013
 P-values 0.000

ACtsk1 = 0.829*ACtsk, Errorvar.= 0.293 , R² = 0.701
 Standerr (0.0221)
 Z-values 13.259
 P-values 0.000

ACcar1 = 0.902*ACcar, Errorvar.= 0.186 , R² = 0.814
 Standerr (0.0423)
 Z-values 4.396
 P-values 0.000

ACorg2 = 0.850*ACorg, Errorvar.= 0.254 , R² = 0.740
 Standerr (0.0266) (0.0174)
 Z-values 31.919 14.579
 P-values 0.000 0.000

ACsup2 = 0.959*ACsup, Errorvar.= 0.0770 , R² = 0.923
 Standerr (0.0200) (0.00810)
 Z-values 47.993 9.503
 P-values 0.000 0.000

ACco2 = 0.917*ACco, Errorvar.= 0.151 , R² = 0.848
 Standerr (0.0219) (0.0122)
 Z-values 41.935 12.344
 P-values 0.000 0.000

ACpt2 = 0.850*ACpt, Errorvar.= 0.266 , R² = 0.731
 Standerr (0.0382) (0.0257)
 Z-values 22.257 10.320
 P-values 0.000 0.000

ACprof2 = 0.868*ACprof, Errorvar.= 0.219 , R² = 0.775
 Standerr (0.0360) (0.0201)
 Z-values 24.149 10.883
 P-values 0.000 0.000

ACtsk2 = 0.909*ACtsk, Errorvar.= 0.150 , R² = 0.846
 Standerr (0.0324) (0.0194)
 Z-values 28.060 7.736
 P-values 0.000 0.000

ACcar2 = 0.835*ACcar, Errorvar.= 0.302 , R² = 0.698
 Standerr (0.0486) (0.0389)
 Z-values 17.185 7.770
 P-values 0.000 0.000

ACorg3_R = 0.838*ACorg, Errorvar.= 0.274 , R² = 0.720
 Standerr (0.0270) (0.0183)
 Z-values 31.027 14.955
 P-values 0.000 0.000

ACsup3 = 0.921*ACsup, Errorvar.= 0.148 , R² = 0.851
 Standerr (0.0218) (0.0106)
 Z-values 42.210 13.994
 P-values 0.000 0.000

ACco3 = 0.921*ACco, Errorvar.= 0.144 , R² = 0.855
 Standerr (0.0217) (0.0120)
 Z-values 42.394 11.991
 P-values 0.000 0.000

ACpt3 = 0.692*ACpt, Errorvar.= 0.514 , R² = 0.482
 Standerr (0.0380) (0.0328)
 Z-values 18.188 15.679
 P-values 0.000 0.000

ACprof3 = 0.776*ACprof, Errorvar.= 0.376 , R² = 0.615
 Standerr (0.0364) (0.0252)
 Z-values 21.317 14.921
 P-values 0.000 0.000

ACtsk3_R = 0.705*ACtsk, Errorvar.= 0.488 , R² = 0.504
 Standerr (0.0344) (0.0298)
 Z-values 20.503 16.404
 P-values 0.000 0.000

ACcar3 = 0.381*ACcar, Errorvar.= 0.855 , R² = 0.145
 Standerr (0.0408) (0.0477)
 Z-values 9.337 17.923
 P-values 0.000 0.000

OCBI1 = 0.702*OCBI, Errorvar.= 0.508 , R² = 0.492
 Standerr (0.0307)
 Z-values 16.536
 P-values 0.000

OCBI2 = 0.834*OCBI, Errorvar.= 0.306 , R² = 0.695
 Standerr (0.0416) (0.0218)
 Z-values 20.028 14.013
 P-values 0.000 0.000

OCBI3 = 0.563*OCBI, Errorvar.= 0.684 , R² = 0.317
 Standerr (0.0409) (0.0390)
 Z-values 13.771 17.506
 P-values 0.000 0.000

OCBI4 = 0.714*OCBI, Errorvar.= 0.491 , R² = 0.510
 Standerr (0.0412) (0.0299)
 Z-values 17.334 16.401
 P-values 0.000 0.000

OCBI5 = 0.763*OCBI, Errorvar.= 0.419 , R^2 = 0.581
 Standerr (0.0413) (0.0266)
 Z-values 18.447 15.728
 P-values 0.000 0.000

OCBI6 = 0.810*OCBI, Errorvar.= 0.345 , R^2 = 0.656
 Standerr (0.0415) (0.0234)
 Z-values 19.511 14.726
 P-values 0.000 0.000

OCBI7 = 0.657*OCBI, Errorvar.= 0.569 , R^2 = 0.431
 Standerr (0.0411) (0.0336)
 Z-values 15.996 16.943
 P-values 0.000 0.000

OCBI8 = 0.549*OCBI, Errorvar.= 0.699 , R^2 = 0.301
 Standerr (0.0409) (0.0398)
 Z-values 13.431 17.569
 P-values 0.000 0.000

OCB01 = 0.584*OCB0, Errorvar.= 0.653 , R^2 = 0.343
 Standerr (0.0370)
 Z-values 17.636
 P-values 0.000

OCB02 = 0.568*OCB0, Errorvar.= 0.671 , R^2 = 0.325
 Standerr (0.0455) (0.0379)
 Z-values 12.496 17.693
 P-values 0.000 0.000

OCB03 = 0.815*OCB0, Errorvar.= 0.324 , R^2 = 0.672
 Standerr (0.0507) (0.0210)
 Z-values 16.054 15.404
 P-values 0.000 0.000

OCB04 = 0.865*OCB0, Errorvar.= 0.238 , R² = 0.759
 Standerr (0.0520) (0.0173)
 Z-values 16.631 13.793
 P-values 0.000 0.000

OCB05 = 0.503*OCB0, Errorvar.= 0.742 , R² = 0.254
 Standerr (0.0443) (0.0415)
 Z-values 11.347 17.896
 P-values 0.000 0.000

OCB06 = 0.850*OCB0, Errorvar.= 0.264 , R² = 0.732
 Standerr (0.0516) (0.0183)
 Z-values 16.467 14.384
 P-values 0.000 0.000

OCB07 = 0.605*OCB0, Errorvar.= 0.627 , R² = 0.369
 Standerr (0.0462) (0.0357)
 Z-values 13.101 17.546
 P-values 0.000 0.000

OCB08 = 0.731*OCB0, Errorvar.= 0.456 , R² = 0.539
 Standerr (0.0488) (0.0273)
 Z-values 14.974 16.695
 P-values 0.000 0.000

JP1 = 0.873*JP, Errorvar.= 0.239 , R² = 0.761
 Standerr (0.0305) (0.0147)
 Z-values 28.585 16.259
 P-values 0.000 0.000

JP2 = 0.856*JP, Errorvar.= 0.267 , R² = 0.733
 Standerr (0.0309) (0.0161)
 Z-values 27.707 16.561
 P-values 0.000 0.000

JP3 = 0.855*JP, Errorvar.= 0.269 , $R^2 = 0.731$
 Standerr (0.0309) (0.0162)
 Z-values 27.668 16.573
 P-values 0.000 0.000

JP4 = 0.895*JP, Errorvar.= 0.199 , $R^2 = 0.801$
 Standerr (0.0300) (0.0127)
 Z-values 29.812 15.703
 P-values 0.000 0.000

JP5 = 0.927*JP, Errorvar.= 0.140 , $R^2 = 0.860$
 Standerr (0.0292) (0.00980)
 Z-values 31.730 14.273
 P-values 0.000 0.000

JP6 = 0.782*JP, Errorvar.= 0.388 , $R^2 = 0.612$
 Standerr (0.0324) (0.0224)
 Z-values 24.139 17.340
 P-values 0.000 0.000

JP7 = 0.855*JP, Errorvar.= 0.269 , $R^2 = 0.731$
 Standerr (0.0309) (0.0163)
 Z-values 27.646 16.580
 P-values 0.000 0.000

JInfo1 = 0.896*JInfo, Errorvar.= 0.197 , $R^2 = 0.803$
 Standerr (0.0299) (0.0122)
 Z-values 29.930 16.137
 P-values 0.000 0.000

JInfo2 = 0.897*JInfo, Errorvar.= 0.196 , $R^2 = 0.804$
 Standerr (0.0299) (0.0121)
 Z-values 29.980 16.114
 P-values 0.000 0.000

JInfo3 = 0.947*JInfo, Errorvar.= 0.103 , $R^2 = 0.897$
 Standerr (0.0287) (0.00762)
 Z-values 33.001 13.539
 P-values 0.000 0.000

JInfo4 = 0.905*JInfo, Errorvar.= 0.181 , $R^2 = 0.819$
 Standerr (0.0297) (0.0114)
 Z-values 30.432 15.889
 P-values 0.000 0.000

JInfo5 = 0.937*JInfo, Errorvar.= 0.122 , $R^2 = 0.878$
 Standerr (0.0289) (0.00850)
 Z-values 32.366 14.378
 P-values 0.000 0.000

ACwrk1 = 0.750*ACwrk, Errorvar.= 0.438 , $R^2 = 0.562$
 Standerr (0.0362) (0.0335)
 Z-values 20.712 13.069
 P-values 0.000 0.000

ACwrk2 = 0.750*ACwrk, Errorvar.= 0.438 , $R^2 = 0.562$
 Standerr (0.0362) (0.0335)
 Z-values 20.704 13.076
 P-values 0.000 0.000

ACwrk3 = 0.694*ACwrk, Errorvar.= 0.518 , $R^2 = 0.482$
 Standerr (0.0370) (0.0356)
 Z-values 18.766 14.568
 P-values 0.000 0.000

Appendix HH. SEM Structural Equations

$$JD = 0.826*JP, \text{ Errorvar.} = 0.317, R^2 = 0.683$$

Standerr	(0.0360)	(0.0239)
Z-values	22.953	13.263
P-values	0.000	0.000

$$JInper = 0.0972*JP + 0.772*JInfo, \text{ Errorvar.} = 0.266, R^2 = 0.734$$

Standerr	(0.0457)	(0.0503)	(0.0169)
Z-values	2.125	15.342	15.775
P-values	0.034	0.000	0.000

$$POS = 0.197*JD + 0.172*JInper + 0.326*JP, \text{ Errorvar.} = 0.591, R^2 = 0.409$$

Standerr	(0.0605)	(0.0496)	(0.0743)	(0.0439)
Z-values	3.263	3.460	4.388	13.483
P-values	0.001	0.001	0.000	0.000

$$ACorg = 0.775*POS + 0.309*ACwrk, \text{ Errorvar.} = 0.281, R^2 = 0.719$$

Standerr	(0.0332)	(0.0289)	(0.0250)
Z-values	23.375	10.706	11.207
P-values	0.000	0.000	0.000

$$ACsup = 0.409*JInper + 0.298*POS - 0.168*JP + 0.410*JInfo + 0.167*ACwrk, \text{ Errorvar.} = 0.227, R^2 = 0.773$$

Standerr	(0.0431)	(0.0290)	(0.0477)	(0.0587)	(0.0233)	(0.0171)
Z-values	9.478	10.294	-3.516	6.981	7.156	13.238
P-values	0.000	0.000	0.000	0.000	0.000	0.000

$$ACco = 0.214*ACorg + 0.362*ACpt + 0.134*JP, \text{ Errorvar.} = 0.691, R^2 = 0.309$$

Standerr	(0.0471)	(0.0435)	(0.0409)	(0.0458)
Z-values	4.552	8.318	3.278	15.099
P-values	0.000	0.000	0.001	0.000

$$ACpt = 0.303*ACorg + 0.389*ACwrk, \text{ Errorvar.} = 0.676, R^2 = 0.324$$

Standerr	(0.0422)	(0.0461)	(0.0620)
Z-values	7.165	8.431	10.903
P-values	0.000	0.000	0.000

$$ACprof = 0.343*ACorg + 0.382*ACpt - 0.214*ACcar + 0.410*ACwrk, \text{ Errorvar.} = 0.280, R^2 = 0.720$$

Standerr	(0.0350)	(0.0419)	(0.0352)	(0.0442)	(0.0331)
Z-values	9.798	9.109	-6.071	9.286	8.467
P-values	0.000	0.000	0.000	0.000	0.000

$$ACtsk = 0.190*ACorg + 0.171*ACco + 0.112*ACpt + 0.461*ACprof, \text{ Errorvar.} = 0.398, R^2 = 0.602$$

Standerr	(0.0420)	(0.0361)	(0.0509)	(0.0587)	(0.0354)
Z-values	4.527	4.731	2.199	7.843	11.259
P-values	0.000	0.000	0.028	0.000	0.000

$$ACcar = 0.406*ACwrk, \text{ Errorvar.} = 0.835, R^2 = 0.165$$

Standerr	(0.0449)	(0.0734)
Z-values	9.042	11.379
P-values	0.000	0.000

$$OCBI = 0.150*ACco + 0.330*ACpt + 0.137*ACcar, \text{ Errorvar.} = 0.780, R^2 = 0.220$$

Standerr	(0.0448)	(0.0499)	(0.0408)	(0.0788)
Z-values	3.350	6.607	3.351	9.907
P-values	0.001	0.000	0.001	0.000

$$OCBO = 0.813*ACorg - 0.157*ACco + 0.336*OCBI - 0.111*JInfo, \text{ Errorvar.} = 0.291, R^2 = 0.709$$

Standerr	(0.0572)	(0.0326)	(0.0367)	(0.0308)	(0.0400)
Z-values	14.216	-4.821	9.154	-3.613	7.279
P-values	0.000	0.000	0.000	0.000	0.000

Appendix II. Path Analysis Correlation Matrix

Correlation Matrix

	GMJD	GMJInper	GMPOS	GMACorg	GMACsup	GMACco	GMACpt	GMACprof	GMACtsk	GMACcar
GMJD	1.000									
GMJInper	0.538	1.000								
GMPOS	0.647	0.780	1.000							
GMACorg	0.389	0.388	0.399	1.000						
GMACsup	0.538	0.731	0.741	0.519	1.000					
GMACco	0.207	0.214	0.252	0.380	0.280	1.000				
GMACpt	0.178	0.131	0.132	0.376	0.212	0.292	1.000			
GMACprof	0.186	0.180	0.178	0.479	0.283	0.358	0.469	1.000		
GMACtsk	0.239	0.183	0.231	0.520	0.288	0.420	0.416	0.551	1.000	
GMACcar	0.054	0.007	0.038	0.154	0.093	0.068	0.168	0.086	0.052	1.000
GMOCBI	0.093	0.027	0.074	0.173	0.043	0.236	0.263	0.171	0.170	0.164
GMOCBO	0.206	0.163	0.186	0.577	0.255	0.222	0.348	0.387	0.350	0.216
GMJP	0.769	0.676	0.795	0.440	0.639	0.273	0.169	0.229	0.276	0.039
GMJInfo	0.534	0.470	0.520	0.687	0.597	0.276	0.203	0.304	0.403	0.065
GMACwrk	0.026	0.008	0.053	0.295	0.171	0.167	0.321	0.478	0.346	0.352

Correlation Matrix

	GMOCBI	GMOCBO	GMJP	GMJInfo	GMACwrk
GMOCBI	1.000				
GMOCBO	0.401	1.000			
GMJP	0.085	0.243	1.000		
GMJInfo	0.073	0.433	0.569	1.000	
GMACwrk	0.194	0.286	0.047	0.115	1.000

Total Variance = 15.000 Generalized Variance = 0.436788D-03

Largest Eigenvalue = 5.569 Smallest Eigenvalue = 0.152

Condition Number = 6.048

Appendix JJ. Path Analysis Structural Equations

$$\text{GMJD} = 0.687 \cdot \text{GMJP} + 0.143 \cdot \text{GMJInfo}, \text{Errorvar.} = 0.395, R^2 = 0.605$$

Standerr	(0.0295)	(0.0295)	(0.0215)
Z-values	23.324	4.853	18.344
P-values	0.000	0.000	0.000

$$\text{GMJInper} = 0.604 \cdot \text{GMJP} + 0.126 \cdot \text{GMJInfo}, \text{Errorvar.} = 0.533, R^2 = 0.467$$

Standerr	(0.0342)	(0.0342)	(0.0290)
Z-values	17.650	3.692	18.344
P-values	0.000	0.000	0.000

$$\text{GMPOS} = 0.447 \cdot \text{GMJInper} + 0.493 \cdot \text{GMJP}, \text{Errorvar.} = 0.259, R^2 = 0.741$$

Standerr	(0.0266)	(0.0266)	(0.0141)
Z-values	16.783	18.526	18.344
P-values	0.000	0.000	0.000

$$\text{GMACorg} = 0.137 \cdot \text{GMACsup} + 0.582 \cdot \text{GMJInfo} + 0.204 \cdot \text{GMACwrk}, \text{Errorvar.} = 0.469, R^2 = 0.530$$

Standerr	(0.0330)	(0.0327)	(0.0269)	(0.0256)
Z-values	4.138	17.807	7.614	18.344
P-values	0.000	0.000	0.000	0.000

$$\text{GMACsup} = 0.362 \cdot \text{GMJInper} + 0.326 \cdot \text{GMPOS} + 0.244 \cdot \text{GMJInfo} + 0.123 \cdot \text{GMACwrk}, \text{Errorvar.} = 0.328, R^2 = 0.672$$

Standerr	(0.0357)	(0.0362)	(0.0258)	(0.0222)	(0.0179)
Z-values	10.132	8.997	9.443	5.526	18.344
P-values	0.000	0.000	0.000	0.000	0.000

$$\text{GMACco} = 0.125 \cdot \text{GMPOS} + 0.198 \cdot \text{GMACorg} + 0.114 \cdot \text{GMACpt} + 0.187 \cdot \text{GMACprof}, \text{Errorvar.} = 0.793, R^2 = 0.207$$

Standerr	(0.0374)	(0.0429)	(0.0397)	(0.0419)	(0.0432)
Z-values	3.347	4.607	2.861	4.469	18.344
P-values	0.001	0.000	0.004	0.000	0.000

GMACco = 0.125*GMPOS + 0.198*GMACorg + 0.114*GMACpt + 0.187*GMACprof, Errorvar.= 0.793 , R² = 0.207
 Standerr (0.0374) (0.0429) (0.0397) (0.0419) (0.0432)
 Z-values 3.347 4.607 2.861 4.469 18.344
 P-values 0.001 0.000 0.004 0.000 0.000

GMACpt = 0.308*GMACorg + 0.230*GMACwrk, Errorvar.= 0.810 , R² = 0.190
 Standerr (0.0363) (0.0363) (0.0442)
 Z-values 8.481 6.331 18.344
 P-values 0.000 0.000 0.000

GMACprof = 0.295*GMACorg + 0.267*GMACpt - 0.128*GMACcar + 0.351*GMACwrk, Errorvar.= 0.577 , R² = 0.428
 Standerr (0.0323) (0.0325) (0.0313) (0.0334) (0.0314)
 Z-values 9.153 8.199 -4.096 10.502 18.344
 P-values 0.000 0.000 0.000 0.000 0.000

GMACtsk = 0.261*GMACorg + 0.176*GMACco + 0.124*GMACpt + 0.304*GMACprof, Errorvar.= 0.571 , R² = 0.430
 Standerr (0.0349) (0.0324) (0.0339) (0.0360) (0.0311)
 Z-values 7.479 5.414 3.666 8.445 18.344
 P-values 0.000 0.000 0.000 0.000 0.000

GMACcar = 0.352*GMACwrk, Errorvar.= 0.876 , R² = 0.124
 Standerr (0.0361) (0.0478)
 Z-values 9.763 18.344
 P-values 0.000 0.000

GMOCBI = 0.171*GMACco + 0.192*GMACpt + 0.120*GMACcar, Errorvar.= 0.889 , R² = 0.108
 Standerr (0.0380) (0.0382) (0.0366) (0.0485)
 Z-values 4.509 5.033 3.275 18.344
 P-values 0.000 0.000 0.001 0.000

GMOCBO = 0.486*GMACorg + 0.0777*GMACpt + 0.0815*GMACcar + 0.284*GMOCBI, Errorvar.= 0.562 , R² = 0.431
 Standerr (0.0313) (0.0320) (0.0294) (0.0302) (0.0306)
 Z-values 15.515 2.429 2.776 9.382 18.344
 P-values 0.000 0.015 0.006 0.000 0.000

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None Required